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RECEIVED

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

IN REPLY REFER TO:  
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AUG 23 2000

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

TO: GENEVIEVE SALMONSON, DIRECTOR  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: KAZU HAYASHIDA *KH*  
DIRECTOR OF TRANSPORTATION

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT - IMPROVEMENTS TO  
HONOAPIILANI HIGHWAY, ALAELAE POINT TO HONOLUA  
BAY, ISLAND OF MAUI

In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, and Title 11, Chapter 200 of the Administrative Rules of the State Department of Health, a Final Environmental Assessment has been prepared for the proposed project.

The Department of Transportation has reviewed comments received during the 30-day public comment period which began on June 8, 2000. We have determined that this project will not have significant environmental effects and has issued a Finding of No Significant Impact (FONSI). ✓

Under separate cover, one copy of the OEQC Publication Form and four copies of the Final EA are being transmitted to your office. We request that notice of the FONSI be published in the next edition of the *Environmental Notice*.

If you have any questions, please contact Mr. Robert O. Siarot, Maui District Engineer, at (808) 873-3535.

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2000-09-08 - <sup>NA</sup>~~EA~~-FEA-

HFC OF ENVIRONMENTAL  
QUALITY CONTROL

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# *Final Environmental Assessment*

## IMPROVEMENTS TO HONOAPILANI HIGHWAY, FROM ALAE LAE POINT TO HONOLUA BAY

Prepared for:

August 2000



MUNEKIYO, ARAKAWA & HIRADA, INC.

*Final Environmental  
Assessment*

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**IMPROVEMENTS TO  
HONOAPILANI HIGHWAY,  
FROM ALAELAE POINT  
TO HONOLUA BAY**

Prepared for:

August 2000



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kapalua/hp/iana/inalea.rpt

Preface

The applicant, Kapalua Land Company, Ltd., proposes to construct improvements to Honoapiilani Highway, from Alaelae Point to Honolua Bay, in Honolua, Maui, Hawaii. The proposed project affects lands within the State right-of-way and lands designated as TMK 4-2-5: 41, 42. Pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Hawaii Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

# ***Chapter 1***

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## ***Project Overview***

## **I. PROJECT OVERVIEW**

### **A. PROJECT LOCATION, EXISTING USE AND LAND OWNERSHIP**

The applicant, Kapalua Land Company, Ltd., is proposing to construct improvements to Honoapiilani Highway, from Alaelae Point to Honolua Bay. See Figure 1. Honoapiilani Highway is a two-way, two-lane roadway in the vicinity of the project.

The project site is located to the north of the Kapalua Resort area along an older segment of Honoapiilani Highway. Areas adjacent to the roadway intended as part of the project site are vacant.

Most of the improvements are proposed within the State-owned right-of-way. The project also extends over portions of parcels owned by Kapalua Land Company, Ltd. (TMK: 4-2-5: 41, 42). The project is proposed to be constructed by Kapalua Land Company, Ltd.

### **B. PROPOSED ACTION**

The applicant is proposing to construct improvements along four (4) non-contiguous segments of Honoapiilani Highway. Three (3) of the segments involve improvements to adjust curve radii and pavement widths to improve operating and safety conditions of the roadway. After completion of improvements, two-way, two-lane improvements would be maintained. Lane widths are proposed to be a minimum of 10 feet with a 4 foot-wide paved shoulder. One of the foregoing segments also includes upgrading of a drainage culvert. The remaining segment is a drainage system improvement.

The applicant is proposing the project in order to fulfill one of the conditions relating to the subdivision of lands comprising Plantation Estates. The subdivision is located mauka of the proposed roadway

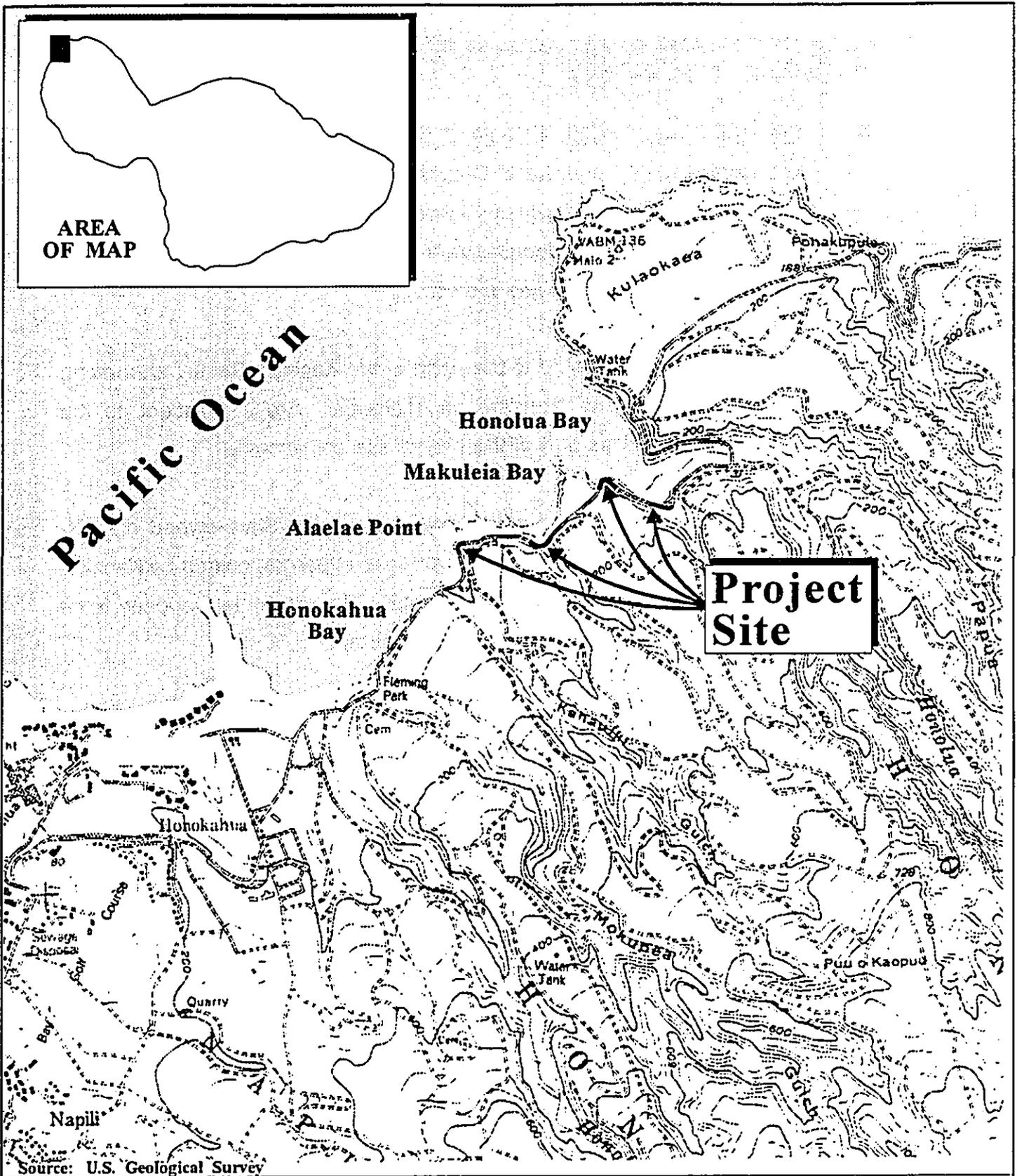


Figure 1 Honoapiilani Highway Improvements  
 from Alaelae Point to Honolua Bay  
 Regional Location Map



MUNEKIYO, ARAKAWA & HIRADA, INC.

Prepared for: Kapalua Land Company, Ltd.

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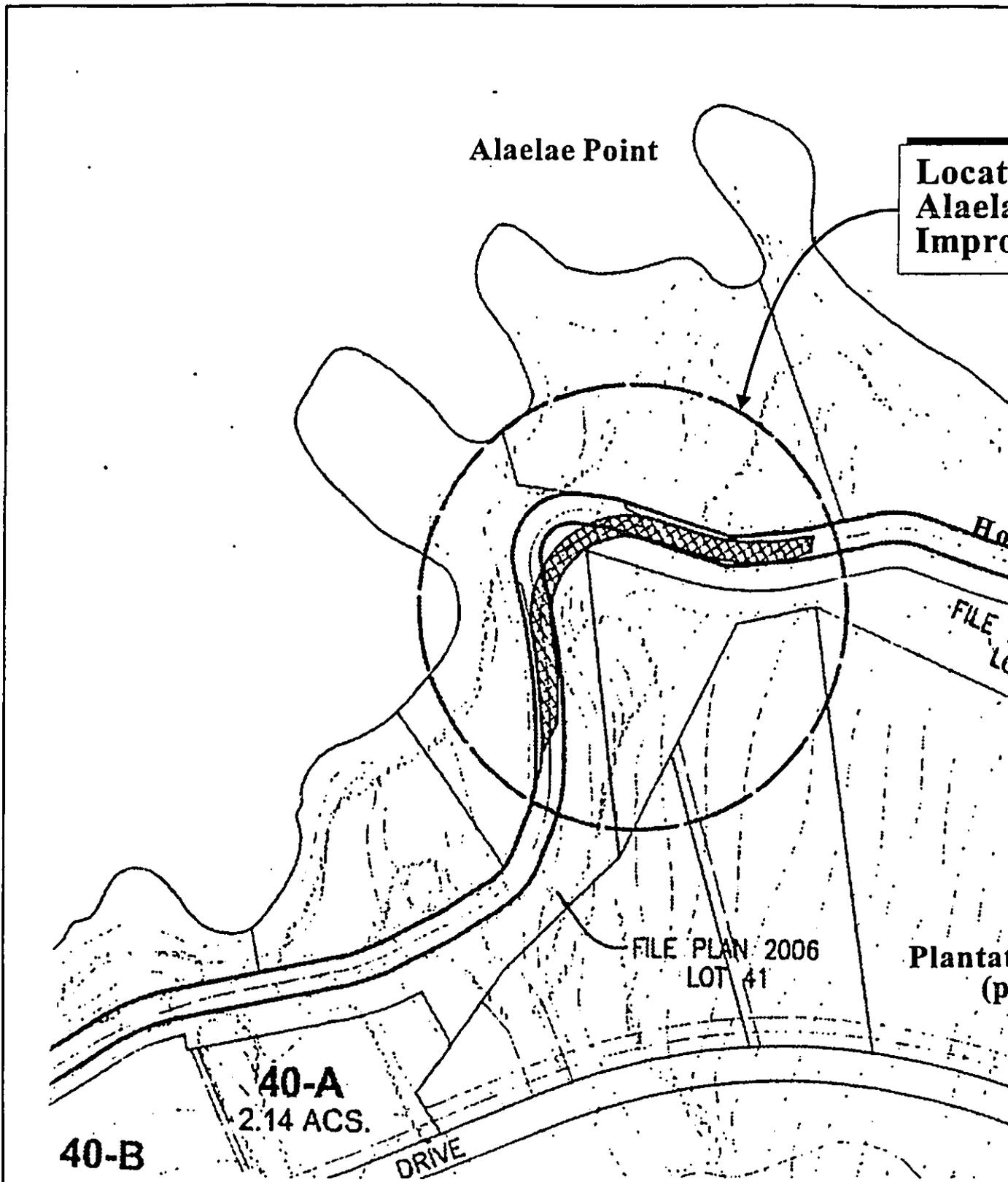
improvements.

Approximately 590 lineal feet of roadway would be improved around Alaelae Point. Approximately 620 lineal feet of roadway would be improved around Makuleia Bay. A new 81-inch by 59-inch corrugated aluminum pipe culvert across the highway is proposed as part of the Makuleia Bay segment. This would replace two (2) 24-inch drainage culverts. See Figure 2. Approximately 520 lineal feet of roadway is being improved near Honolua Bay. A new 24-inch drainline is being installed approximately 370 lineal feet to the east of the Honolua Bay roadway improvements. A grated inlet is proposed within the right-of-way. The drainline then extends easterly approximately 340 feet within the right-of-way and then outlets to an existing drainageway. See Figure 3.

Proposed improvements of roadway segments near Alaelae Point and Honolua Bay extend mauka from the existing right-of-way and are located within the County Special Management Area (SMA). Thus, a County SMA Use Permit would be required.

The proposed action involves the use of State lands which is a trigger for environmental review under Chapter 343, Hawaii Revised Statutes. This Environmental Assessment (EA) has been prepared in compliance with applicable environmental provisions.

Estimated construction timeframe is six (6) to nine (9) months. The construction cost is estimated at \$950,000.00.



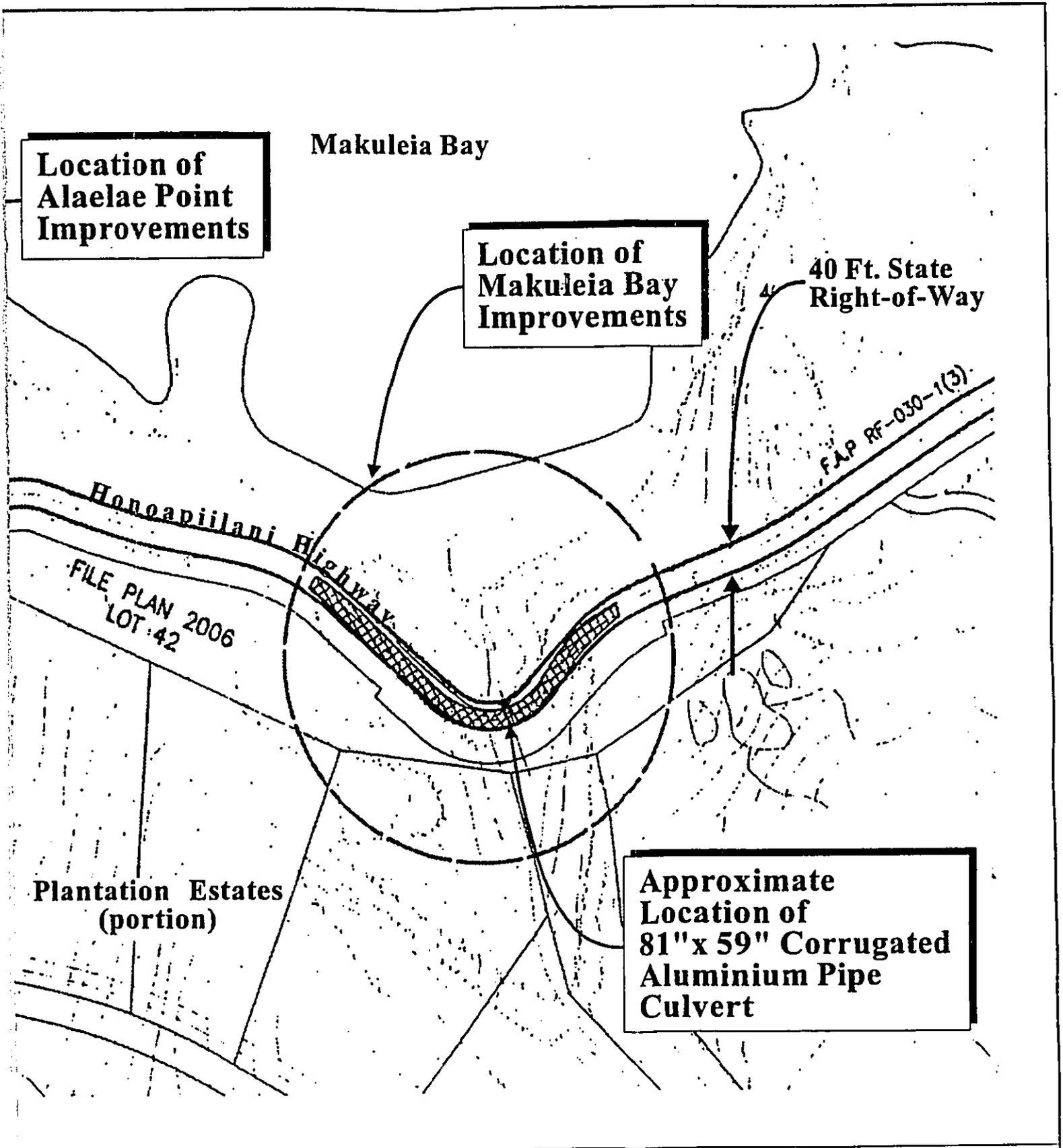
Source: Warren S. Unemori Engineering, Inc.

Figure 2



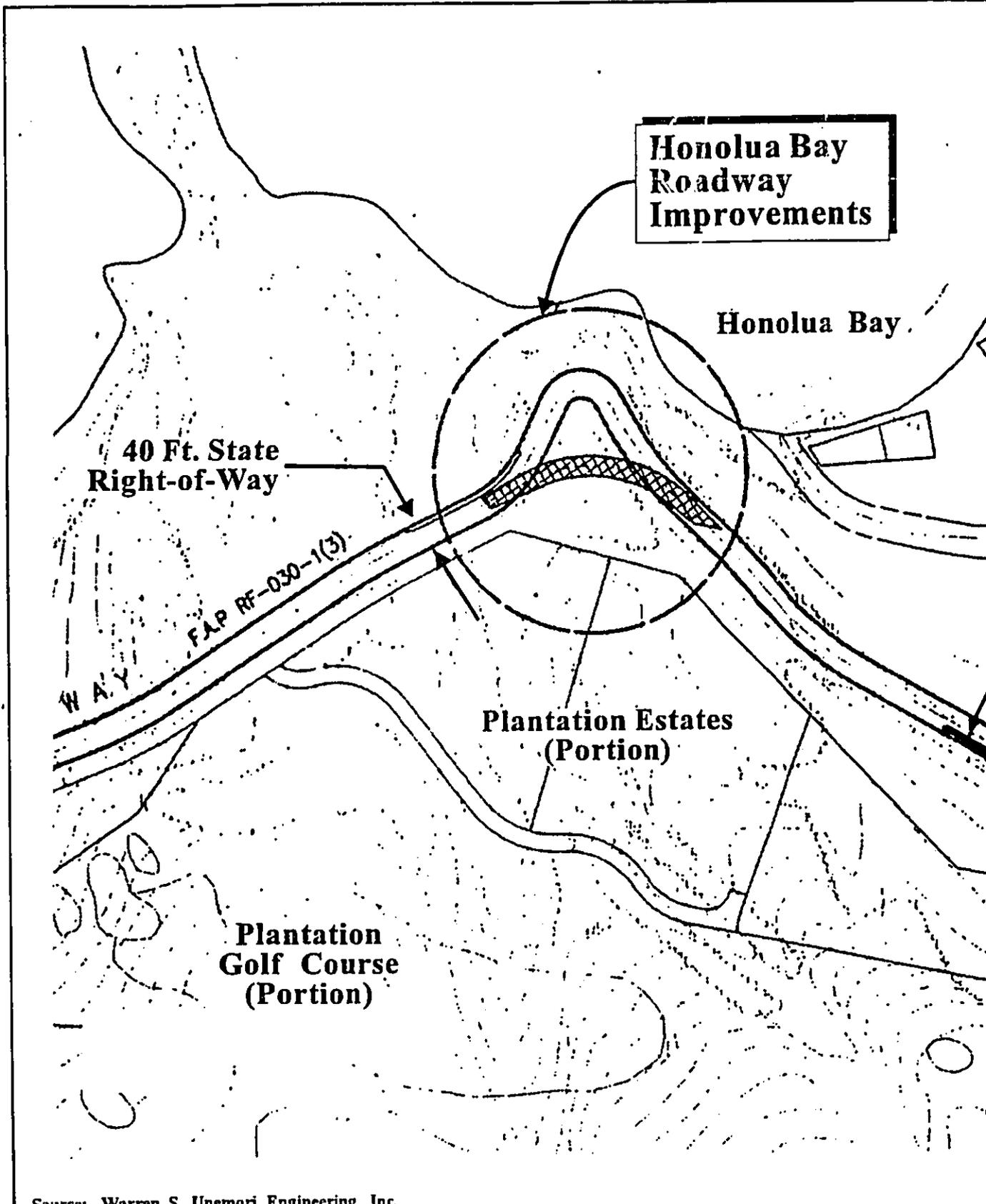
Honoapiilani Highway  
Alaelae Point to  
Proposed Alaelae Point and M

Prepared for: Kapalua Land Company, Ltd.



Highway Improvements from  
Point to Honolulu Bay  
and Makuleia Bay Improvements





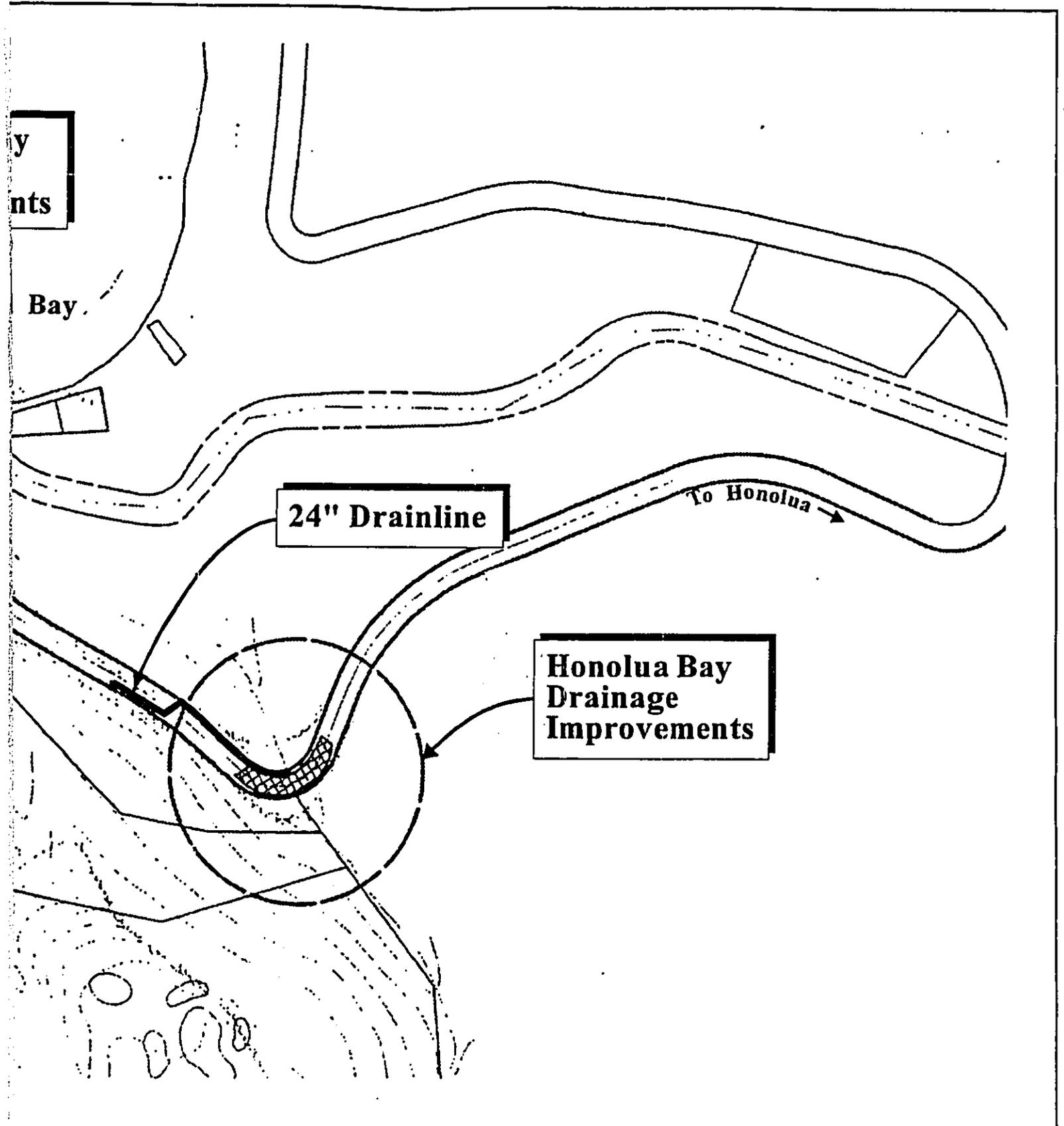
Source: Warren S. Unemori Engineering, Inc.

Figure 3

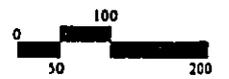
Honoapiilani Highway  
Alaelae Point to  
Proposed Honolua E



Prepared for: Kapalua Land Company, Ltd.



Highway Improvements from  
Point to Honolua Bay  
Honolua Bay Improvements



# ***Chapter II***

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***Description of the  
Existing Environment***

## **II. DESCRIPTION OF THE EXISTING ENVIRONMENT**

### **A. SURROUNDING LAND USES**

The project site is located in Kapalua, Maui, Hawaii. To the east and south of the project site are the Kapalua Resort's Plantation Golf Course and the Plantation Estates. To the north and west of the proposed improvements are Honolua Bay, Kalapiha Point, Makuleia Bay and Alaelae Point. Fleming Park is located approximately 0.4 mile to the southwest.

### **B. CLIMATE**

Like most areas of Hawaii, West Maui's climate is relatively uniform year-round. The region's tropical climate, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions, then are largely left to local terrain.

In Lahaina, August is historically the warmest month, with an average high temperature of approximately 88 degrees Fahrenheit and average low temperature of 70 degrees Fahrenheit. January is normally the coolest month of the year with an average high temperature of 80 degrees Fahrenheit and an average low temperature of approximately 62 degrees Fahrenheit (Department of Geography, 1983).

Rainfall at Lahaina is highly seasonal, with most precipitation occurring between October and April when winter storms hit the area. Precipitation data collected at the Wahikuli Station (#364) show that on average, January is the wettest month, with 3.31 inches of precipitation, while June is the driest, with just 0.25 inch. The average annual total is 18.5 inches.

The winds in the region are also seasonal. The northeasterly trade wind

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occurs 90 percent of the time during the summer, and 50 percent of the time in the winter. Wind patterns also vary on a daily basis, with trade winds generally being stronger in the afternoon. During the day, winds blow offshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

**C. TOPOGRAPHY AND SOILS**

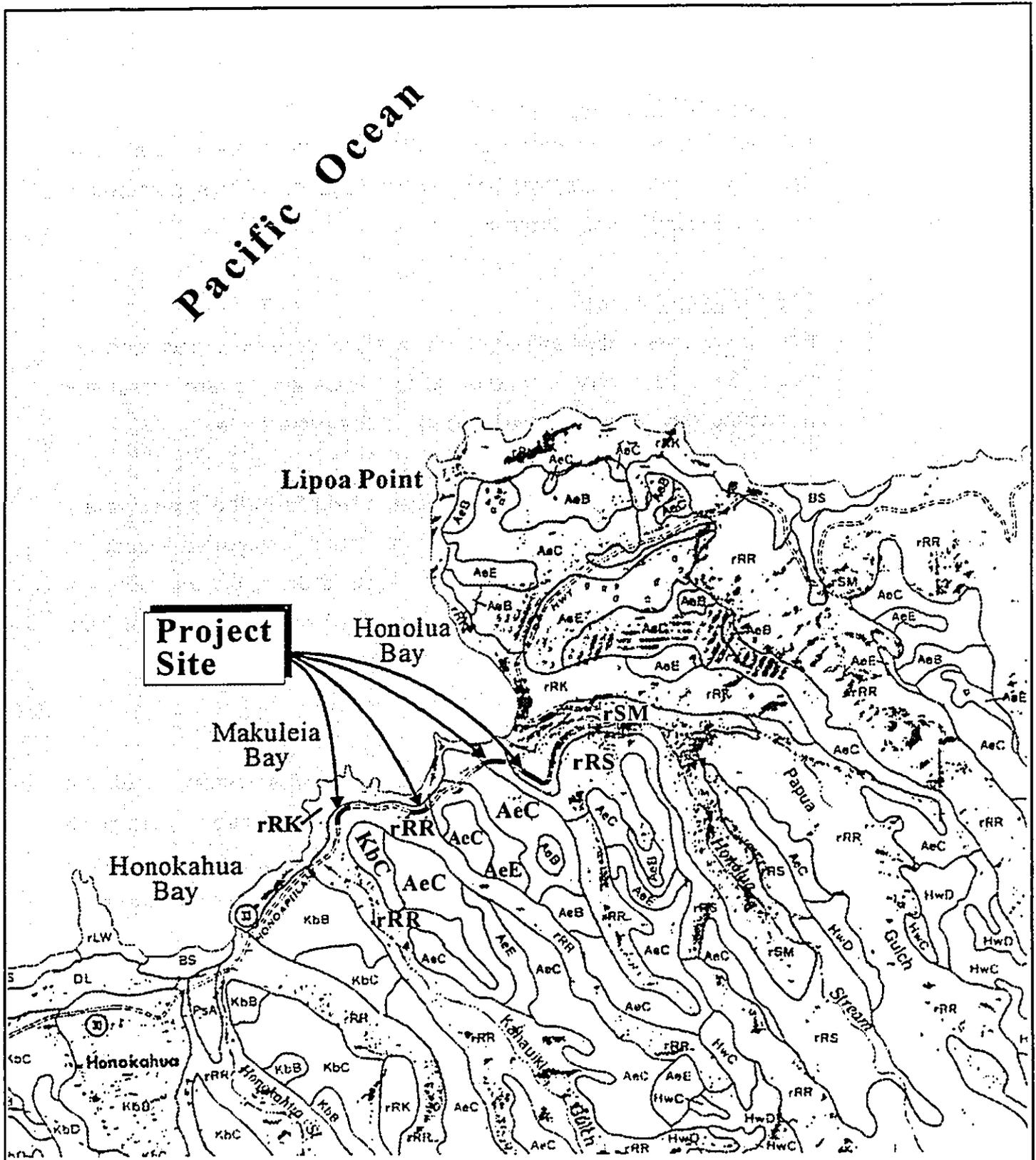
The project segment of Honoapiilani Highway near Alaelae Point ranges from approximately 36 feet to 70 feet above sea level. The Makuleia Bay segment ranges from approximately 74 feet to 104 feet above sea level. The Honolua Bay roadway segment ranges from approximately 60 to 112 feet above sea level. The Honolua Bay drainage segment is at approximately 36 to 48 feet above sea level.

Soil types specific to the project site include Rough broken land (rRR), Rough broken and stony land (rRS), and Stony alluvial land (rSM). See Figure 4.

Rough broken land (rRR) consists of very steep land broken by numerous intermittent drainage channels. In most places, it is not stony. Runoff is rapid and geologic erosion is active.

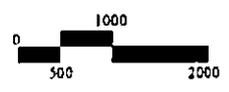
Rough broken and stony land (rRS) consists of very steep, stony gulches. Runoff is rapid and geologic erosion is active. Soil material is generally less than 20 inches deep over saprolite or bedrock. About 3 to 25 percent of the surface is covered with stones, and there are a few rock outcrops.

Stony alluvial land (rSM) consists of stones, boulders, and soil deposited by streams along the bottoms of gulches and on alluvial fans.



Source: Soil Conservation Service

**Figure 4 Honoapiilani Highway Improvements from Alaelae Point to Honolulu Bay**  
Soil Classification Map



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**D. FLOOD AND TSUNAMI HAZARD**

The Flood insurance Rate Map (FIRM) for this area of the island designates the project site as being within Zone "C", which is an area of minimal flooding. See Figure 5.

**E. FLORA AND FAUNA**

Predominant vegetation adjacent to the right-of-way include ironwood, koa haole, Christmas berry, and buffel grass. There are no rare, threatened or endangered species of plants found at the project site.

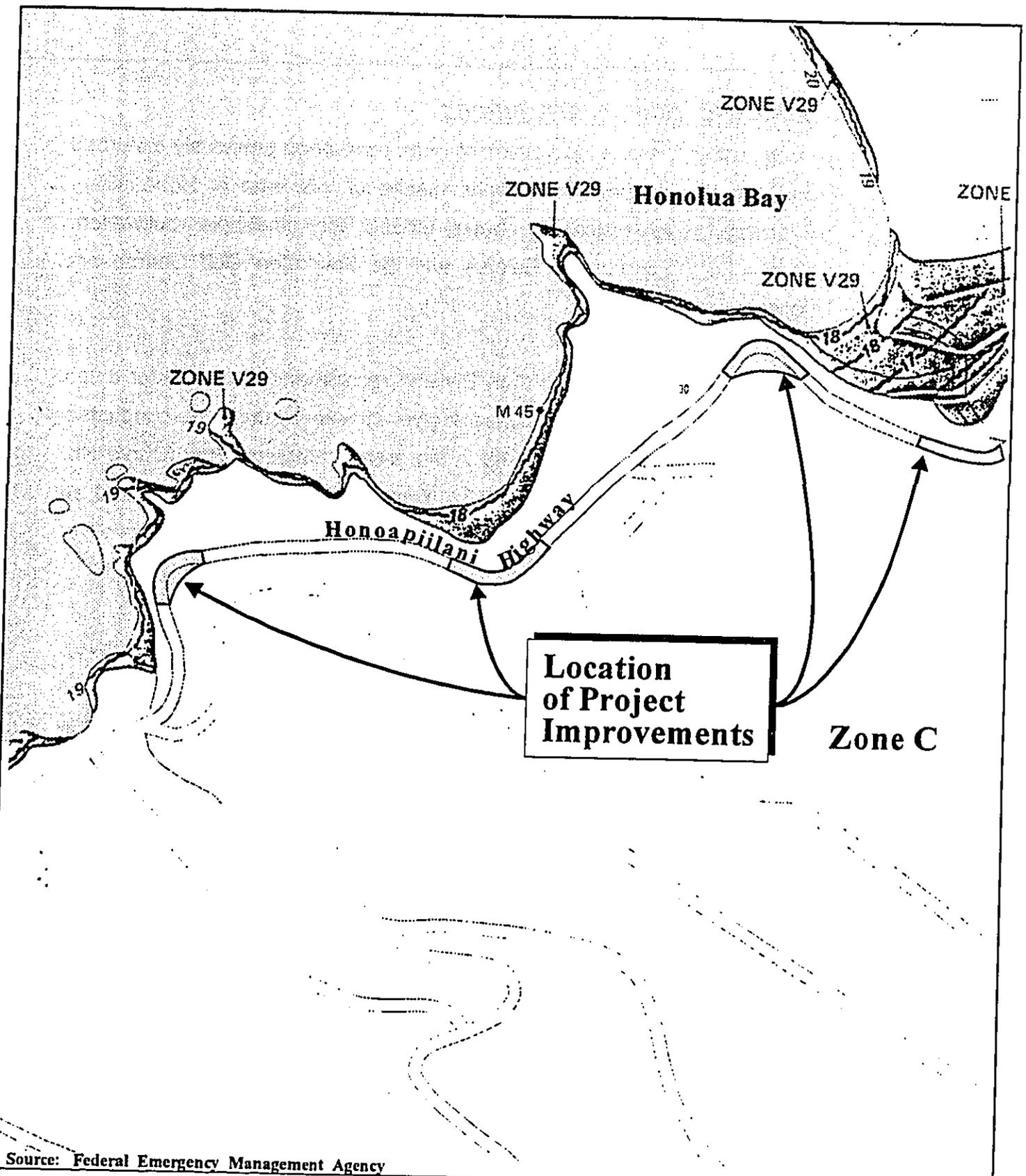
Animal life which may be found in close proximity to the project site is typical of West Maui. Avifauna commonly found in this area include the common mynah, Japanese white-eye, spotted dove, barred dove, and house finch. There are no known endangered or rare species of fauna or avifauna found in the vicinity of the project site.

**F. AIR QUALITY**

The subject property does not experience adverse air quality conditions. Airborne pollutants that do exist can largely be attributed to automobile exhaust from surrounding roadways. Other regional sources of emissions may be attributed to nearby pineapple operations. These sources are intermittent, however, and the prevailing trade winds will disperse particulates generated by these sources.

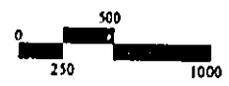
**G. NOISE**

Existing background noise in the vicinity of the site is principally attributed to traffic traveling on Honoapiilani Highway. Other sources of noise are due to natural conditions (i.e., surf, wind, rain). There are no permanent sources of noise which are considered to have an adverse impact upon the resort area.



Source: Federal Emergency Management Agency

**Figure 5 Honoapiilani Highway Improvements from Alaelae Point to Honolulu Bay**  
 Flood Insurance Rate Map



Prepared for: Kapalua Land Company, Ltd.

MUNEKIYO, ARAKAWA & HIRADA, INC.

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**H. ARCHAEOLOGICAL RESOURCES**

Areas within the existing pavement width have been previously disturbed by roadway construction. Lands mauka of this area of Honoapiilani Highway have historically been utilized for pineapple cultivation. Currently, the Plantation Estates and the Plantation Golf Course are located on these lands.

The State Historic Preservation Division recommended, in a letter dated August 17, 1999, that an archaeological inventory survey be conducted for the proposed improvements in the area of Makuleia Bay (Curve No. 2) and Honolua Bay (Curve No. 3). Xamanek Researches conducted an archaeological inventory survey for the project site focusing on Curve No. 2 and Curve No. 3. See Appendix A.

One previously unrecorded site (Site 4829) was found during the survey. This site consists of a dry-laid rock retaining wall associated with Honoapiilani Highway at Curve No. 2. According to an informant, the wall is believed to have been built in the early 1940's. The site is also believed to be in its original configuration and has not been extensively rebuilt since its construction.

The inventory survey notes that the site is a good example of dry-laid stone masonry work. Many of the feature's rocks have been shaped from the native basalt rock present in this part of Maui. No mortar was observed in the overall dry-laid structure. Site 4829 is in generally good overall condition.

Two test units were placed at Curve No. 3. There were no significant material remains found during testing in this area.

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**I. SCENIC RESOURCES**

Lands on the east and southwest of the project site are part of the Kapalua Resort which contains hotel uses, golf courses and related amenities, multi-family and single-family residential uses, and retail commercial uses. Lands further east of the site are largely in open space and agriculture. The Pacific Ocean is located to the north and west of the site.

**J. SOCIO-ECONOMIC ENVIRONMENT**

**1. Regional Setting**

The majority of lands in West Maui are either State designated "Conservation" or "Agricultural". Generally, "Conservation" lands occupy the higher elevations, while the "Agricultural" district spans the foothills of the West Maui Mountains.

"Urban" designated lands occupy the lower elevations along the coast and include the communities of Kahana-Napili-Kapalua and Kaanapali. These areas include several hotels and visitor-oriented condominiums and residential communities. Lahaina, meanwhile, is more typical of a small town community. Single-family, business, light industrial and agricultural zones prevail in this part of West Maui.

The town of Lahaina is the commercial center for West Maui. The town contains several shopping and retail business areas, and serves as a core for the region's residential housing.

Part of West Maui's attraction can be attributed to its year-round dry and warm climate, complemented by many white-sand beaches and scenic landscape. Most of the visitor accommodations are

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located in Lahaina and the resort communities of Kaanapali, Kahana, Napili and Kapalua.

The Kapalua-West Maui Airport at Mahinahina conveniently links West Maui to Oahu and other neighbor islands.

Maui Land and Pineapple Company's pineapple fields are found along the slopes of the West Maui Mountains, to the east of the project site.

**2. Population**

The resident population of the Lahaina Community Plan region has demonstrated a substantial increase over the last two decades. Population gains were especially evident in the 1970's as the rapidly developing visitor industry attracted many new residents. The current population of the Lahaina District is estimated at 14,574 (Community Resources, Inc., 1994). A projection of the resident population for the years 2000 and 2010 are 18,555 and 22,633 respectively.

Growth at the County level exhibits a similar pattern. The County's 1980 resident population of 71,000 has since grown to the present 100,000. The estimated County population in 2010 is 145,872 (Community Resources, Inc., 1994).

**3. Economy**

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. The Kapalua area contains the Ritz Carlton -

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Kapalua (548 rooms) and the Kapalua Bay Hotel (209 rooms). In addition to Kapalua, the Kaanapali Resort, located approximately five (5) miles to the south of the project site, hosts a number of hotels, including the Maui Marriott Resort (720 rooms), Hyatt Regency Maui (816 rooms), the Westin Maui (761 rooms), and the Sheraton Maui (510 rooms).

West Maui's visitor orientation is reflected in the character of Lahaina Town, which serves as a center for visitor-related retail outlets, as well as visitor-related activities.

In terms of the agriculture industry, Pioneer Mill Company, Inc. recently ceased sugar cane cultivation on its lands. Of its 6,700 acres, approximately 500 acres are currently utilized for the growing of coffee. Cultivation of other crops, such as seed corn and sweet corn, are being attempted. Additionally, Maui Land and Pineapple Company's pineapple fields in the Honolua region are an important component of the region's agricultural base.

**K. PUBLIC SERVICES**

**1. Recreational Facilities**

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are a number of County parks and State beach parks in West Maui. Approximately one-third of the County parks are situated along the shoreline and are excellent swimming, diving, and snorkeling areas. Popular surf spots include Fleming Beach, Honolua Bay, and Rainbows. In addition, Kapalua and Kaanapali Resorts operate world-class golf courses which are available for public use.

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Honolua Bay and Makuleia Bay have been designated as a Marine Life Conservation District (MLCD) by the State of Hawaii Department of Land and Natural Resources. The intent of the MLCD is to conserve and replenish marine resources. The bays are popular for snorkeling, diving and underwater photography.

**2. Police and Fire Protection**

The project site is within the Lahaina Police Station service area, which services all of the Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately ten (10) miles south of the project site.

Fire prevention, suppression and protection services for the Lahaina district are provided by the Lahaina Fire Station, also located in the Lahaina Civic Center and the Napili Fire Station, located in Napili.

**3. Medical Facilities**

The only medical facility on the island is Maui Memorial Medical Center, located approximately twenty (20) miles from Lahaina, midway between Wailuku and Kahului. The 194-bed facility provides general, acute and emergency care services.

In addition, regular hours are offered by the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente Medical Care Program.

**4. Schools**

The State of Hawaii, Department of Education operates four (4) public schools in West Maui: Lahainaluna High School; Lahaina

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Intermediate School; King Kamehameha III Elementary School; and Princess Nahienaena Elementary School. All of the public schools are located within the Lahaina Town area.

5. **Solid Waste**

Single-family residential solid waste collection service is provided by the County of Maui on a once-a-week basis. Residential solid waste collected by County crews are disposed at the County's 55-acre Central Maui Landfill located four (4) miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

L. **INFRASTRUCTURE**

1. **Roadway System**

Honoapiilani Highway (State Highway 30) is the main roadway serving the West Maui region. The highway has a typical two-lane configuration from Central Maui extending through Maalaea, Lahaina and Kaanapali. However, an existing segment from Lahainaluna Road to Kaanapali Parkway contains four (4) travel lanes. Another four (4) lane segment from Kaanapali Parkway to the Honokowai Stream Bridge is currently under construction.

In the vicinity of the subject project, Honoapiilani Highway consists of a two-lane configuration within a 40 feet wide right-of-way. Although Honoapiilani Highway also extends around the north coast of the island to Waihee, this is a non-standard segment providing limited access.

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**2. Water**

The privately operated Kapalua Water Company (KWC) water system services nearby Kapalua Resort. The KWC provides potable, fire protection and irrigation water for the resort.

There are no waterlines within the roadway segments included in this project which are owned or operated by KWC or the County of Maui, Department of Water Supply.

**3. Wastewater**

The County's Lahaina Wastewater Reclamation Facility services the region's wastewater needs. The collection system extends from Lahaina Town to Kapalua. However, it does not extend to the roadway segments included in the subject project.

**4. Drainage**

Most of the project site is presently in roadway use with the remainder of the project area being in an undeveloped state. At the Makuleia Bay segment, there are two (2) existing 24-inch drainage culverts extending across Honoapiilani Highway.

**5. Electrical and Telephone**

Electrical and telephone service to the West Maui region is provided by Maui Electric Company and GTE Hawaiian Telephone Company, respectively.

# ***Chapter III***

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## ***Potential Impacts and Mitigation Measures***

### **III. POTENTIAL IMPACTS AND MITIGATION MEASURES**

#### **A. PHYSICAL ENVIRONMENT**

##### **1. Surrounding Environment**

The project site is located near the northern boundary of the Kapalua Resort area. On the mauka side of this segment of Honoapiilani Highway is the Plantation Estates and Golf Course. Further south, the Kapalua Resort also contains the Village and Bay Golf Courses, the Ritz Carlton Hotel, Kapalua Bay Hotel and several resort and residential uses. Continuing south along the coastline are the towns of Napili, Kahana, Honokowai, Kaanapali and Lahaina.

On the makai side of the project site are Honolua Bay and Makuleia Bay both of which are designated as a Marine Life Conservation District. To the northeast of the project site, Honoapiilani Highway continues near the shoreline. Although it passes the settlements of Honokohau and Kahakuloa, these areas of West Maui are sparsely populated.

The proposed project upgrades four (4) segments of Honoapiilani Highway and should not cause any adverse effects on surrounding land uses.

##### **2. Topography/Landform**

The project will involve excavation into existing embankments in order to lessen the severity of curves in the highway, provide additional space for shoulder improvements, and address drainage concerns. The project thus provides safety improvements for motorists as well as provision of additional drainage capacity to upgrade the existing system. Excavation and filling would be

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warranted to accomplish these ends. A Best Management Practices Plan will be prepared to show the location and details of structural and non-structural measures to control erosion and sedimentation. Excavated areas will be hydromulched and covered with geojute or an approved equal. Other graded or fill areas shall be grassed immediately after grading. Drainage improvements shall be implemented to result in no adverse effect to downstream properties.

**3. Flora and Fauna**

There are no known significant habitats or rare, endangered or threatened species of flora or fauna located on the project site. In addition, the proposed improvements are not anticipated to impact wetland areas and wildlife habitats. As such, the removal of vegetation and displacement of wildlife from the project site is not considered an adverse impact to these components of the natural environment.

**4. Air Quality**

Air quality impacts associated with the project include dust generated by short-term construction-related activities. Site work, such as grading and grubbing as well as excavation and fill, will generate airborne particulates. Regular watering and sprinkling will be implemented as soon as practicable in order to minimize the time which graded areas are left exposed.

No significant long-term air quality impacts resulting from the project are anticipated.

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5. **Noise**

As with air quality, ambient noise conditions will be impacted by construction activities. All construction activities are anticipated to be limited to daylight hours to the greatest extent practicable. The contractor will be required to coordinate with the State Department of Health regarding the applicability of a noise permit.

There are no adverse long-term noise conditions arising out of the proposed action.

6. **Archaeological Resources**

The archaeological inventory survey conducted for the project revealed one previously undiscovered site. Site 4829 consists of dry-laid rock retaining walls associated with a drainage crossing for Honoapiilani Highway. No indications of precontact activity were found in the area covered by the inventory survey.

Site 4829 qualifies for significance under Criterion "D" of the State and Federal historic preservation guidelines. It is considered important for the information that it has yielded or is likely to yield. This crossing is a very good example of historic dry-laid masonry work associated with road building in the mid-20th century. As such, it qualifies for significance under Criterion "C" as well.

Site 4829 has aesthetic value and the study recommends that this crossing be incorporated in the proposed improvements for Honoapiilani Highway, if possible. It is felt that the makai (eastern) section of the wall is particularly noticeable, and would aesthetically enhance any road improvement.

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It is noted that the makai portion of the wall is outside of the right-of-way and will not be affected by the construction. Since a larger culvert is being installed, portions of the mauka wall will be affected. Should any human remains or significant cultural materials be found during construction on any portion of the project, the State Historic Preservation Division will be notified and appropriate mitigation measures taken.

7. **Scenic Resources**

The proposed project represents an upgrade to the operating and safety characteristics of selected segments of Honoapiilani Highway. No increase in laneage is being proposed as part of this action.

The proposed project is in keeping with the aesthetic and visual character of the area and is not anticipated to have an adverse impact upon the visual character of the surrounding area.

B. **SOCIO-ECONOMIC ENVIRONMENT**

1. **Population and Local Economy**

On a short-term basis, the project will support construction and construction-related employment. Accordingly, the project will have a beneficial impact on the local economy during the period of construction.

In the long term, the project does not result in any adverse effects upon population and economic parameters.

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**C. PUBLIC SERVICES**

**1. Public Services**

The proposed project should improve accessibility for police, fire and medical services. Recreational facilities such as the Honolulu Bay and Makuleia Bay Marine Life Conservation District should also benefit from increased accessibility. The project should have no effect upon service areas or requirements for public schools.

**2. Solid Waste**

A solid waste management plan will be developed in coordination with the Solid Waste Division of the County Department of Public Works and Waste Management for the disposal of clearing, grubbing and excavated material from the site during construction.

**D. INFRASTRUCTURE**

**1. Roadway System**

During construction, at least one (1) lane of traffic will be open at all times. Travel lanes shall be at least 10 feet in width.

The proposed project will be improving the operating characteristics of four (4) segments of Honoapiilani Highway. In the long term, the project will not generate vehicular traffic and should not result in adverse traffic impacts in the vicinity.

**2. Water**

During grading and construction, non-potable water is intended to be used for dust control, as appropriate.

The proposed improvements will not require any water hookup and should not impact existing water supply or delivery system

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parameters.

**3. Wastewater**

The project will not generate any wastewater and will have no impacts upon wastewater disposal parameters or the County's wastewater system.

**4. Drainage**

An 81-inch by 59-inch corrugated aluminum pipe arch drainage culvert with reinforced concrete inlet and outlet structures is proposed to be constructed at the Makuleia Bay segment. This drainage culvert was designed to accommodate a 100 year recurrence interval-24 hour duration storm. The 81-inch by 59-inch aluminum pipe arch will replace two (2) existing 24-inch drainage culverts.

The second drainage improvement consists of an underground drainage system. This consists of a new grated inlet catch basin, drain manholes, 24-inch corrugated aluminum pipe drainline and a reinforced concrete outlet structure. This drainage system is designed to accommodate a 50 year recurrence interval-1 hour storm. The new drainage system will be installed at the existing low point of the highway where surface runoff currently ponds and then sheet flows across the highway into an existing natural drainageway. The surface runoff at the low point of the highway will be intercepted and conveyed by means of a new underground drainage system to outlet into the previously mentioned existing natural drainageway where the surface runoff is currently being discharged.

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The proposed drainage improvements will help to convey offsite runoff across the highway. The improvements will help mitigate the flooding problem which currently exists along the highway and will not have an adverse effect on adjacent downstream properties. See Appendix B.

Erosion control measures will also be implemented during the construction phase of the project. Specific measures to be implemented are noted as follows:

- a. Minimize time of construction.
- b. Retain ground cover until the latest date to complete construction.
- c. Early construction of drainage control features.
- d. Use temporary area sprinklers in non-active construction areas when ground cover is removed.
- e. Station water truck on-site during construction to provide for immediate sprinkling, as needed, in active construction zones (weekends and holidays included).
- f. Use temporary berms and cut-off ditches, where needed, for control of erosion.
- g. Graded areas shall be thoroughly watered after construction has ceased for the day and on weekends.
- h. All cut and fill slopes shall be sodded or planted immediately after grading work has been completed.

# ***Chapter IV***

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***Relationship to Land Use  
Plans, Policies and Controls***

#### **IV. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS**

**A. STATE LAND USE DISTRICT**

Chapter 205A, Hawaii Revised Statutes, relating to the Land Use Commission, establishes the four (4) major land use districts in which all lands in the State are placed. These districts have been designated "Urban", "Rural", "Agricultural", and "Conservation". The project site is in the Agricultural District. See Figure 6. The proposed project is compatible with the "Agricultural" designation.

**B. GENERAL PLAN OF THE COUNTY OF MAUI**

The General Plan of the County of Maui (1990 Update) provides long-term goals, objectives, and policies directed toward the betterment of living conditions in the County. Addressed are social, environmental, and economic issues which influence both the quantity and quality of growth in Maui County.

**LAND USE**

**Objective:**

To develop a program for anticipating and enlarging the local street and highway systems in a timely response to planned growth.

**Policy:**

Ensure that transportation facilities are anticipated and programmed for construction in order to support planned growth.

**C. WEST MAUI COMMUNITY PLAN**

Nine (9) community plan regions have been established in Maui County. Each region's growth and development is guided by a Community Plan, which has objectives and policies drafted in accordance with the County General Plan. The purpose of the Community Plan is to outline a



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relatively detailed agenda for carrying out these objectives. In particular, the project is in consonance with the following Community Plan objective:

Support improvements for the safe and convenient movement of people and goods, pedestrians and bicyclists in the Lahaina region particularly along Honoapiilani Highway, Front Street and Lower Honoapiilani Road and seek to establish a regional network of bikeways and pedestrian paths.

The proposed project site is designated "Agricultural" by the Land Use Map of the West Maui Community Plan. The proposed project is consistent with this designation. See Figure 7.

**D. ZONING**

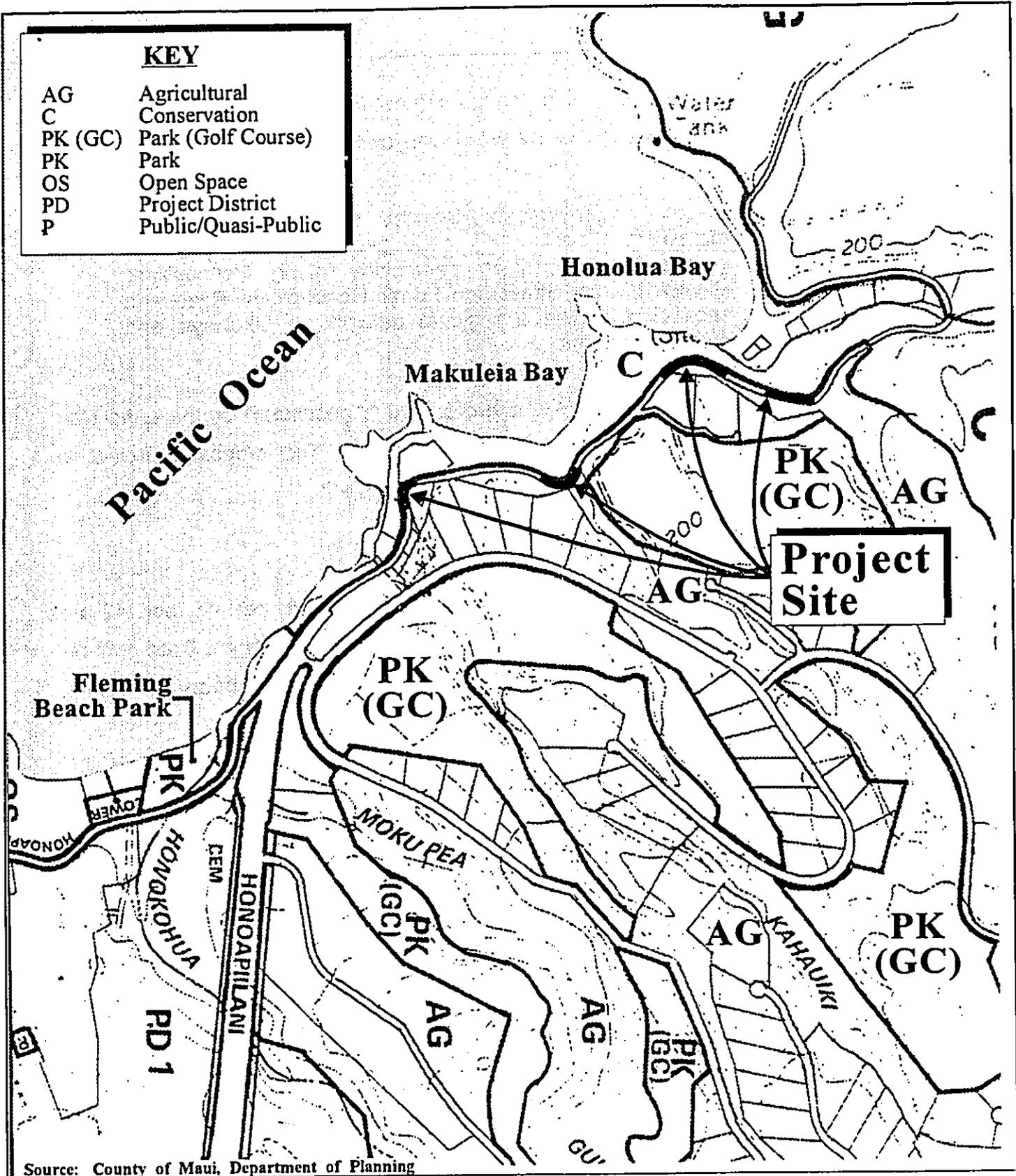
Portions of the project which traverse TMK 4-2-5: por. 41, por. 42 are zoned County Agricultural District. Land within the existing State right-of-way is unzoned. The proposed project is not contrary to zoning provisions.

**E. SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES**

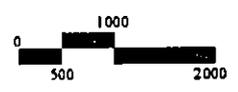
Pursuant to Chapter 205A, Hawaii Revised Statutes, and the Rules and Regulations of the Maui Planning Commission, projects located within the SMA are evaluated with respect to SMA objectives, policies and guidelines.

It is noted that the County SMA line generally follows the Honoapiilani Highway right-of-way in this area. However, proposed roadway improvements near Alaelae Point and Honolua Bay are also within the County SMA. See Figure 8.

This section addresses the project's relationship to applicable coastal

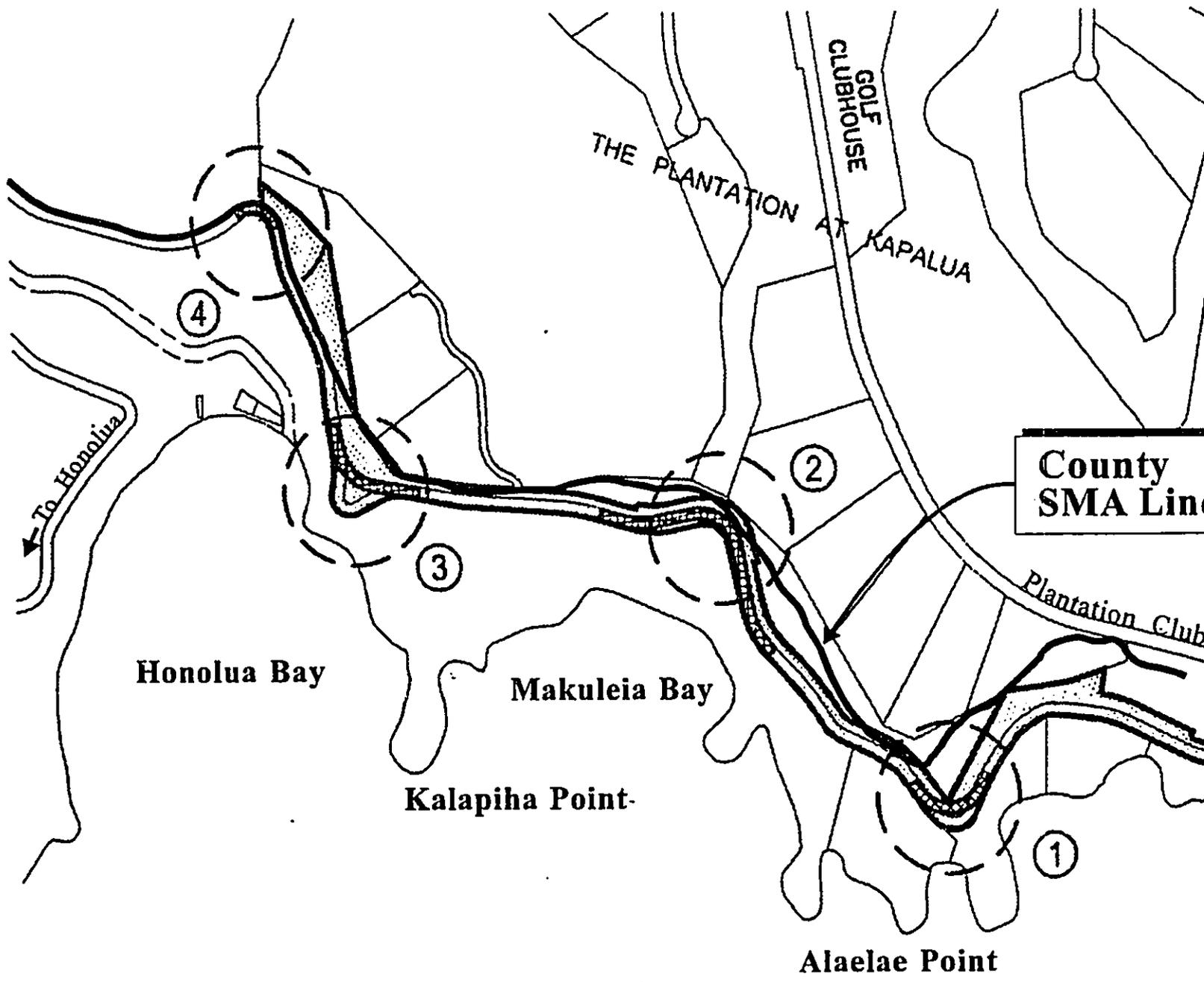


**Figure 7** Honoapiilani Highway Improvements from Alaelae Point to Honolua Bay  
West Maui Community Plan



MUNEKIYO, ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.



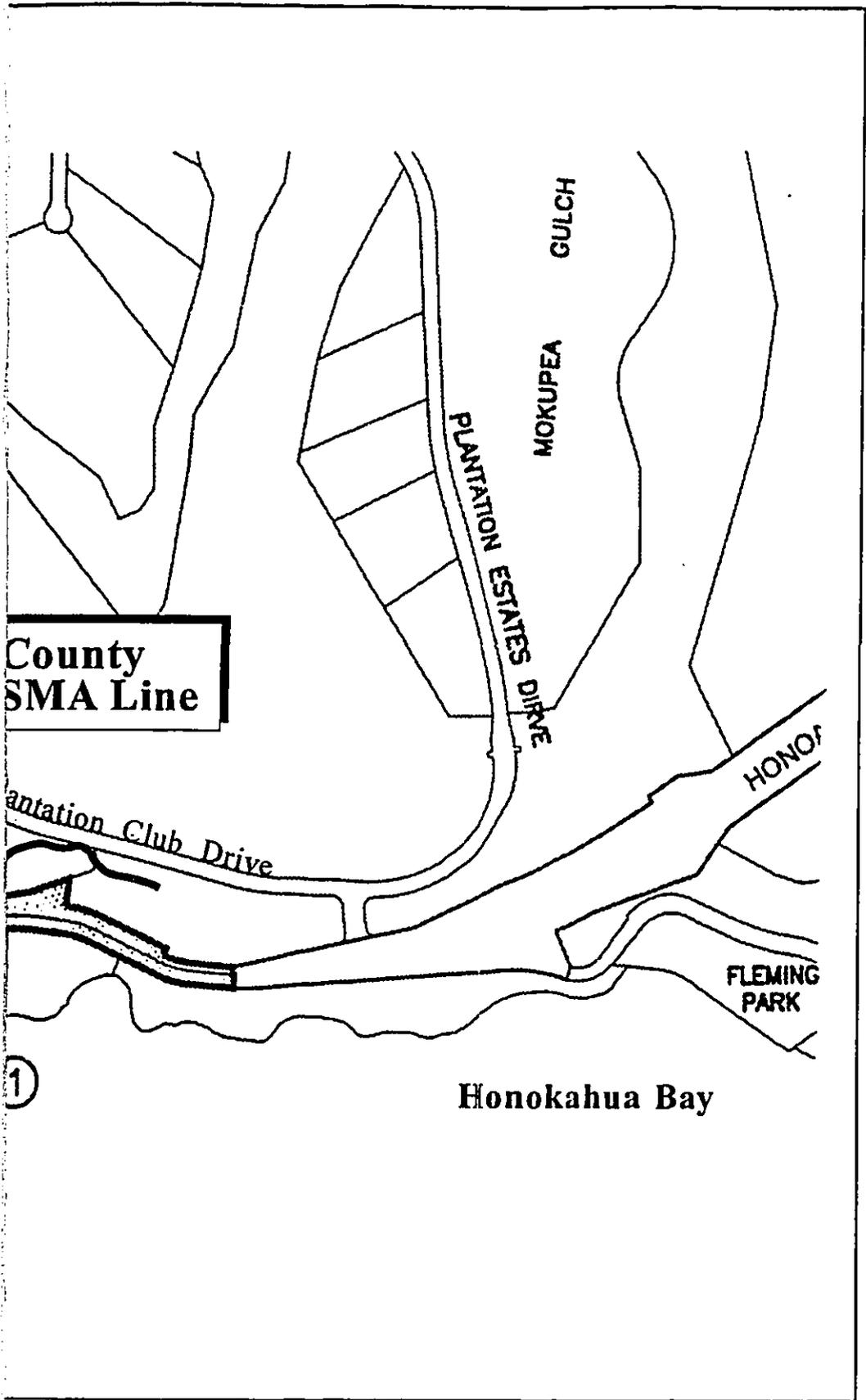
Source: Warren S. Unemori Engineering, Inc.

Figure 8

Honoapiilani Highway Improvement  
 Alaelae Point to Honolua Bay  
 County SMA Line



Prepared for: Kapalua Land Company, Ltd.



Improvements from  
 Honokahua Bay  
 Site



MUNEKIYO, ARAKAWA & HIRADA, INC.

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management considerations, as set forth in Chapter 205A and the Rules and Regulations of the Planning Commission.

(1) **Recreational Resources**

**Objective:**

Provide coastal recreational opportunities accessible to the public.

**Policies:**

- (A) Improve coordination and funding of coastal recreational planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
  - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
  - (ii) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;
  - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
  - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
  - (v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
  - (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
  - (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial

- 
- beaches, and artificial reefs for surfing and fishing;  
and
- (viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

**Response:** The proposed project is not anticipated to affect the quality or quantity of existing coastal or inland recreational resources. However, accessibility to these resources may be indirectly improved as a result of the project.

(2) **Historic Resources**

**Objective:**

Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

**Policies:**

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

**Response:** Makai portions of a historic dry-laid rock retaining wall (Site 4829) will be retained. Since the proposed project involves the construction of a larger culvert, portions of the mauka wall will, however, be affected. If cultural materials are uncovered, the County of Maui Planning Department and the State Historic Preservation Division will be notified in order to determine appropriate mitigation measures.

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(3) **Scenic and Open Space Resources**

**Objectives:**

Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

**Policies:**

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

**Response:** The proposed improvements will not significantly affect coastal scenic and open space resources. The project will not adversely affect public views to and along the shoreline.

(4) **Coastal Ecosystems**

**Objective:**

Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

**Policies:**

- (A) Improve the technical basis for natural resource management;
- (B) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (C) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

- 
- (D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

**Response:** Improvements to the roadway and drainage systems are not expected to adversely impact coastal ecosystems. Erosion control measures will be implemented during construction to ensure that coastal ecosystems are not adversely impacted.

(5) **Economic Uses**

**Objectives:**

Provide public or private facilities and improvements important to the State's economy in suitable locations.

**Policies:**

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

**Response:** The project would have a beneficial short term impact

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to the economy during construction. In the long term, the project provides safety and operational improvements to a segment of Honoapiilani Highway which indirectly supports the region's economic stability.

(6) **Coastal Hazards**

**Objectives:**

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence and pollution.

**Policies:**

- (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (D) Prevent coastal flooding from inland projects; and
- (E) Develop a coastal point and nonpoint source pollution control program.

**Response:** Erosion control measures will be incorporated during the construction period to minimize soil loss and erosion hazards. All drainage improvements will conform to County standards. No adverse drainage impacts to downstream properties should result from the proposed project.

(7) **Managing Development**

**Objectives:**

Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

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**Policies:**

- (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- (C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

**Response:** In compliance with the Special Management Area Rules and Regulations of the County of Maui, required documentation will be filed with the County Planning Department and will undergo public hearing and decision by the Maui Planning Commission. In addition, early consultation is provided through the process of preparing the Environmental Assessment. A Draft Environmental Assessment is prepared for public review in compliance with Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement rules.

Applicable State and County requirements will be adhered to in the design and construction of the proposed project.

**(8) Public Participation**

**Objectives:**

Stimulate public awareness, education, and participation in coastal management.

**Policies:**

- (A) Maintain a public advisory body to identify coastal

- 
- management problems and to provide policy advice and assistance to the coastal zone management program;
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
  - (C) Organize workshops, policy dialogues, and site-specific medications to respond to coastal issues and conflicts.

**Response:** A public hearing is required as part of the County's SMA process. The proposed project is not contrary to the objective of public awareness, education and participation.

(9) **Beach Protection**

**Objectives:**

Protect beaches for public use and recreation.

**Policies:**

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

**Response:** The proposed project does not involve any construction work seaward of the shoreline setback and should have no significant effect on beaches in the region.

(10) **Marine Resources**

**Objectives:**

Implement the State's ocean resources management plan.

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**Policies:**

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

**Response:** The proposed project is not anticipated to have adverse effects upon marine and coastal resources in the vicinity. Appropriate erosion control measures will be utilized during construction. The project will not result in any significant increase in peak flow runoff rates and runoff volumes.

**F. OTHER REGULATORY AND PERMITTING CONSIDERATIONS**

The proposed project involves drainage improvements which outlet into existing drainageways. Areas of the proposed improvements are not indicated as streams on the United States Geological Survey Quadrangle Maps. Regulatory permits such as the Department of the Army permit, Section 401 Water Quality Certification, Hawaii Coastal Zone Management Consistency Assessment, Stream Channel Alteration permit or a National Pollutant Discharge Elimination System permit, would not be required.

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Applicable construction permits, such as the County grading permit, will be obtained prior to the start of construction.

# ***Chapter V***

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***Summary of Adverse  
Environmental Effects  
Which Cannot be Avoided***

**V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED**

The proposed project will result in unavoidable construction-related impacts which include noise-generated impacts occurring from the proposed improvements. In addition, there may be temporary air quality impacts associated with dust generated from exhaust emissions discharged by construction equipment.

The proposed project is not anticipated to create significant, long-term environmental effects.

# ***Chapter VI***

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## ***Alternatives Analysis***

## **VI. ALTERNATIVES ANALYSIS**

### **A. NO ACTION ALTERNATIVE**

The no action alternative represents a continuation of the existing condition. Although the right of way width along this general area of Honoapiilani Highway is 40 feet, it contains two (2) 10 foot wide travel lanes and, in some areas, narrow shoulders. The existing curves at Alaelae Point and Honolulu Bay are quite extreme. Existing culverts are inadequate at the Makuleia Bay segment. Ponding also occurs in the segment of highway east of Honolulu Bay.

The no action alternative is not deemed acceptable from an operational standpoint.

### **B. WIDER LANEAGE AND SHOULDER ALTERNATIVE**

An alternative involved improvements to Honoapiilani Highway, from the end of the new section to Honolulu Bay. Twelve (12) feet wide lanes, six (6) feet wide shoulders and guardrails were assessed as part of this alternative. It is noted that this alternative was part of the comments on the original subdivision approved for the Plantation Estates.

This portion of Honoapiilani Highway represents the beginning of the non-standard segment of the roadway around the north coast of the island to the town of Waihee. Ten (10) feet wide travel lanes currently exist along this area of Honoapiilani Highway. The portion of the highway at Honolulu Bay which adjoins the project also has ten (10) feet wide travel lanes.

The access for the Plantation Estates Subdivision and Plantation Golf Course links with the newer section of Honoapiilani Highway. There are three (3) lots, however, which have a single driveway access onto the older section of Honoapiilani Highway. It is noted that most of the

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subdivision and golf course traffic already utilize the newer sections of Honoapiilani Highway and would not require improvements to the subject older sections of Honoapiilani Highway. Refer to Figure 8.

Although the entire segment of Honoapiilani Highway from Honolulu to Waihee is paved, some portions are wide enough to allow only one (1) vehicle to pass at one time. The coastal segment passes the settlements of Honokohau and Kahakuloa, but the region is sparsely populated. The lands are either in the State Agricultural or Conservation District. Thus, lands to the north of the project area extending to Waihee are largely undeveloped and provide limited access.

Moreover, the project area is adjacent to the Honolulu Bay and Makuleia Bay Marine Life Conservation District. Additional construction to widen the road in the area could result in increased risk of impact to the nearshore environment.

Based on the conservation and open space orientation of the area, it is believed that implementation of this alternative is not appropriate.

**C. PROPOSED ACTION**

The proposed action upgrades four (4) segments of the highway to enhance operating and safety characteristics. Ten (10) feet wide travel lanes match existing lane widths in this vicinity. Curve radii have been made less severe. Four (4) feet wide shoulders are being included on both sides of the highway. Guardrails are also included to provide additional safety measures for motorists.

Drainage parameters are also being upgraded and improved. This enhances public health and safety.

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The proposed action represents a balance between improving highway operational characteristics and preservation of the agricultural/conservation values of the area. It is not anticipated to create any adverse environmental effects while providing infrastructure benefits through transportation improvements.

# ***Chapter VII***

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***Irreversible and Irretrievable  
Commitments of Resources***

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## **VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The construction of the proposed improvements would involve the commitment of labor, funding and material resources for the proposed action.

There are no significant irreversible and irretrievable commitments of resources which have been identified in connection with the proposed action.

# ***Chapter VIII***

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## ***Findings and Conclusions***

## **VIII. FINDINGS AND CONCLUSIONS**

The "Significance Criteria", Section 12 of the Administrative Rules, Title 11, Chapter 200, "Environmental Impact Statement Rules", were reviewed and analyzed to determine whether the proposed project will have significant impacts to the environment. The following analysis is provided:

1. **No Irrevocable Commitment to Loss or Destruction of any Natural or Cultural Resource Would Occur as a Result of the Proposed Project**

The project will not result in any adverse environmental impacts. There are no known rare, endangered or threatened species of flora, fauna or avifauna located within the project site.

There are no known archaeological sites which would be impacted by the project. However, archaeological monitoring will be conducted during the construction phase. Should any cultural materials be uncovered during construction, work will stop in the immediate vicinity and the County of Maui Planning Department and State Historic Preservation Division will be consulted to establish an appropriate mitigation strategy.

2. **The Proposed Action Would Not Curtail the Range of Beneficial Uses of the Environment**

The proposed project and the commitment of land resources would not curtail the range of beneficial uses of the environment.

3. **The Proposed Action Does Not Conflict with the State's Long-term Environmental Policies or Goals or Guidelines as Expressed in Chapter 344, Hawaii Revised Statutes**

The State Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes (HRS) and were reviewed in connection with the proposed project. The proposed action is in consonance with the State's long-term environmental policies and goals of Chapter 344, HRS.

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4. **The Economic or Social Welfare of the Community or State Would Not Be Substantially Affected**

The proposed project provides operational and safety improvements along four (4) segments of Honoapiilani Highway. There are no adverse economic or social welfare impacts associated with the proposed action.

5. **The Proposed Action Does Not Affect Public Health**

While there are no public health issues associated with the proposed action, general community welfare is deemed to be enhanced with the proposed roadway and drainage improvements.

6. **No Substantial Secondary Impacts, Such as Population Changes or Effects on Public Facilities are Anticipated**

No significant secondary impacts are anticipated from the project.

Population parameters are not expected to be affected by the project. The project improves the operational and safety aspects of segments of Honoapiilani Highway. However, there is no increase in laneage or capacity. There is no connection to the County's water or sewer system. Culvert improvements upgrade the drainage system in the area. The project should improve accessibility for police, fire and medical services. Recreational facilities such as the Honolua Bay and Makuleia Bay should also benefit from increased accessibility. The project should have no effect on educational parameters.

7. **No Substantial Degradation of Environmental Quality is Anticipated**

During the construction phase of the project, there will be short-term air quality and noise impacts. However, in the long term, there should be no effect upon air quality and noise parameters. The project should not have

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a significant effect upon the open space and scenic character of the area.

No substantial degradation of environmental quality resulting from the project is anticipated.

8. **The Proposed Action Does Not Involve a Commitment to Larger Actions, Nor Would Cumulative Impacts Result in Considerable Effects on the Environment**

The proposed project does not involve a commitment to larger actions.

9. **No Rare, Threatened to Endangered Species or Their Habitats Would Be Adversely Affected by the Proposed Action**

There are no rare, threatened or endangered plant species within the project corridor. None of the fauna or avifauna typical of the region are considered rare, threatened or endangered for the island of Maui.

10. **Air Quality, Water Quality or Ambient Noise Levels Would Not Be Detrimentially Affected by the Proposed Project**

Construction activities will result in short-term air quality and noise impacts primarily in areas involving excavation. Regular watering and sprinkling will be implemented, as warranted, to minimize dust. Construction also will be limited to daylight hours, to the greatest extent practicable.

In the long term, the project is not anticipated to have a significant impact on air quality or noise parameters.

No work is being done in any designated streams. During construction, applicable erosion control measures will be followed. The project should have no adverse effect upon stream or water quality.

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11. **The Proposed Project Would Not Affect Environmentally Sensitive Areas, Such as Flood Plains, Tsunami Zones, Erosion-Prone Areas, Geologically Hazardous Lands, Estuaries, Fresh Waters or Coastal Waters**

The project should not affect environmentally sensitive areas. The project site is not located in areas prone to flooding or tsunami inundation. Appropriate erosion control measures will be implemented. Thus, the project should not significantly affect soils, fresh waters or coastal waters adjacent to the project area. There are no geologically hazardous lands or estuaries affected by the project.

12. **The Proposed Action Would Not Substantially Affect Scenic Vistas and Viewplanes Identified in County or State Plans or Studies**

The proposed action will not affect scenic vistas and viewplanes.

13. **The Proposed Action Would Not Require Substantial Energy Consumption**

The project will not adversely affect energy consumption patterns.

Based on the foregoing findings, it is concluded that the proposed action will not result in any significant impacts.

# ***Chapter IX***

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***Agencies Contacted During  
the Preparation of the  
Environmental Assessment***

## **IX. AGENCIES CONTACTED DURING THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT**

The following agencies were contacted during the preparation of the Draft Environmental Assessment.

1. Neal Fujiwara, Soil Conservationist  
Natural Resources Conservation Service  
U.S. Department of Agriculture  
210 Imi Kala Street, Suite 209  
Wailuku, Hawaii 96793-2100
2. Lolly Silva  
Department of the Army  
U.S. Army Engineer District, Hnl.  
Attn: Operations Division  
Bldg. T-1, Room 105  
Fort Shafter, Hawaii 96858-5440
3. Robert P. Smith  
Pacific Islands Manager  
U. S. Fish and Wildlife Service  
P.O. Box 50167  
Honolulu, Hawaii 96850
4. David Blane, Director  
State of Hawaii  
Office of Planning  
Department of Business, Economic,  
Development and Tourism  
P.O. Box 2359  
Honolulu, Hawaii 96804
5. Herbert Matsubayashi  
District Environmental Health  
Program Chief  
State of Hawaii  
Department of Health  
54 High Street  
Wailuku, Hawaii 96793
6. Timothy Johns, Director  
State of Hawaii  
Department of Land and Natural  
Resources  
P. O. Box 621  
Honolulu, Hawaii 96809
7. Don Hibbard  
State of Hawaii  
Department of Land and Natural  
Resources  
State Historic Preservation  
Division  
Kakuhihewa Building, Room 555  
601 Kamokila Blvd.  
Kapolei, Hawaii 96707
8. Kazu Hayashida, Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813
9. Clayton Ishikawa, Chief  
County of Maui  
Department of Fire Control  
200 Dairy Road  
Kahului, Hawaii 96732
10. John Min, Director  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793
11. Tom Phillips, Chief  
County of Maui  
Police Department  
55 Mahalani Street  
Wailuku, Hawaii 96793
12. Charles Jencks, Director  
County of Maui  
Department of Public Works  
and Waste Management  
200 South High Street  
Wailuku, Hawaii 96793

- 
13. **David Craddick, Director**  
County of Maui  
**Department of Water Supply**  
200 South High Street  
Wailuku, Hawaii 96793
  14. **Maui Electric Company, Ltd.**  
P. O. Box 398  
Kahului, Hawaii 96732
  15. **West Maui Taxpayers Association**  
P.O. Box 10358  
Lahaina, Hawaii 96761

# ***Chapter X***

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***Letters Received During  
the Draft Environmental  
Assessment Public Comment  
Period and Responses to  
Substantive Comments***

JUN 25 1979



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

REPLY TO  
ATTENTION OF

June 24, 1999

Regulatory Branch

Mr. Milton Arakawa  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

This letter responds to your request for a review of the Honoapiilani Highway Improvements from Alailae Point to Honolua Bay project summary. The information provided was not sufficiently detailed to determine whether a Department of the Army permit will be required, but it is likely that one will be required for construction of the culverts.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-9258, extension 13, and reference File No. 990000402.

Sincerely,

*William B. Lennan*  
for George P. Young, P.E.  
Chief, Regulatory Branch

MUNEKIYO, ARAKAWA & HIRAGA, INC.

October 7, 1999

George P. Young, P.E.  
Chief, Regulatory Branch  
Department of the Army  
U.S. Army Engineer District, Honolulu  
Attention: William Lennan  
Fort Shafer, Hawaii 96858-5440

SUBJECT: Honoapiilani Highway Improvements, from  
Alaelae Point to Honolulu Bay

Dear Mr. Young:

Pursuant to your letter dated June 24, 1999 (Reference File No. 990000402), enclosed are detailed plans for the construction of the proposed project. We would appreciate your determination as to whether a Department of the Army permit would be required.

If you have any questions or need additional information, please feel free to call me.

Sincerely,



Milton Arakawa, Project Manager

MA:to  
Enclosures  
[kapaiaue/honoapiilani/dptarmy.tz](mailto:kapaiaue/honoapiilani/dptarmy.tz)

NOV 03 1999



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

REPLY TO  
ATTENTION OF

November 1, 1999

Regulatory Branch

Mr. Milton Arakawa  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

This letter responds to your request for a jurisdictional determination for the Honoapiilani Highway Improvements from Alailae Point to Honolua Bay, dated October 7, 1999. The additional information you provided is helpful, but not enough to absolutely determine if a Department of the Army (DA) permit will be required.

Please provide additional information concerning the drainage way that will receive the new culvert. Is it a perennial stream, an intermittent stream, an ephemeral stream or a dry gulch?

If you have any questions concerning this matter, please contact William Lennan of my staff at 438-6986 and reference File No. 990000402.

Sincerely,

A handwritten signature in cursive script, reading "George P. Young".

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

November 19, 1999

George P. Young, P.E.  
Chief, Regulatory Branch  
Department of the Army  
**Attention: William Lennan**  
U.S. Army Engineer District, Honolulu  
Fort Shafter, Hawaii 96858-5440

**SUBJECT: Improvements to Honoapiilani Highway, from Alaelae Point to  
Honolua Bay (File No. 990000402)**

Dear Mr. Young:

We have reviewed your transmittal of November 1, 1999 pertaining to a request for additional information on the drainageway receiving the proposed culvert. An 81 inch by 59 inch corrugated aluminum pipe culvert is proposed at Honoapiilani Highway as part of the subject project.

The drainageway is part of an approximately 135 acre drainage area. See Figure 1. The drainage area originates in existing pineapple fields. The drainageway extends through a segment of undeveloped lands before it traverses the Plantation Estates residential subdivision and the Plantation Golf Course. The drainageway then traverses Honoapiilani Highway where there are two (2) existing 24-inch culverts. From there, the drainageway leads to Mokuleia Bay. In terms of length, the drainageway extends approximately 9,000 feet.

The drainageway does not flow unless there is rainfall in the vicinity. There is no other source of water for the drainageway. We believe that the drainageway receiving the proposed culvert should be considered a dry gulch.

George P. Young, P.E.  
April 6, 2000  
Page 2

If you have any questions, please feel free to call me.

Sincerely,

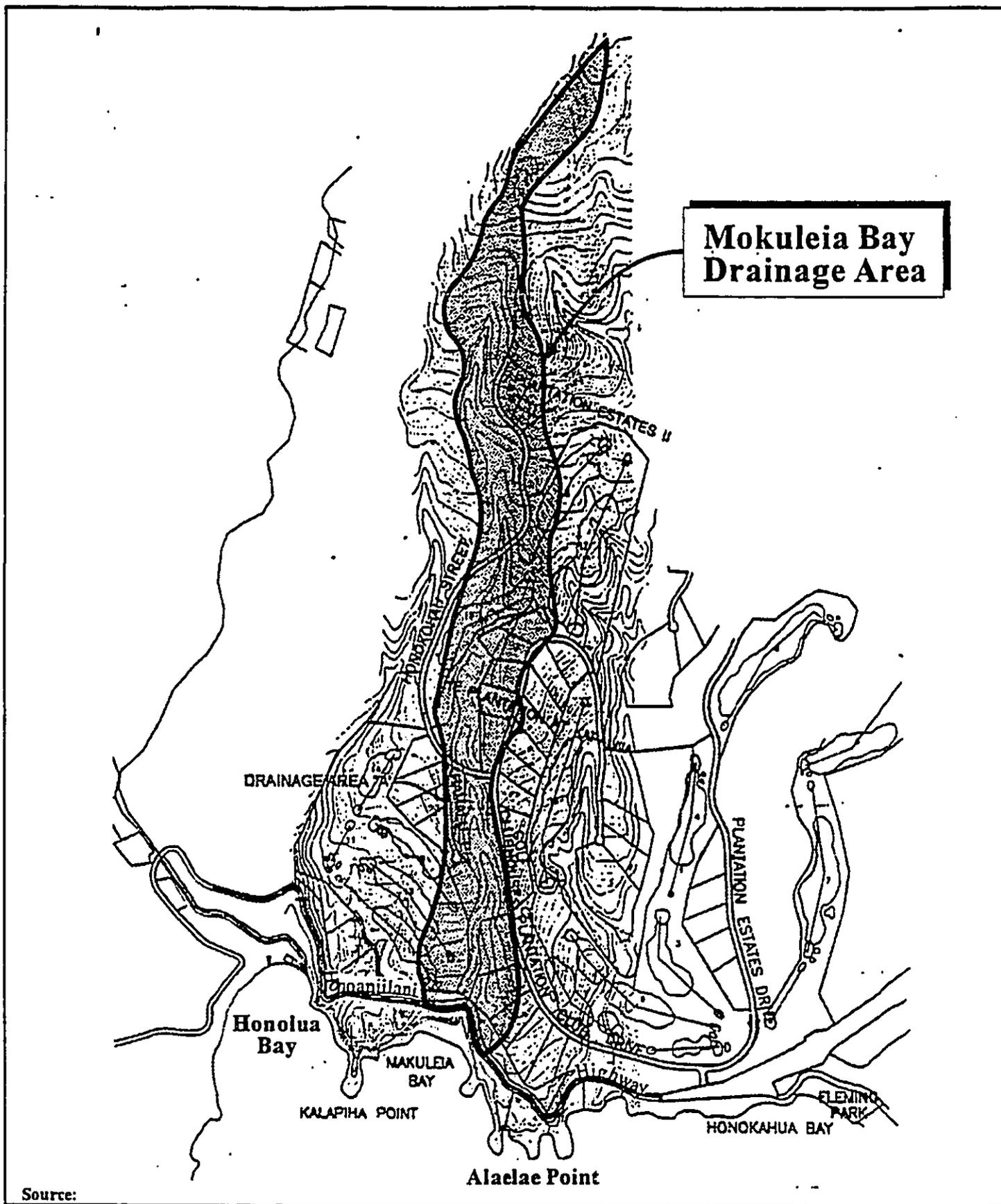


Milton Arakawa, A.I.C.P.  
Project Manager

MA:to

cc: Karen Seddon, Kapalua Land Company, Ltd. (via mail)

kapalua/np/llan/deptarmy.br



Source:

Figure 1 Improvements to Honoapiilani Highway NOT TO SCALE  
 from Alaelae Point to Honolua Bay  
 Mokuleia Bay Drainage Area



Prepared for: Kapalua Land Company, Ltd.

MUNEKIYO, ARAKAWA & HIRAGA, INC.

DEC 09 1999



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

REPLY TO  
ATTENTION OF

November 29, 1999

Regulatory Branch

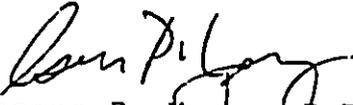
Mr. Milton Arakawa  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

This letter responds to your request for additional review and jurisdictional determination for the Honoapiilani Highway Improvements from Alailae Point to Honolulu Bay, dated November 19, 1999. Based on the additional information you provided I have determined that a Department of the Army (DA) permit will not be required for this portion of the road improvements.

If you have any questions concerning this matter, please contact William Lennan of my staff at 438-6986 and reference File No. 990000402.

Sincerely,

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

BENJAMIN J. CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
MAUI DISTRICT HEALTH OFFICE  
54 HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

JUN 28 1999

BRUCE S. ANDERSON, Ph.D.  
Director of Health

ALFRED M. ARENSDORF, M.D.  
DISTRICT HEALTH OFFICER

June 25, 1999

Milton Arakawa  
Project Manager  
Munekiyo, Arakawa &  
Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawai'i 96793

Dear Mr. Arakawa:

Subject: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolulu Bay  
TMK: (2) 4-2-5: por. 41 and por. 42

Thank you for the opportunity to provide early input on the proposed project. We have no comments to offer at this time.

Should you have any questions, please call me at 984-8230.

Sincerely,

A handwritten signature in black ink, appearing to read "H. Matsubayashi".

HERBERT S. MATSUBAYASHI  
District Environmental Health Program Chief

JUL 01 1999



June 29, 1999

Mr. Milton Arakawa  
Project Manager  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Mr. Arakawa:

Subject: Environmental Assessment for Honoapiilani Highway Improvements, from Alaelae Point to Honolua

Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

A handwritten signature in cursive script that reads "Edward L. Reinhardt".

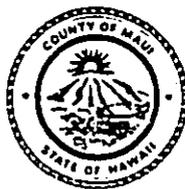
Edward L. Reinhardt  
Manager, Engineering

JUL 15 1999

JAMES "KIMO" APANA  
Mayor

JOHN E. MIN  
Director

CLAYTON I. YOSHIDA  
Deputy Director



COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

July 12, 1999

Mr. Milton Arakawa  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

RE: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolulu Bay

The Maui Planning Department has reviewed the summary for the proposed project and offers the following comment:

1. The draft environmental assessment should contain maps and written descriptions of the proposed improvements in relation to the County Special Management Area (SMA) and the existing highway right-of-way.

We will reserve further comments until we have had the opportunity to review a completed document.

Should you have any questions, please contact Robyn Loudermilk, Staff Planner, of this office at 270-7735.

Very truly yours,

A handwritten signature in black ink, appearing to read "John E. Min", is written over a horizontal line.

JOHN E. MIN  
Planning Director

JEM:RLL:cmb

c: Clayton Yoshida, AICP, Deputy Director of Planning  
Robyn L. Loudermilk, Staff Planner  
General File

S:\ALL\ROBYN\DEA1KAPA.WPD

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
PLANNING DIVISION (808) 243-7735 ZONING DIVISION (808) 243-7253 FACSIMILE (808) 243-7534

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 12, 2000

John E. Min, Director  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

SUBJECT: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolua Bay

Dear Mr. Min:

Thank you for your letter of July 12, 1999 providing early consultation comments on the project.

Pursuant to your comments, the Draft Environmental Assessment will contain maps and written descriptions of the proposed improvements in relation to the County Special Management Area (SMA) and the existing right-of-way.

We appreciate your interest in the project. If you have any questions, please feel free to call me.

Sincerely,



Milton Arakawa, Project Manager

MA:to  
kapelua/hpilan/mintr.001



JAMES "KIMO" APANA  
MAYOR

OUR REFERENCE  
at  
YOUR REFERENCE

**POLICE DEPARTMENT**  
COUNTY OF MAUI

55 MAHALANI STREET  
WAILUKU, HAWAII 96793  
(808) 244-6400  
FAX (808) 244-6411



THOMAS M. PHILLIPS  
CHIEF OF POLICE

CHARLES H.P. HALL  
DEPUTY CHIEF OF POLICE

July 16, 1999

Mr. Milton Arakawa  
Project Manager  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

**SUBJECT: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolua Bay**

Thank you for your letter of June 18, 1999 requesting input regarding the above subject.

We have reviewed the proposed summary and have enclosed our comments and recommendations. Thank you for giving us the opportunity to comment on the proposed project.

Very truly yours,

  
Assistant Chief Robert Tam Ho  
for: Thomas M. Phillips  
Chief of Police

Enclosure

xc: John E. Min, Planning Department

: THOMAS PHILLIPS, CHIEF OF POLICE  
VIA : CHANNELS  
FROM : AARON Q. KAMAUNU, P.O.III, DISTRICT IV - LAHAINA  
SUBJECT : IMPROVEMENTS OF HONOAPIILANI HIGHWAY (30) IN THE  
AREA OF ALAELAE POINT TO HONOLUA BAY

AC [Signature] 11/5/55

Sir, this officer in the past had express my concerns about this area. I have submitted "SAFETY CONDITION REPORTS" concerning this strip of highway. The main reason I submitted such reports in the past was due to the lack of a guardrail(s) in these areas (especially the makai side of the highway above SLAUGHTER HOUSE).

The another concern is the narrowness of the highway, and the sharp "hairpin" turns in these areas. Due to the high frequency of visitors that frequent the beaches in the area of Honolua Bay and Slaughter House. Many of the visitors park in areas that make it extremely difficult for large trucks (Pineapple vehicles) that use the area to transport equipment or harvested pineapples.

There are NO PARKING SIGNS posted along certain portions of the highway. However, many of the visitors pay no attention to these clearly marked and regulated signs.

The other problem I have noted in these areas are the amount of car break-ins that occur very frequently during the high point of the visitor season. Though police, car rental agencies, hotels and some private agencies (sports rental shops) take a proactive approach in alerting our visitors not to leave any valuables in the vehicle. They still tend to do so, which results in upset and angered people.

Based on my personal observations these are the recommendations that I would like to suggest:

1. More guardrails along this strip of highway.
2. The widening of sharp turns and narrow pieces of roadway,
3. The posting of more NO PARKING signs and designating these areas as TOW AWAY ZONES.
4. State Highway, private agencies and police (trained in CPTED) joining together and design an area(s) for parking for those that frequent this area. Keeping in mind that car break-ins occur frequently, along with traffic being very heavy in these areas.

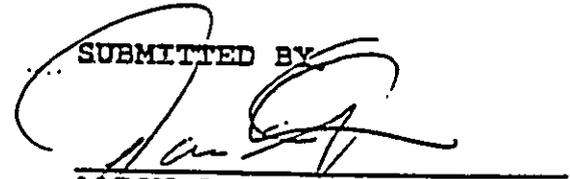
This To/From is being submitted for your review.

NOTED BY,

  
7/12/99

CONCURRED:  
A/CAPT. B. [unclear] 2114  
07/13/99

SUBMITTED BY

  
BARON Q. KAMAUNU  
E8121/P.O.III  
07/12/99 AT 0800 HOURS

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 12, 2000

Thomas M. Phillips  
Chief of Police  
Police Department  
County of Maui  
55 Mahalani Street  
Wailuku, Hawaii 96793

**SUBJECT:** Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolua Bay

Dear Chief Phillips:

Thank you for your letter of July 16, 1999 providing early consultation comments on the project.

To address your concerns, new guardrails will be constructed along all four (4) segments of Honoapiilani Highway which comprise the project. Curves in the roadway near Alaelae Point and Honolua Bay will be made less severe in order to improve the operational and safety characteristics of the roadway.

Your comments regarding an increase in the number of "no parking" signs, designation of tow away zones, and implementation of a new parking area will be referred to the State Department of Transportation.

We appreciate your interest in the project. If you have any questions, please feel free to call me.

Very truly yours,



Milton Arakawa, Project Manager

MA:to

kapelaue/hpiliari/mpditr001

JAMES "KIMO" APANA  
Mayor

CHARLES JENCKS  
Director

DAVID C. GOODE  
Deputy Director

Telephone: (808) 270-7845  
Fax: (808) 270-7955



COUNTY OF MAUI  
**DEPARTMENT OF PUBLIC WORKS  
AND WASTE MANAGEMENT**  
200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

JUL 2 1999  
RALPH NAGAMINE, L.S., P.E.  
Land Use and Codes Administration

RON R. RISKA, P.E.  
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

ANDREW M. HIROSE  
Solid Waste Division

July 16, 1999

Mr. Milton Arakawa, Project Manager  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

**SUBJECT: ENVIRONMENTAL ASSESSMENT  
HONOAPIILANI HIGHWAY IMPROVEMENTS  
FROM ALAELAE POINT TO HONOLUA BAY**

We reviewed the subject application and have the following comment.

1. A detailed final drainage report and an erosion control Best Management Practices (BMP) plan shall be submitted with the construction plans for review and approval prior to the issuance of building or grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for the disposal of runoff waters. It must comply with the provisions of the "Rules for the Design of Storm Drainage Facilities in the County of Maui" and must provide verification that the grading and runoff water generated by the project will not have an adverse effect on adjacent and downstream properties. The BMP plan shall show the location and details of structural and non-structural measures to control erosion and sedimentation.

If you have any questions, please call David Goode at 270-7845.

Sincerely,

  
CHARLES JENCKS  
Director of Public Works  
and Waste Management

DG:msc/mt  
S:\LUCA\GZM\honoahwy.wpd

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 12, 2000

Charles Jencks, Director  
Department of Public Works  
and Waste Management  
200 South High Street  
Wailuku, Hawaii 96793

SUBJECT: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolulu Bay

Dear Mr. Jencks:

Thank you for your letter of July 16, 1999 providing early consultation comments on the project.

To address your concerns, the applicant intends to submit a detailed final drainage and erosion control Best Management Practices plan to your department for review and approval during the building or grading permit process.

We appreciate your interest in the project. If you have any questions, please feel free to call me.

Sincerely,



Milton Arakawa, Project Manager

MA:to

kapela/hp/lan/dpwwmtr.001

BENJAMIN J. CAYETANO  
GOVERNOR



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

JUL 2 2 1999  
KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
BRIAN K. MINAAI  
GLENN M. OKIMOTO

IN REPLY REFER TO:  
HWY-PS  
2.4654

JUL 21 1999

Mr. Milton Arakawa, Project Manager  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Mr. Arakawa:

Subject: Environmental Assessment (EA) for Honoapiilani Highway Improvements,  
from Alaelae Point to Honolua Bay, Kapalua, Maui, Hawaii  
TMK: 4-2-5: por. 41, por. 42

Thank you for the opportunity to review the general overview of the EA for Honoapiilani Highway Improvements, submitted pursuant to early consultation requirements.

We have the following comments:

1. The EA should explain why Kapalua Land Company is proposing the highway improvements, i.e., identify the conditions imposed on a specific development. Please confirm our understanding that the improvements were (1) required by the County of Maui in 1988 for a residential subdivision (see attached letter 4.576 dated December 13, 1988), and (2) based on comments from the Highways Division District Engineer, Maui District (see attached letter dated May 12, 1988).
2. The EA should identify the development impacts that will result from the implementation of the improvements, i.e., part of the planned developments cannot proceed without the improvements.
3. The improvements should be placed in the context of Kapalua Land Company's development master plan, implementation phasing schedule for required improvements (mitigation measures), and a corresponding traffic impact analysis report. A map of all the Kapalua Land Company's developments and their phases would be helpful.

Mr. Milton Arakawa  
Page 2

HWY-PS 2.4654

JUL 21 1999

4. Construction plans for the subject improvements must be submitted to the State Highways Maui District Office for review and approval. Kapalua Land Company must still satisfy any outstanding requirements in the 1988 letter above to the satisfaction of the Highways Division.

If you have any questions, you may contact Antonie Wurster, Planner, at the Planning Branch, 587-1842, or Ronald F. Tsuzuki, Head Planning Engineer, 587-1830.

Very truly yours,



KAZU HAYASHIDA  
Director of Transportation

Enclosures

COPY



HANNIBAL TAVARES  
Mayor  
ALVIN K. FUKUNAGA  
Director  
RIMIAI HASHIRO, P.E.  
Deputy Director  
GEORGE KAYA  
Highways Division  
HED ASARI, P.E.  
Engineering Division  
EADIE MILLER, P.E.  
Waste Management Division  
AARON SHIMMOTO, P.E.  
Land Use and Codes Administration

COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS

200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

IN REPLY, REFER TO:  
#4.576

December 13, 1988

Norman Saito Engineering Consultants, Inc.  
Wailuku Townhouse, Suite 203  
2158 Main Street  
Wailuku, HI 96793

Dear Sirs,

Re: The Plantation Club at Kapalua, Phase I  
TMK 4-2-01:1

Preliminary approval is hereby granted to the above plat. Final approval shall be contingent upon compliance with the following conditions:

- o/s  
1. Requirements of the Department of Water Supply:  
Enter into a Private Water System Agreement
2. Requirements of the State Highways Division:
- a. Include access symbol legend on map.
  - b. Any future development to lots 41 to 54 will be subject to State Highways review and approval to ensure that all access, drainage and potential traffic impact concerns to Honoapiilani Highway are addressed.
  - c. Provide a traffic impact study to verify whether any left turn lanes will be warranted at the access points.
  - d. Construction plans for the access improvements must be submitted to our office for our review. Include sight distance study in plans.
  - e. Provide drainage report to ensure drainage adequacy.
  - f. The section of Honoapiilani Highway fronting the subdivision is generally unimproved. Widening and right-of way dedication need to be addressed. See attached letter HWY-M 2.757-88 dated May 12, 1988.

OK  
7/22/89  
v/b  
11/22/89

5. Requirements from Maui Electric Company:

- a. Requires line extension (overhead and/or underground) within existing County or State road right-of-way.
- b. Requires line extension (overhead and/or underground) within private road or property.
- c. Requires easement(s) from owner/subdivider/developer within subdivision for new or existing MECCO facilities.

OK 4/3/90

6. Submit an agreement from the owner to provide all deferred roadway, drainage and sewer improvements upon actual development or future resubdivision of the large lots. The agreement should include the provisions of Section 18.16.270 - Large Lot Subdivisions.

OK 4/3/90

6. Submit a Farm Dwelling Agreement executed by the owners and extended to their heirs and executors or assigns.

OK

6. Improve the proposed subdivision road to the provisions of the subdivision ordinance for roads within the agricultural district.

OK

7. Design and construct the drainage facilities to the requirements of the Department of Public Works.

OK  
12/20/89  
CUI: 0117637

8. Payment of \$25,667.67 for parks and playground assessment. Make a check payable to the Director of Finance, County of Maui, and remit payment to the Division of Land Use and Codes Administration.

9. Requirements of the State Department of Health:

- a. The quality and quantity of the potable water from the private water system shall meet all applicable rules and regulations of the Safe Drinking Water Act.
- b. Cesspools may not be acceptable for this subdivision, therefore, a private sewage treatment plant is recommended for wastewater disposal.
- c. Since a golf course is being planned, please determine the impact of pesticides and fertilizer chemicals on groundwater supplies.



EDWARD Y. WATA  
DIRECTOR

DEPUTY DIRECTOR  
JAMES E. UCHIMA  
RONALD M. HIRANO  
JANET KOCHI

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
HAWAII DISTRICT  
100 PALAPALA DRIVE  
KAPALUA, HAWAII 96732

IN REPLY REFER TO  
HWY-M 2.757-88

May 12, 1988

Mr. Thomas P. Papandrew, FASLA  
Director of Planning  
Belt Collins and Associates,  
680 Ala Moana Boulevard, Suite 200  
Honolulu, Hawaii 96813

Dear Mr. Papandrew:

SUBJECT: THE PLANTATION CLUB AT KAPALUA  
(3RD GOLF COURSE)

Pursuant to our meeting of May 4, 1988, and our further review of the subject proposed development, we provide the following comments:

1. Complete a traffic impact study to determine the scope of access improvements necessary to accommodate the anticipated traffic generation.
2. The two new access points should be selected where the minimum available sight distances will comply with our Hawaii Statewide Uniform Design Manual.
3. The drainage scheme for the entire subdivision must not have an adverse impact on the existing Honoapiilani Highway. Existing culverts at drainage ways will have to be checked for adequate capacity.
4. The proposed subdivision road connection to Honoapiilani Highway at Makuleia Bay is located at a high roadway fill over a possible existing 18" concrete culvert. Depending upon the calculated flow of the gulch you may have to consider realigning the access connection.
5. Improve the existing Honoapiilani Highway from the end of the new section to just beyond the "tight" curve at Honolua Bay. Roadway typical should include 12' lanes, 6' paved shoulders, and guardrails where warranted by AASHTO Standards.

0-1264

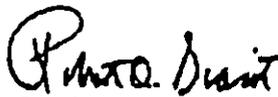
Thomas P. Papandrew, FASLA  
May 12, 1988  
Page 2

HWY-M 2.757-88

6. Longitudinal drainage along the old section of Honoapiilani Highway fronting the development has to be accommodated to prevent erosion problems from occurring.
7. Dedicate R/W to accommodate widening improvements.
8. Plan frontages of subdivision to discourage illegal access from developing along large lot frontages.
9. Concur with rounding out the existing curve near proposed driveway connection to lots 1.1, 1.6, and 1.8.
10. Signs, pavement markings, delineators, etc. shall comply with State Highway Standards.

Once the preliminary construction plans are developed for the highway and access improvements, submit three sets for our review and approval. If there are any additional questions regarding the above, feel free to call Charlene Shibuya of my office at 877-5061.

Very truly yours,

  
ROBERT O. SIAKUI  
District Engineer, Maui

CSS:jt

May 12, 2000

Kazu Hayashida, Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

SUBJECT: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolulu Bay

Dear Mr. Hayashida:

Thank you for your letter of July 21, 1999 providing early consultation comments on the project.

To address your concerns, we would like to confirm that the proposed project is intended to fulfill Condition 2.f. noted in the preliminary approval of the Plantation Club Subdivision dated December 13, 1988. The Draft Environmental Assessment will identify the impacts resulting from the implementation of the improvements.

As required by the County of Maui for Special Management Area Use Permits for the Kapalua Site 29 and Village Clubhouse projects, a traffic impact analysis report reflecting Kapalua Land Company, Ltd.'s master plan will be initiated by Kapalua Land Company, Ltd. The report is required to be submitted to the Department of Transportation and the County of Maui Department of Planning with the district boundary amendment application for Lahaina Project District No. 2.

Construction plans for the proposed project have been reviewed and approved by the Maui District Office.

Kazu Hayashida, Director  
May 12, 2000  
Page 2

We appreciate your interest in the project. If you have any questions, please feel free to call me.

Sincerely,



Milton Arakawa, Project Manager

MA:to

kspelue/hpilan/dottr.002

JUL 29 1989

KL



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

P.O. BOX 621  
HONOLULU, HAWAII 96809

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

JUL 28 1989

Ref:PS:EH

Mr. Milton Arakawa,  
Project Manager  
Munekiyo Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Maui, HI 96793

Dear Mr. Arakawa:

Subject: Environmental Assessment Preparation Notice  
for Honoapiilani Highway Improvements, from  
Alaelae Point to Honolulu Bay

We have reviewed the subject project description and offer the following comments for your consideration.

Engineering Branch:

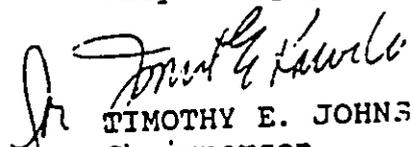
The proposed culvert shall be designed in accordance with the Maui County Storm Drainage Standards.

The proposed project site, according to FEMA Community Panel Map Number 150003 0139B, is located in Zone C. This is an area determined to have minimal flooding.

Thank you for the opportunity to comment on the proposed project.

Should you have any questions or require further assistance, please contact staff planner Ed Henry at 587-0380.

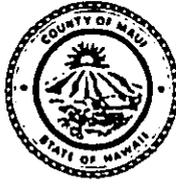
Very truly yours,

  
TIMOTHY E. JOHNS  
Chairperson

KL

\* -  
c.c. Engineering Branch  
MDLO

JAMES "KIMO" APANA  
MAYOR



KI

AUG 16 1999

CLAYTON T ISHIKAWA  
CHIEF  
FRANK E FERNANDEZ, JR  
DEPUTY CHIEF

**COUNTY OF MAUI**  
DEPARTMENT OF FIRE CONTROL

200 DAIRY ROAD  
KAHULUI, MAUI, HAWAII 96732  
(808) 243-7561  
FAX (808) 243-7919

August 11, 1999

Mr. Milton Arakawa, Project Manager  
Munekiyo, Arakawa & Hiraga, Inc.  
305 High Street  
Wailuku, HI 96793

RE: Honoapiilani Highway Improvements, from Alaelae Point to Honolua Bay

Dear Mr. Arakawa,

Thank you for the opportunity to comment on the highway improvements in Kapalua.

The Department of Fire Control has the following requirements for this project:

1. That the two fire stations in the West Maui area, Lahaina, phone number 661-4065 and Napili, phone number 669-4300; be notified via landline of any and all road closures and detours at least 48 hours in advance.
2. That the Fire Prevention Bureau be notified in writing concerning any and all road closures and detours involving this project.

If you have any questions, submit them in writing to the Fire Prevention Bureau, 21 Kinipopo Street, Wailuku, HI 96793.

Sincerely,

A handwritten signature in black ink, appearing to read "Leonard F Niemczyk".

LEONARD F NIEMCZYK

Captain, Fire Prevention Bureau

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



AUG 27 1999

TIMOTHY E. JOHNS, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES  
JANET E. KAWELO

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION  
Kakuhihewa Building, Room 555  
501 Kamohala Boulevard  
Kapoho, Hawaii 96737

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND RESOURCES  
ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND  
STATE PARKS  
WATER RESOURCE MANAGEMENT

August 17, 1999

Mr. Milton Arakawa  
Munekiyo, Arakawa and Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

LOG NO: 23977 ✓  
DOC NO: 9908CD12

Dear Mr. Arakawa:

**SUBJECT: Historic Preservation Comments Regarding the Proposed Roadway Improvements for Honoapi'ilani Highway from Alaelae Point to Honolua Bay Honokahua Ahupua'a, Lahaina District, Island of Maui TMK: 4-2-05:**

Thank you for the opportunity to comment on the proposed Honoapi'ilani Highway improvements, from Alaelae Point to Honolua Bay. Our review is based on reports, maps and aerial photographs maintained at the State Historic Preservation Office; no field inspection was made of the subject property.

We understand from the submitted project summary that the proposed improvements are to occur over 4 highway segments in order to adjust curve radii and pavement widths, as well as upgrade drainage conditions. Most of the improvements are to occur within the existing State right-of-way and portions owned by the Kapalua Land Co. Approximately 235 lineal ft. of roadway will be improved around Alaelae Point and approximately 470 lineal feet of roadway and a new culvert will be constructed around Makuleia Bay. Approximately 440 lineal feet of roadway is affected near Honolua Bay and a new culvert will be installed approximately 430 lineal feet to the east of the Honolua Bay improvements.

A search of our records indicates that the proposed project area has not been subject to an archaeological inventory survey. The general area seems likely to have once been the location of pre-contact farming, perhaps with scattered houses. Most of the proposed project area appears extend through rocky soils and lands previously altered by modern agriculture. However, based on aerial photographs which were taken in the early 1970s, there are two areas that concern us (from STA 24+00 to 28+00 and from STA. 37+00 to 40+00) as these areas appear to be unaltered terrain containing drainages.

Therefore in order to determine the effect of this project on historic sites, we recommend that no action be taken on the subject permit application until an archaeological inventory survey is conducted from STA 24+00 to 28+00 and from STA. 37+00 to 40+00 to determine whether or not significant historic sites are present. A report of the finds should be submitted to the State Historic Preservation Division for review.

If significant historic sites are found during the survey, a mitigation plan may need to be developed, in consultation with this office, and executed.

Please call Cathleen Dagher at 692-8023 if you have any questions.

Aloha,

  
Don Hibbard, Administrator  
State Historic Preservation Division

CD:jen

JUL 06 2000

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

'00 JUN 19 P12:16

DEPT. OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
RECEIVED

June 14, 2000

Mr. John E. Min  
Planning Director  
Department of Planning  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Min:

Subject: Application for Special Management Area Use Permit (SM1 2000/0018), Improvements to Honoapiilani Highway, from Alaelae Point to Honolua Bay, Kapalua, Maui, TMK 4-2-05: por. 41 and por. 42

We have reviewed the subject application forwarded by your transmittal dated June 9, 2000, and confirm that the project site, as represented on Figure 6, is designated within the State Land Use Agricultural District.

We have no further comments to offer at this time. We appreciate the opportunity to comment on the subject application.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

A handwritten signature in cursive script, appearing to read "Esther Ueda".

ESTHER UEDA  
Executive Officer

EU:jt

JUL 06 2000



'00 JUN 20 P 1:09

DEPT. OF  
CIVIL  
RECEIVED

June 16, 2000

Mr. John E. Min  
Planning Director  
Maui Planning Department  
250 S. High Street  
Wailuku, HI 96793

Dear Mr. Min:

Subject: Honoapiilani Highway Improvements from Alaelae Point to Honolua Bay  
TMK: 4-2-005:por 041 and por 042  
I.D.: SM1 2000/0018

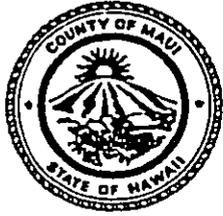
Thank you for allowing us to comment on the subject project.

In reviewing the information transmitted and our records, we have no objection to the subject project. If you have any questions or concerns, please call Dan Takahata at 871-2385.

Sincerely,

A handwritten signature in cursive script, appearing to read "Edward L. Reinhardt".

Edward L. Reinhardt  
Manager, Energy Delivery



DEPARTMENT OF  
**PARKS AND RECREATION**  
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE WAILUKU, HAWAII 96793

JUL 06 2000 JAMES "KIMO" APANA  
Mayor

FLOYD S. MIYAZONO  
Director

ELIZABETH D. MENOR  
Deputy Director

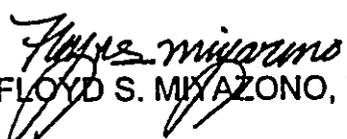
(808) 270-7230  
FAX (808) 270-7934

'00 JUN 21 P2:57

June 19, 2000

DEPT. OF  
COUNTY  
RECEIVED

MEMO TO: John E. Min, Planning Director

FROM:   
FLOYD S. MIYAZONO, Director

SUBJECT: SM1 2000/0018  
ROBERT MCNATT, KAPALUA LAND COMPANY, LTD.

We have reviewed the subject application and have no objections to the proposed project.

Thank you for the opportunity to review and comment. Please contact me or Mr. Patrick Matsui, Chief of Planning and Development, at extension 7387 if there are any questions.

c: Patrick Matsui, Chief-Planning and Development

JUL 6 0 2000



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

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

'00 JUN 22 12:55

June 20, 2000

LD-NAV  
Ref.: SM12000018.RCM2

Honorable John E. Min  
Planning Director  
County of Maui  
Planning Department  
250 S. High Street  
Wailuku, Hawaii 96793

Dear Mr. Min:

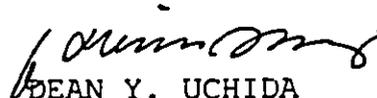
SUBJECT: Roadway and Drainage Improvements along four segments  
of Honoapiilani Highway, Kapalua, Maui, Hawaii  
I.D. SM1 2000/0018 - TMK: 4-2-005: 041 and 042

Thank you for the opportunity to review the subject  
application.

The Department of Land and Natural Resources had previously  
reviewed the proposed project and has no additional comments to  
offer. Attached herewith is a copy of our July 28, 1999 (Ref.:  
PSEH) response to Munekiyo Arakawa & Hiraga, Inc.) regarding the  
subject matter.

Should you have any questions, please feel free to contact  
Nicholas Vaccaro of the Land Division Support Services Branch at  
808-587-0438.

Very truly yours,

  
DEAN Y. UCHIDA  
Administrator

C: Maui District Land Office

JUL 06 2000  
KL



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P.O. BOX 621  
HONOLULU, HAWAII 96809

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

JUL 28 1999

Ref:PS:EH

Mr. Milton Arakawa,  
Project Manager  
Munekiyo Arakawa & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Maui, HI 96793

Dear Mr. Arakawa:

Subject: Environmental Assessment Preparation Notice  
for Honoapiilani Highway Improvements, from  
Alaelae Point to Honolulu Bay

We have reviewed the subject project description and offer the following comments for your consideration.

Engineering Branch:

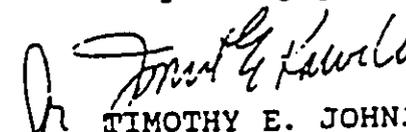
The proposed culvert shall be designed in accordance with the Maui County Storm Drainage Standards.

The proposed project site, according to FEMA Community Panel Map Number 150003 0139B, is located in Zone C. This is an area determined to have minimal flooding.

Thank you for the opportunity to comment on the proposed project.

Should you have any questions or require further assistance, please contact staff planner Ed Henry at 587-0380.

Very truly yours,

  
TIMOTHY E. JOHNS  
Chairperson

JUL 06 2000



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

REPLY TO  
ATTENTION OF

June 21, 2000

Civil Works Technical Branch

'00 JUN 23 PT2:38

DC  
C  
RECEIVED

Ms. Robyn Loudermilk, Staff Planner  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Maui, Hawaii 96793

Dear Ms. Loudermilk:

Thank you for the opportunity to review and comment on the Special Management Area Application and Draft Environmental Assessment (DEA) for the Honoapiilani Highway Improvements Project (Alaelae Point to Honolua Bay), Kapalua, Maui (TMK 4-2: 41 and 42). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project.

b. The flood hazard information provided on page 9 of the DEA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my Civil Works Technical Branch staff at (808) 438-8876.

Sincerely,

*James Pennaz*  
James Pennaz, P.E.  
Chief, Civil Works  
Technical Branch

JAMES "KIMO" APANA  
Mayor

CHARLES JENCKS  
Director

DAVID C. GOODE  
Deputy Director



JUL 06 2000

RALPH M. NAGAMINE, L.S., P.E.  
Land Use and Codes Administration

RONALD R. RISKA, P.E.  
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.  
Engineering Division

ANDREW M. HIROSE  
Solid Waste Division

BRIAN HASHIRO, P.E.  
Highways Division

COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
AND WASTE MANAGEMENT

LAND USE AND CODES ADMINISTRATION  
250 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

JUN 21 P2:52

RECEIVED

DATE: JUNE 21, 2000

MEMO TO: JOHN E. MIN  
DIRECTOR OF PLANNING

FROM: *RMK* CHARLES JENCKS *RMK*  
DIRECTOR OF PUBLIC WORKS AND WASTE MANAGEMENT

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT APPLICATION  
HONOAPIILANI HIGHWAY IMPROVEMENTS FROM ALAELAE POINT  
TO HONOLUA BAY  
TMK (2) 4-2-005: 041 AND 042

We reviewed the subject application and have no comments or objections to the proposed project at this time.

Please call me at 270-7845 if you have any questions regarding this memorandum.

RMN:msc

S:\LUCA\CM\Honoahwy2.wpd

BENJAMIN J. CAYETANO  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-8097



KAZU HAYASHIDA  
DIRECTOR

DEPUTY DIRECTORS  
BRIAN K. MINAAI  
GLENN M. OKIMOTO

JUN 30 12:19

June 27, 2000

DEPT

RECEIVED

IN REPLY REFER TO:  
STP 8.9592

Mr. John E. Min  
Director  
Department of Planning  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Min:

Subject: Honoapiilani Highway Improvements from Alaelae Point to Honolua Bay  
Special Management Area Use Permit SM1 2000/0018  
TMK: 4-2005: Por. 041 and Por. 042

Thank you for your transmittal requesting our comments on the subject application.

The applicant should be directed to continue their coordination with our Maui Highways District, for the subject roadway and transportation improvements.

We appreciate the opportunity to provide comments.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Kazu Hayashida".

KAZU HAYASHIDA  
Director of Transportation

BENJAMIN J. CAYETANO  
GOVERNOR



JUL 03 2000

GENEVIEVE SALMONSO  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
236 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4186  
FACSIMILE (808) 586-4186

June 27, 2000

Mr. Kazu Hayashida, Director  
State Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Subject: Draft Environmental Assessment for the Improvements to  
Honoapiilani Highway, from Alaelae Point to Honolua  
Bay, Maui

Thank you for the opportunity to review the subject document. We  
have the following comments.

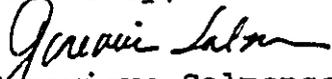
1. Please describe what percentage of Plantation Estates has been built?
2. Please consult with affected community groups and include any letters in the final environmental assessment.
3. Please provide a plan view showing the status of site 4829 after the project has been built. Clearly specify all the mitigation measures to preserve the historic value of the site.
4. The proposed project will convey additional storm runoff from the roadway widening and offsite development. Where does the storm runoff eventually discharge into? What is the impact of this additional runoff and its associated pollution on the receiving waters? Has any water quality study been done on the receiving waters? Is there any long-term water quality monitoring plan?

Mr. Hayashida

Page 2

Should you have any questions, please call Jeyan Thirugnanam at 586-4185. Thank you.

Sincerely,



Genevieve Salmonson  
Director

e: ✓ Munekiyo, Arakawa & Hiraga

August 8, 2000

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

**SUBJECT: Honoapiilani Highway Improvements, from  
Alaelae Point to Honolua Bay**

Dear Ms. Salmonson:

Thank you for your letter of June 27, 2000 to the State Department of Transportation on the subject project. On behalf of the applicant, we would like to offer a response for your consideration.

1. All of the lots within Plantation Estates have been improved and sold.
2. We have consulted with the West Maui Taxpayers Association as part of the early consultation requirements of the Environmental Assessment (EA). It is noted that a County Special Management Area (SMA) Use Permit is also required. An SMA notice of application filing was published in the Maui News to provide notice to interested community groups and individuals. During the EA public review period, no letters were received from community groups or individuals.
3. Site 4829 consists of dry-laid rock retaining walls associated with the Honoapiilani Highway drainage crossing. Enclosed is a plan view and profile of the proposed culvert improvement in the area of Site 4829. We note that the existing rock wall below the new culvert is proposed to be retained.
4. It is noted that the proposed improvements will allow 100-year storm runoff to flow through the culvert under the highway. With the two (2) existing 24-inch drainage culverts, projected 100-year storm runoff would overtop the highway. The proposed improvements do not increase runoff and existing drainage patterns will not be altered. Thus, we do not believe that water quality studies or a long term water quality monitoring plan would be warranted.

Genevieve Salmonson  
July 11, 2000  
Page 2

Thank you for your comments on the project. If you have any questions, please feel free to call me.

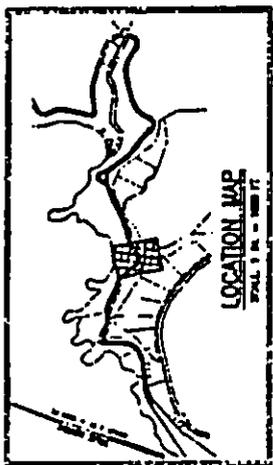
Very truly yours,



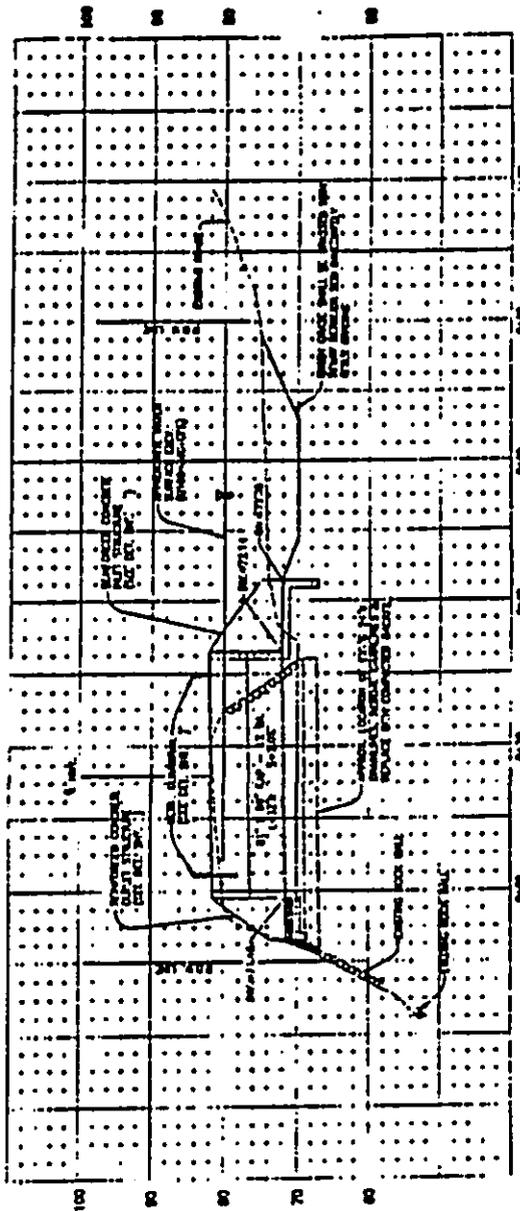
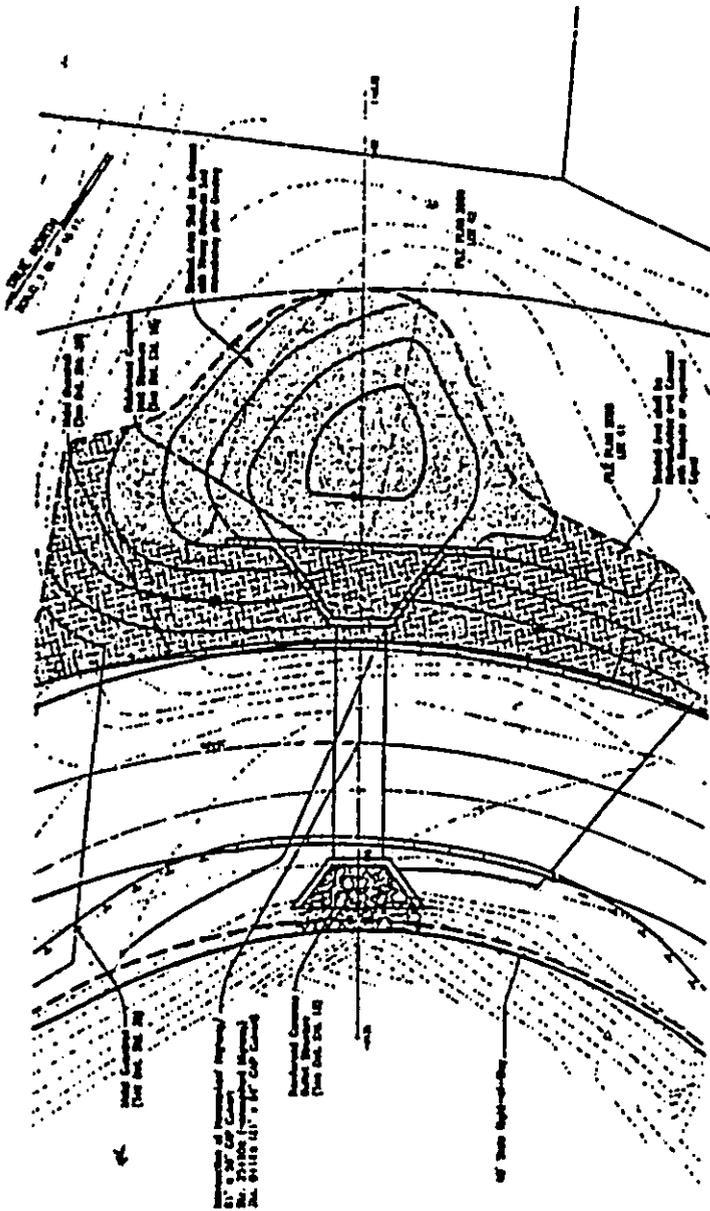
Milton Arakawa, A.I.C.P.  
Project Manager

MA:to  
Enclosure

kapalum/hpiller/oeqctr.001



- LEGEND:**
- 10' Right-of-Way
  - 20' Right-of-Way
  - 30' Right-of-Way
  - 40' Right-of-Way
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  - 970' Right-of-Way
  - 980' Right-of-Way
  - 990' Right-of-Way
  - 1000' Right-of-Way



**PROFILE - 81' x 59' GAP CULVERT**  
Scale: Vert. 1" = 10'

**W. RANDOLPH**  
INCORPORATED  
ENGINEERS AND ARCHITECTS  
1000 W. 10th Street  
Tulsa, Oklahoma

**WILSON ENGINEERING, INC.**  
1000 W. 10th Street  
Tulsa, Oklahoma

**HONOLULU HIGHWAY IMPROVEMENT**  
TULSA, OKLAHOMA, TULSA, OKLA. HIGHWAY  
PLAN & PROFILE  
81' x 59' GAP CULVERT

DATE: 10/15/54  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

United States  
Department of  
Agriculture



Natural  
Resources  
Conservation  
Service

10 Ima Kala St.  
Suite 209  
Wailuku, HI 96793

*Our People...Our Islands...In Harmony*

JUN 28 P1:59

DEPT  
C  
DATE: June 27, 2000

Mr. John E. Min, Director  
Department of Planning  
County of Maui  
250 S. High Street  
Wailuku, Hawaii 96793

Dear Mr. Min,

SUBJECT: Honoapiilani Highway Improvements from Alae Pt. To Honolua Bay  
I.D. SM1 2000 0018; TMK: 4-2-005: por. 41, por. 42

A new corrugated culvert is proposed at the Makuleia segment. Does an increase in the size of the culvert affect the downside of the drainage? On the downside is a steep rocky ledge, and a newly constructed walk way to the beach.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in cursive script that reads "Neal S. Fujiwara".

Neal S. Fujiwara  
District Conservationist

MUNEKIYO, ARAKAWA & HIRAGA, INC.

August 8, 2000

Neal S. Fujiwara  
District Conservationist  
U.S. Department of Agriculture  
Natural Resources Conservation Service  
210 Imi Kala Street, Suite 209  
Wailuku, Hawaii 96793

SUBJECT: Honoapiilani Highway Improvements, from  
Alaelae Point to Honolua Bay

Dear Mr. Fujiwara:

We have received a copy of your June 27, 2000 letter to John E. Min of the County of Maui Department of Planning on the subject project. On behalf of the applicant, Kapalua Land Company, Ltd., we would like to offer a response for your consideration.

The project involves the construction of an 81-inch by 59-inch aluminum pipe arch culvert which has been designed to accommodate a 100 year recurrence interval 24 hour duration storm. This would replace two (2) existing 24-inch drainage culverts. The existing rock wall below the culvert will be retained. It is noted that the proposed improvements will allow 100-year storm runoff to flow through the culvert under the highway. With the existing culverts, projected 100-year storm runoff would overtop the highway. With regard to the recently constructed walkway from Honoapiilani Highway to the beach, the proposed improvements should result in no additional impact.

Thank you for your comments on the project. If you have any questions, please feel free to call me.

Very truly yours,



Milton Arakawa, A.I.C.P.  
Project Manager

MA:to  
kapalua/hp/ilani/usdaltr001



JAMES "KIMO" APANA  
MAYOR

OUR REFERENCE  
YOUR REFERENCE

# POLICE DEPARTMENT COUNTY OF MAUI

55 MAHALANI STREET  
WAILUKU, HAWAII 96793  
(808) 244-6400  
FAX (808) 244-6411



THOMAS M. PHILLIPS  
CHIEF OF POLICE

KEKUHAPPIO R. AKANA  
DEPUTY CHIEF OF POLICE

June 29, 2000

## MEMORANDUM

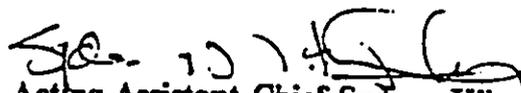
TO : DIRECTOR, PLANNING DEPARTMENT

FROM : THOMAS M. PHILLIPS, CHIEF OF POLICE

SUBJECT : I.D. SM1 2000/0018  
TMK: 4-2005:Por. 041 and Por. 042  
Project Name: Honoapiilani Highway Improvements from Alaelae Point  
to Honolua Bay  
Applicant: Robert McNatt, Kapalua Land Company, Ltd.

\_\_\_\_\_ No further recommendation or comment is necessary or  
desired.

  X   Refer to attachment.

  
Acting Assistant Chief Sydney Kikuchi  
For: THOMAS M. PHILLIPS  
Chief of Police

TO : THOMAS PHILLIPS, CHIEF OF POLICE  
MAUI COUNTY POLICE DEPARTMENT

VIA : CHANNELS

FROM : SERGEANT BRIAN DE MELLO  
SPECIALIZED UNITS, LAHAINA PATROL

SUBJECT : IMPROVEMENT FROM ALAELAE POINT TO HONOLUA BAY

Sir, the following addresses proposed improvements in the area of Alaelae Point to Honolua Bay. As addressed in the communication from Officer A. KAMAUNU dated on 7/12/99, that much needs to be done to improve the quality of the area in question. This project entails the realignment of the roadway at Alaelae Point. Such would definitely have an impact on traffic, especially creating traffic delays in that area.

It is strongly suggested that adequate traffic control be utilized at all times to minimize the possibility of a traffic mishap, further that proper warning signs be placed in advance to the construction site. With this being addressed, I foresee no further objections or problems with this proposed project, and recommend approval.

respectfully submitted,

*Brian De Mello*  
Sergeant Brian DE MELLO 7000  
SPECIALIZED UNITS, DISTRICT IV  
06/27/00 0720 HOURS

*Noted  
LT. W. [Signature]  
6-27-00*

*Chief,  
Sgt. Demello cited a memo previously submitted  
by off. Kamaunu on 7/12/99, which can be found  
in Chapter IV of the proposal.... our concerns have  
already been voiced.*

*Act Ac [Signature]  
06/29/00*

MUNEKIYO, ARAKAWA & HIRAGA, INC.

August 8, 2000

Thomas M. Phillips  
Chief of Police  
Police Department  
County of Maui  
55 Mahalani Street  
Wailuku, Hawaii 96793

**SUBJECT: Environmental Assessment for Honoapiilani Highway  
Improvements, from Alaelae Point to Honolua Bay**

Dear Chief Phillips:

We have received a copy of your June 29, 2000 memorandum to the County of Maui Department of Planning on the subject project. On behalf of the applicant, Kapalua Land Company, Ltd., we would like to offer a response.

During the period of construction, traffic control signs will be placed in advance of the construction site to warn motorists of upcoming construction. At least one (1) lane of traffic will be open at all times to accommodate traffic.

We appreciate your comments and interest in the project. If you have any questions, please feel free to call me.

Very truly yours,



Milton Arakawa, A.I.C.P.  
Project Manager

MA:to  
kapalua/hpilan/mpd/tr.002

BENJAMIN J. CAYETANO  
GOVERNOR



RAYMOND H. SATO  
COMPTROLLER

STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING  
AND GENERAL SERVICES  
SURVEY DIVISION  
P. O. BOX 119  
HONOLULU, HAWAII 96810

700 JUL 10 P3:22

RESPONSE REFER TO:

FILE NO. \_\_\_\_\_

July 6, 2000

MEMORANDUM

TO: Mr. John E. Min, Planning Director  
Maui County Planning Department

ATTN.: Ms. Robyn Loudermilk, Staff Planner

FROM: Randall M. Hashimoto, State Land Surveyor

SUBJECT: I.D.: SM1 2000/0018  
TMK: 4-20-05:por. 41 and por. 42  
Project Name: Honoapiilani Highway Improvements  
from Alaelae Point to Honolua Bay  
Applicant: Robert McNatt, Kapalua Land Company, Ltd.

We have reviewed the Application for Special Management Area Permit for the above subject.

Please be advised that our records indicate that a Benchmark (4-M-1923) may be located within the improvement area (see enclosed description).

Please be further advised that if there is a possibility that the Benchmark will be disturbed or destroyed during road improvements, the Benchmark must be referenced and eventually replaced. Copies of field notes, descriptions and new values of the replaced Benchmark should be sent to our office.

*Randall M. Hashimoto*  
RANDALL M. HASHIMOTO  
State Land Surveyor

Enclosure

8-2-24  
MEM  
EK, 11705  
Honbeck

LAHAIA Q. T.H. Contd. 11

FEET

- Lahaina, 12.0 miles northeast of, top of pali, west side of Honolulu Gulch (opposite mouth), 12 feet north of fence line, 20 feet west of edge of pali; set in rock; bronze tablet stamped "4-N-1923", painted "123.9" 124.130
- Lahaina, 12.8 miles northeast of, 3.3 miles west of Honokahau 30 feet south of road, 150 feet west of crest of ridge, cemented in top of milepost 35; copper nail and washer, painted "137.2" 137.52
- Honokahau, 1.4 miles west of, 73 feet northeast of road forks, 250 feet northeast of house, on top of large boulder; chiseled cross, painted "73.2" 73.42
- Honokahau, 0.7 mile northwest of, 100 feet north of milepost 37, 10 feet south of road at bend (turning south down along side of pali to Honokahau), 1 foot above road surface; bronze tablet set in rock shelf, stamped "5-N-1923", painted "199.7" 199.978
- Honokahau (end of road), 500 feet southwest of mouth of stream, 100 feet north of house, 30 feet west of stream, 3 feet north of board fence, in base of large monkey-pod tree; copper nail and washer painted "13.5" 13.67
- Honokahau, sea level, 1:30 p.m., May 3, 1923 0.2



MUNEKIYO, ARAKAWA & HIRAGA, INC.

August 8, 2000

Randall M. Hashimoto  
State Land Surveyor  
Department of Accounting and General Services  
Survey Division  
P.O. Box 119  
Honolulu, Hawaii 96810

**SUBJECT: Honoapiilani Highway Improvements, from Alaelae Point  
to Honolua Bay (SM1 2000/0018)**

Dear Mr. Hashimoto:

We have received a copy of your July 6, 2000 letter to the County of Maui Department of Planning on the subject project. On behalf of the applicant, Kapalua Land Company, Ltd., we would like to thank you for your transmittal of information that indicate that a Benchmark may be located within the improvement area. Should there be any construction which disturbs the Benchmark, we intend to reference and replace it. As appropriate, copies of field notes, descriptions and new values of any replaced Benchmark would be sent to your office.

If you have any questions, please feel free to call me.

Very truly yours,



Milton Arakawa, A.I.C.P.  
Project Manager

MA:to

kapalua/hp/ilan/dags/tr.001

Council Chair  
Patrick S. Kawano

Council Vice-Chair  
Dain P. Kane

Presiding Officer: Pro Tempore  
Dannia Y. Nakamura

Council Members  
Michael A. Davis  
J. Kaiani English  
John Wayne Enriquez  
G. Riki Hokama  
Wayne K. Nishiki  
Charmaine Tavares



**COUNTY COUNCIL**  
COUNTY OF MAUI  
200 S. HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

Director of Council Services  
Ken R. Fukuoka

**COPY**

July 10, 2000

Mr. Robert Siarot, Maui District  
Department of Transportation  
650 Palapala Dr.  
Kahului, HI 96732

Dear Mr. Siarot:

**RE: Draft Environmental Assessment for IMPROVEMENTS TO  
HONOAPIILANI HIGHWAY, FROM ALAELAE POINT TO HONOLUA  
BAY**

Please require the applicant to address the following concerns before making a determination of no significant impact;

1. The project calls for a new 81-inch by 59-inch corrugated aluminum pipe culvert to be installed above Makulela Bay, replacing two existing 24-inch drainage culverts. This new culvert will receive stormwater runoff for the mauka 135 acre drainage basin. Much of this basin is now or is planned to be a golf course. Please require the applicant to submit complete drainage plans, including pollutant loadings, that verify that runoff from this basin, as well as the upgraded culvert for Honolua Bay, will not adversely impact the receiving nearshore waters.
2. Please have the applicant address impact to the areas along the highway that are currently utilized for parking in order to access Makuleia Bay and Honolua Bay. Can this project accommodate areas to provide safe parking along the highway? Will this project diminish the currently available roadside parking in these areas?

RECEIVED  
DOT-HWAYS  
MAUI DISTRICT OFFICE  
200 JUL 11 AM 6:21

0945

Thank you for your consideration of my comments.

Sincerely



Wayne K. Nishiki  
Councilmember

Cc: Robert McNatt  
Kapalua Land Co.

August 8, 2000

Wayne K. Nishiki, Councilmember  
County Council  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

SUBJECT: Draft Environmental Assessment for Improvements to  
Honoapiilani Highway, From Alaelae Point to Honolua Bay

Dear Mr. Nishiki:

We have received a copy of your letter of July 10, 2000 to Mr. Robert Siarot pertaining to the subject project. On behalf of the applicant, Kapalua Land Company Ltd., we would like to address your comments as follows.

1. A new 81-inch by 59-inch corrugated aluminum pipe culvert is proposed to be installed at Honoapiilani Highway upstream of Makuleia Bay. The 135-acre drainage area which flows through this segment of Honoapiilani Highway has already been developed. No changes to the upstream drainage area are being proposed as a result of this project. The scope of this project in this vicinity pertains to the replacement of two (2) existing 24-inch drainage culverts with the 81-inch by 59-inch corrugated aluminum pipe culvert. The new culvert would allow projected 100-year storm runoff to flow through the culvert under the highway. With the existing culverts, projected 100-year storm runoff would overtop the highway.

At Honolua Bay, a new 24-inch drainline is being installed to prevent excessive runoff from flowing over the highway, as well as to alleviate ponding on the highway.

The proposed improvements would not significantly increase runoff and are not expected to significantly impact nearshore waters at Makuleia Bay or Honolua Bay.

2. The proposed project involves widening of the existing travel lanes and shoulder improvements to improve operating and safety conditions. The project should not

Wayne K. Nishiki, Councilmember  
August 8, 2000  
Page 2

diminish the extent of shoulder improvements which are currently utilized for roadside parking.

We appreciate your interest in the project. If you have any questions, please feel free to call me.

Very truly yours,



Milton Arakawa, A.I.C.P.  
Project Manager

MA:to  
[kapaue/hpiliari/nishiki.1r](mailto:kapaue/hpiliari/nishiki.1r)

# ***References***

---

### References

AECOS, Inc., Maui Coastal Zone Atlas, 1981.

Community Resources, Inc., Maui County Community Plan Update Program Socio-Economic Forecast Report, January 1994.

County of Maui, The General Plan of the County of Maui 1990 Update.

County of Maui, West Maui Community Plan, February 1996.

Maui Economic Development Board, Inc., Maui County Data Book 1998, June 1998.

Munekiyo, Arakawa & Hiraga, Inc. Village Clubhouse, Practice Facility and Related Improvements, Project District Step II, Special Management Area Use Permit, and Off-Site Parking Application, March 1998.

State of Hawaii, Department of Business and Economic Development, Data Book, March 1993.

U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.

University of Hawaii at Hilo, Department of Geography, Atlas of Hawaii, Third Edition, 1998.

University of Hawaii-Land Study Bureau, Detailed Land Classification Island of Maui, May 1967.

# ***Appendix A***

---

## ***Archaeological Inventory Survey***

**An Archaeological Inventory Survey  
Of Honoapi'ilani Highway Corridor  
From Alaelae Point to Honolua Bay,  
Honolua and Honokahua *Ahupua`a*,  
Lahaina District, Maui Island  
(TMK: 4-2-05)**

**Prepared for:**

**Mr. Robert McNatt  
Kapalua Land Company, Ltd.  
Kapalua, Maui**

**Prepared by:**

***Xamanek Researches  
Pukalani, Hawaii***

***Erik M. Fredericksen  
Demaris L. Fredericksen***

**March 2, 2000**

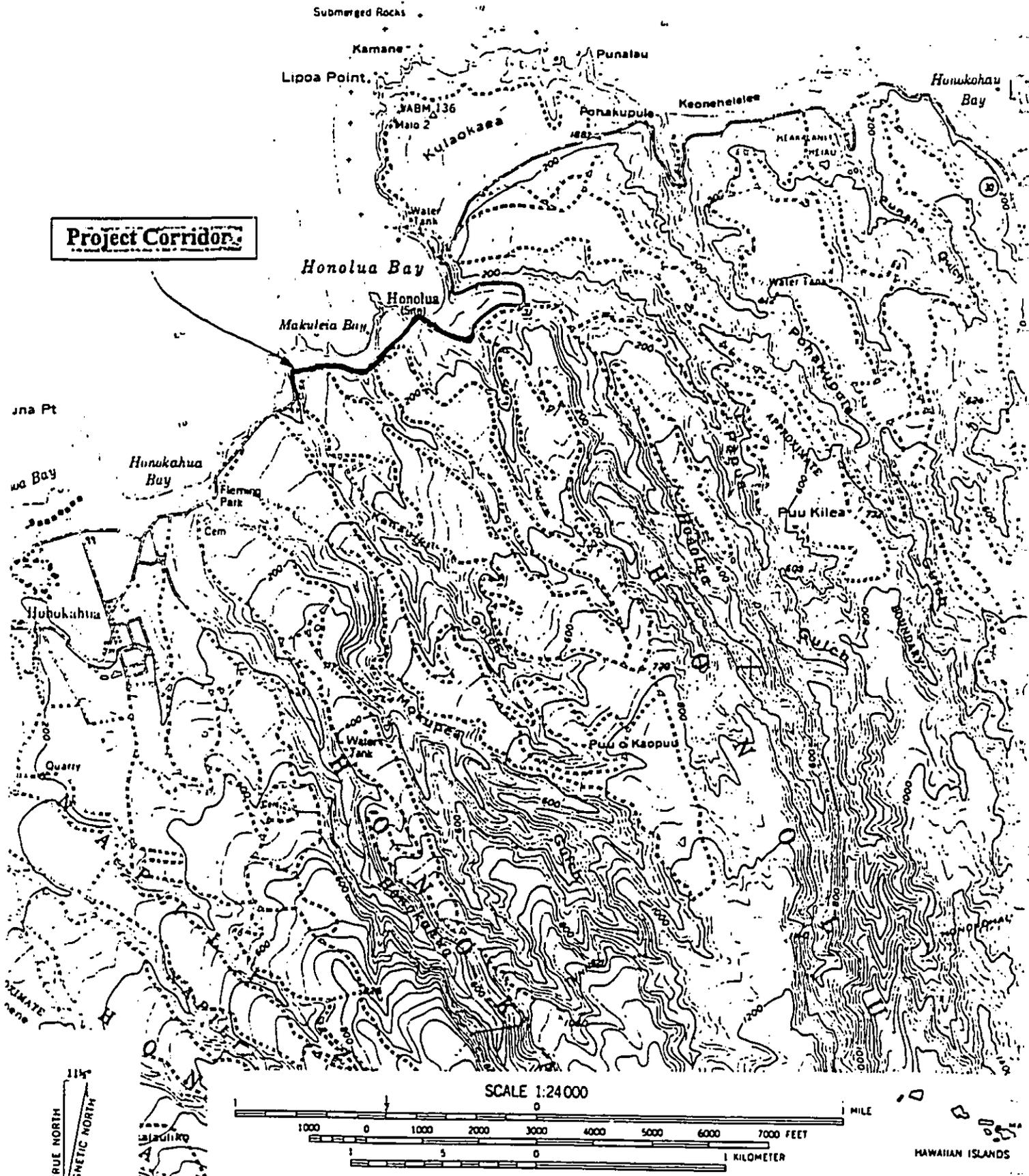
## ABSTRACT

Xamanek Researches conducted an archaeological inventory survey for the proposed Honoapi'ilani Highway improvements project from Alaelae Point to Honolua Bay, on the island of Maui. Work was conducted in late 1999 and early 2000, and one previously unrecorded site was located during the survey.

Site 50-50-03-4829 consists of two dry-laid rock retaining wall sections that support Honoapi'ilani Highway across an unnamed drainage area near Makuleia Bay. Site 4829 is in generally good condition. It is a rare example of a surviving dry-laid rock road crossing on the island of Maui. It qualifies for significance under Criterion "C" and "D" of the State and Federal Historic preservation guidelines. It is recommended that this road crossing be incorporated in the planned Honoapi'ilani Highway improvements project.

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**Project Corridor**

SCALE 1:24000



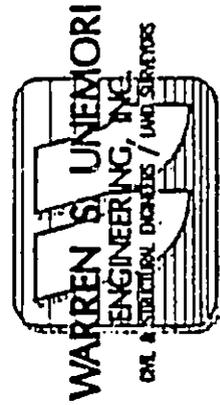
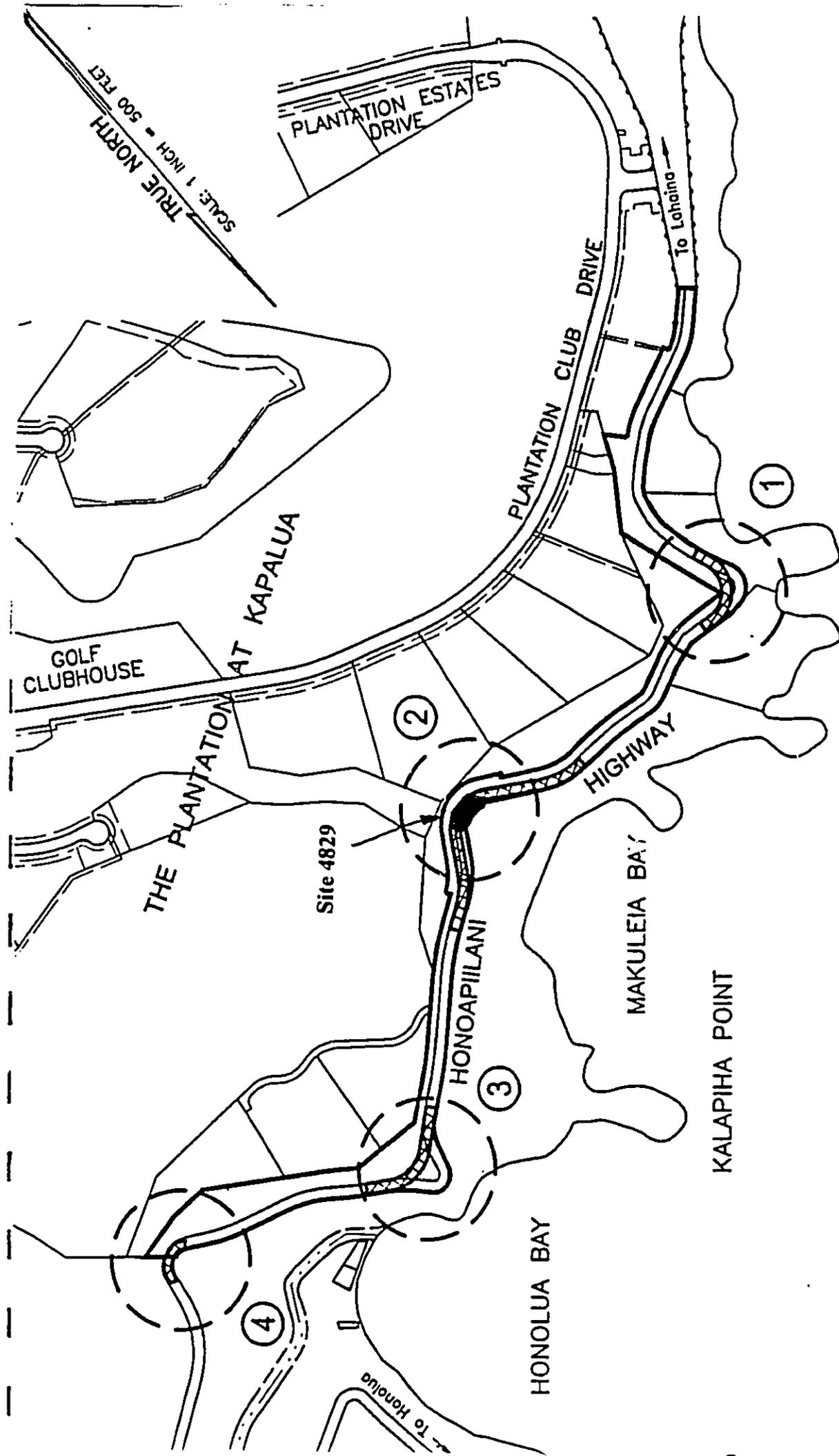
TRUE NORTH  
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 APPROXIMATE MEAN  
 DECLINATION 1983

CONTOUR INTERVAL 40 FEET  
 DATUM IS MEAN SEA LEVEL

HAWAIIAN ISLANDS  
 QUADRANGLE LOCATION

Map 1 - U.S.G.S. Topographic Map, Napili Quadrangle, 1983.





**PROJECT VICINITY MAP**

SCALE: 1 INCH = 500 FEET

ALAEAE POINT

KALAPIHA POINT

HONOLUA BAY

MAKULEIA BAY

HONOAPIILANI

Site 4829

THE PLANTATION AT KAPALUA

GOLF CLUBHOUSE

PLANTATION ESTATES DRIVE

PLANTATION CLUB DRIVE

HIGHWAY

To Lohaina

To Honolulu

TRUE NORTH  
SCALE: 1 INCH = 500 FEET

1482

## INTRODUCTION

Xamanek Researches was contacted by Mr. Milton Arakawa of Munekiyo, Arakawa and Hiraga, Inc. about conducting an archaeological inventory survey for a Maui road improvement project in the early fall of 1999. We were then asked to submit a proposal to Mr. Robert McNatt, Vice President for Development, Kapalua Land Company, for this work.<sup>1</sup> Our proposal was subsequently accepted. The proposed Honoapi'ilani Highway improvements project stretches from Alaelea Point to Honolua Bay, a distance of about 1.7 km..or 5600 feet (Map 3).

### Study Area

The 1.7 km. road corridor under study stretches along the coastal cliffs and headlands in Honolua *uhupua'a* [TMK: 4-2-05<sup>2</sup>]. Our area of focus in the road improvements project consisted of two turn sections--Curve #2 (STA 42 + 00 to 28 + 00) and Curve #3 (STA 37 + 00 ti 40 + 00).<sup>3</sup>

The corridor follows much of the existing Honoapi'ilani Highway. Elevations range from a low of near 40 feet to a high of about 114 feet AMSL. Much of the corridor passes through former coastal dry forest habitat. However, the bulk of the project corridor is dominated by alien plants typically found in roadside disturbance communities. Rainfall averages 40 to 60 inches annually, and the predominant winds are tradewinds, blowing from the northeast.

This portion of West Maui has been shaped most recently by the volcanic rejuvenated stage called Honolua volcanics, in which pyroclastic flows of mugearite were channeled down stream valleys previously carved out from erosion (Juvic and Juvic, 1998, pp.42-44). The soils are classified as inceptisols, typical on unstable and/or relatively young landscapes. Also present are soils classified as aridisols—soils derived from volcanic ash which possess high fertility (Ibid., p. 92).

---

<sup>1</sup> Kapalua Land Company is paying for the overall highway improvements project in order to fulfill a condition of approval for the Plantation Subdivision Development. This project was approved by the County of Maui in 1988.

<sup>2</sup> Formerly tax map 4-2-01.

<sup>3</sup> Per requirements set forth by State Historic Preservation Division (SHPD) in a 17 August 1999 letter to Mr. Arakawa (SHPD document number 9908CD12).

## BACKGROUND HISTORICAL INFORMATION

The Honoapi'ilani Highway project area lies within the Lahaina District, in a section between Alaelae Point and Hololua Bay, in the vicinity of the Kapalua Resort Complex. It also extends across the coastal cliffs in portions of the *ahupua`a* of Honolua and Honokahua.

### Precontact and early post-contact times

The study region is situated to the north of Lahaina. There are 5 large valleys in this western portion of the West Maui Mountains. They are Honokawai, Kahana, Honokahua, Honolua, and Honokahau. Handy and Handy (1972, pg. 494) note:

*"The first four all had extensive lo`i lands in their valley bottoms, where terraces rose tier on tier in symmetrical stone-faced lo`i. On this part of the coast there is no sloping kula land seaward of the valleys as there is back of Lahaina and southeastward. Honokahau in particular, which is watered by a large rivulet flowing from far back in the mountains, had the most extensive system of lo`i along this coast."*

The 5 valley agricultural systems no doubt supplied much of the food required by a fair-sized population, which lived in clusters at the mouths of them. The traditional district or *moku* of Ka'anapali was the location of one of the encounters between chiefs of Maui and the Island of Hawaii, as they struggled for ascendancy. Samuel Kamakau (1992, p. 74) tells about the conflict that took place in 1738, after an entire year of preparation by the Big Island chief Alapa`i. He states:

*"What was this war like? It employed the unusual method in warfare of drying up the streams of Kaua`ula, Kanaha, and Mahoma (which is the stream near Lahainaluna). The wet taro patches and the brooks were dried up so that there was no food for the forces of Ka-uhi or for the country people. Alapa`i's men kept close watch over the brooks of Olowalu, Ukumehame, Wailuku and Honokawai. When Pele-io-holani<sup>3</sup> heard that Alapa`i was at Lahaina he gathered all his forces at Honokahua and at Honolua. At Honokawai an engagement took place between the two armies and the forces of Alapa`i were slaughtered and fled to Keawawa. There Alapa`i heard that Pele-io-holani had landed at Honokahua and had an army stationed at Keawawa, and he disposed his forces, some on sea and some on land. Although Pele-io-holani had but 640*

<sup>3</sup> Pele-io-holani was chief of Oahu, and an ally of Ka-uhi, a son of Kekaulike. Another name for Ka-uhi is Ka`ihu-pu-mai-ka-hoaka—Ka-uhi-covered-by-the-shadow-of-the-crescent-moon (Kamakau, p. 73).

*men against Alapa'i's 8,440 from the six districts of Hawaii, there were among them some famous warriors. ...Pele-oi-holani intended to unite his forces with those of Ka-uhi, but Alapa'i's men held Lahaina from Ukumehame to Mala on the north...Pele-oi-holani was surrounded on all sides, mauka and makai, by the forces of Alapa'i.... The two ruling chiefs met there again, face to face, to end the war and become friends again, so great had been the slaughter on both sides...."*

The post-contact land management in this region is discussed by Silva (1986) and is summarized here. In the late 18th or early 19th century, Kamehameha I gave the entire *ahupua'a* of Honokahua to Isaac Davis, in return for his help in Kamehameha's wars of conquest. Davis, along with another Englishman named John Young, had been "detained" by Kamehameha. Davis' ship, the Fair American, had been captured and all aboard except him had been killed. Young was kept ashore until his ship, the Eleanora departed without him. Both men were treated so well by Kamehameha that they were quite willing to remain with him, acting as his advisors while he consolidated his power within the islands.

Upon the sudden death of Isaac Davis in 1810, his land holdings in Honokahua were managed by John Young. When Young died in 1835, the land was divided among both Young's and Davis' heirs. During the Mahele in 1848, a 2,650-acre grant was awarded formally to Davis' daughter, Kale (Sally) Davis (LCA 8522-B, RP 2236), who was the wife of Alexander Adams, another favorite of Kamehameha I. A portion of the study corridor is located in this grant land. There were no *kuleana* awards granted in Honokahua *ahupua'a*.

A total of 37 LCAs were made in Honolua *ahupua'a*. Most are located in the valley along the stream and were awarded for taro production, *kula* and/or houselots. Two<sup>4</sup> are located *mauka* of the highway, outside the study corridor in the Kapalua Plantation Estates.

A census taken in 1831 estimated that the entire population of Ka'anapali totaled only 8.5% of the island total of 35,062—about 2,980 (Schmitt, 1973, p. 18). By 1836, it had dropped to about 5.5% of the island total—1,341 (Ibid., p. 38).

#### Post-1850s

The population of West Maui continued to decline in the second half of the 19th century following the collapse of the Pacific whaling industry in the 1860s, prompted by the discovery of oil in Pennsylvania a decade or so earlier. Those who had worked in the support occupations for supplying whaling ships since the 1840s had to look elsewhere for their livelihood.

In Lahaina, sugar production developed, while to the north in Ka'anapali district, other options such as ranching and different crops were tried, including coffee and pineapples. The lands of Kale Davis became part of the Campbell Estate in the latter part

---

<sup>4</sup> LCA 4250—12.29 acres to Kauai; LCA 3931—3.42 acres to Niihau.

of the 19th century. Honolua Ranch was established, and pioneered cattle production in the area. In 1890, Henry Perrine Baldwin, the son of missionary Dwight Baldwin, acquired the Campbell lands, including Honolua Ranch, and continued the ranching activities and initiated coffee production. The coffee venture proved unprofitable, and was soon terminated.

Following Baldwin's death in 1911, David T. Fleming became manager of Honolua Ranch. He had had experience with pineapple growing in Haiku, and gradually began shifting the focus to pineapple production. In 1915, the Honolua Ranch/Baldwin Packers complex was moved from Honolua to Honokahua. A pineapple cannery was built, as were the Honolua Stables. By the 1920s, pineapple was being grown in West Maui on a large scale, becoming the dominant crop of the region..

Handy and Handy comment on the system of irrigated terraces built for taro production in precontact times located in this area of Maui (1974, pg. 494):

*"Honokohau in particular, which is watered by a large rivulet flowing from far back in the mountains, had the most extensive system of lo'i along this coast. In 1931 a greater proportion of lo'i were still planted here than anywhere else on this side of Maui, but by 1934 commercial planting and exhaustion of the soil had brought in root-rot, and some of the large lo'i were abandoned, and some were planted in rice."*

The small plantation community of Honokahua developed around the Honolua Ranch/Baldwin Packers pineapple operations, and the overall population of the Lahaina District increased in the first 4 decades of the 20th century. Honolua Stable ceased operation in 1963, following the merger of Baldwin Packers with Maui Land and Pineapple Company, the latter having been formed in 1962. As early as 1964, Maui Land and Pineapple Co. began planning for resort development, which has culminated in the Kapalua/Ritz-Carlton complex that exists today. The present project involves a road improvement project that is to be funded by Kapalua Land Company.

## ARCHAEOLOGICAL BACKGROUND RESEARCH

Three *heiau* are located in the general coastal area in fairly close proximity to the study corridor. These were recorded during the survey done by Winslow Walker in 1929-1930 (Walker, 1931). One is located in the Honokahua region—Site 16, and two are in Honolulu—Sites 17 and 18. Site 16 is identified as Kahauiki *heiau*, and is described as follows: “A small irregular platform of stones whose walls have been taken for stock pens.” Its location is noted as “*muuka* to Kahauiki Camp a short distance up the west side of a gulch of the same name.” (Ibid., p. 119). Site 17 is identified as Puhalakau (Ai Maia) *heiau*. Its location is “*makai* to Honolulu Park along shore. Its description reads: “Heiau for Kuula. Level space showing some paving with small stones. Modern stone walls and houses built on the site obliterating its outlines. Fisherman’s *ko’a* formerly beach has been washed away,” according to informant Kepuhi Keahi of Honolulu (Ibid. p. 120). Site 18 is called Honuaula *heiau*, and was located in Honolulu Gulch just east of a bend in the road. It is described as “Remains of old stone platforms and walls. Measures 29 ft. on south, 46 on west, 20 on north, 54 on east. North wall 3 ft. thick. Whole interior formerly paved with stone, now largely removed to build pens.” (Ibid., p. 121). The locations of these *heiau* are shown on Figure 1—Walker’s map of this part of Maui.

### Maui Land and Pineapple Company Development

This area of development is part of the Honokahua Historic District (Site 50-50-1591). This Historic District, as described in the 1973 State Inventory of Historic Places, includes the plantation village, the cannery facilities of Baldwin Packers, Honolulu Ranch Stables, Honolulu Ditch, the Maui Pineapple Office, the Honolulu Store, plantation camp housing and two churches (Wright, 1974, short form data sheet). In a 1973 survey for Maui Land and Pineapple Company, in connection with the Honolulu Development, the Bishop Museum’s Department of Anthropology did work at Fleming Beach (at Kapalua), to the northeast of the subject parcel (Kirch, 1973). Kirch also worked at Fleming Beach Park at Honokahua Bay, and at Hawea Point Oneloa Bay and Makaluapuna Point. A site-complex made up of 8 features (Site 1346) was identified at Hawea Point, and was interpreted as a temporary Hawaiian settlement for marine exploitation and dated from c. AD 1500. Another site (Site 1347) was a cave shelter on the cliff face of Hawea Point, while a third, Site 1348 was identified as a stone terrace platform, and was located on a promontory overlooking Oneloa Bay. During this survey the Honokahua Burial Site (Site 1342) was first identified. Several sites were located and described, including a house site, terrace, enclosure and midden deposits, along the south band of Honokahua Stream on the east side of Fleming Beach Park (Site 1345) [Kirch, 1973].



Numbers of archaeological projects have been undertaken and completed in the general Kapalua Resort complex in the intervening years. Archaeological research for Kapalua Ritz-Carlton Hotel Development, Parcel 2-H was divided into three phases of investigation—reconnaissance survey, intensive survey and testing, and data recovery/mitigation excavations. In early 1986, initial clearing for access roads exposed disturbed human skeletal material. The pedestrian survey pinpointed 6 areas where human remains were present, expanding the boundaries of the Honokahua Burial area, and calling for a more detailed intensive survey to be conducted (Haun and Rosendahl, 1986).

This intensive survey was conducted, and included both surface and systematic soil coring and test excavations. A total of 8 sites were identified, including Honokahua Burial Site (site 1342). The probable boundaries for this burial site were defined, and areas of probability for burial recovery were formulated. Other prehistoric sites reported included segments of a prehistoric trail (Site 2015), and a subsurface cultural deposit (Site 2016). Three historic sites were associated with ranching—Honolua Ranch Stables, a concrete water trough and an enclosure (BPBM D12-15). Two other sites—a walled shelter near a trail and a recent hearth, and a rubble pile, were of indeterminate age (Donham, 1986).

Beginning in March of 1987, the data recovery and mitigation excavations began and continued until December 1988, when fieldwork was halted, due to external pressure. The interim results of the fieldwork were presented in an informational report describing the Honokahua Burial area as a multi-component burial site with over 1000 prehistoric burials. The site appears to have been used from as early as AD 600, according to radiocarbon analysis (Donham, 1989). The final report on archaeological findings is still being prepared. Archaeological work associated with the development of the Kapalua/Ritz-Carlton Resort complex by PHRI resulted in over 24 reports between 1986 and 1992.

After secession of excavation at the Honokahua Burial site, the Ritz-Carlton Hotel site was moved inland to a less culturally sensitive area. The archaeological monitoring strategy for the Ritz-Carlton Hotel new site included additional research in areas contiguous to the Honokahua burial grounds. This project work was divided into 3 areas (Guerriero, et. al., April 1993, p. 31). Area I contained 5 sites (Sites 2869, 2870, 2971, 2874 and 2875). One site was identified in Area II—Site 2872; in Area III—three sites were located (Sites 1342A, 2873 and 2876).

Site 2869 consists of 2 historic subsurface cultural deposits, and one historic feature containing 694 historic artifacts primarily of Japanese origin. The other feature also contained historic materials, although considerably fewer in number. These deposits probably represent a refuse dump for the nearby Japanese Plantation Camp (Ibid., p. 34). Site 2870 is part of another refuse dump, including structural remnants related to Honolua School and its outbuildings. Site 2871 consists of features (dwellings, tennis court, grandstands, Quonset hut, potting area) associated with late-plantation-era mid-management personnel activity during the 1940s through the 1960s (Ibid., p. 36). Site

2872 consists of historic stone-faced terracing and retaining walls. Site 2872 is composed of 6 features, a communal outhouse, a stone pile placed on corrugated roofing, 2 pits containing non-indigenous material and shell midden, and 2 bowl-shaped fire pits (*imu*). All features are considered modern. Site 2875 is a concrete foundation floor, perhaps a relic of plantation life in the early to mid-20<sup>th</sup> century (Ibid., pp. 38-41).

In Area III, 3 sites were identified. Site 1342A consists of 10 prehistoric human burials peripheral to the central burial ground. Site 2873 consists of precontact cultural deposits and fire pits indicative of prehistoric habitation, and Site 2876, which is a prehistoric trail remnant (Ibid., pp. 41-49). In Site 1342A, BU-2 was located 1.7-1.8 m. below surface and produced two datable radiocarbon samples. One ranged from AD 1703-1918, and another, recovered from a deeper level yielded a date range from AD 1270-1650. A third radiocarbon date of AD 1670-1950 was recovered from BU-7 (Ibid.).

Although two dates could be within the post-contact period, the method of burial (flexed) is precontact in configuration. Site 2873 consists of a series of *imu*. Charcoal from 3 of these fire pits dated the utilization of the area between AD 1423-1680 (Ibid., pp. 58-60). Such features are ordinarily associated with habitation, but no clear habitation sites were found in Area III.<sup>5</sup>

Site 2876 is a trail segment located among the burials and is probably a segment of the prehistoric trail mentioned earlier—Site 2015. It consists of 2 parallel alignments of large angular and subangular basalt boulders, stacked roughly in 2 courses. The interior is paved with angular basalt and small cobbles, with some scattered waterworn coral fragments present as well (Guerriero, et. al., p. 60).

In May of 1994, Xamanek Researches conducted an archaeological inventory survey on a 12.1-acre area referred to as the Kapalua Bay Hotel and The Bay Club grounds, which lies northeast of the project area. A series of 28 subsurface backhoe tests were excavated. While no historic sites were located during our survey, an area of sand dune deposits was noted at the northern end of the project parcel. It was impossible to test the area at the times, because of underground sprinkler systems and electrical conduits. The recommendation was to survey this portion in the event that the area was to be developed in the future (Fredericksen, et. al., September 1994).

In May of 1996, Xamanek Researches returned to examine the previously untested dune areas. As an addendum to the original inventory survey, the findings, which were negative, were reported in September 1996 (Fredericksen, et.al.). However, archaeological monitoring was recommended during any future earthmoving activities in the dune area (Zone B).<sup>6</sup>

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<sup>5</sup> At Fleming Beach Park located west of the archaeological sites just discussed, where Honokahua Stream enters the ocean, Kirch found habitation indicators such as midden deposits (Kirch, 1973). Site 2873 may be associated with that complex.

<sup>6</sup> Xamanek Researches is currently monitoring earthmoving activities at the Coconut Grove project. Thus far we have found previously disturbed human skeletal materials, an historic crypt burial, and a probable precontact habitation deposit.

In June through July of 1997, Cultural Surveys Hawaii, Inc. undertook an inventory survey of c. 450 acres, identified as Project District 2, and located on the *mauka* side of Honoapi'ilani Highway, south of the present project area (Devereux, Folk and Hammatt, Draft February, 1998). Eight sites were identified—seven of which had been previously unrecorded. They consist of walls, boulder terraces and a boulder pavement, an overhang shelter cave, an historic reservoir, a road bridge, and a cemetery. The eighth is Site 1591, the Honokahua Historic District. None appeared to be precontact.

In November of 1997, Xamanek Researches conducted a reconnaissance survey for the proposed 11-acre Spa Resort Project at Kapalua. This parcel is bordered on the south by Honoapiilani Highway, on the west by the Pineapple Hill Subdivision, on the north by Simpson Way and on the east by Office Road (Fredericksen, November 17, 1997). The now-closed Pineapple Hill Restaurant is located in the center of the parcel. The building was built in 1915, and was the home of D. T. Fleming, manager of Honolua Plantation. The survey did not locate any significant material remains, except for the aforementioned building. Since the building has been severely damaged by termite activity, it was recommended that photo documentation of the structure be done, if the owner decided to demolish the building. While no other archaeological work was deemed necessary, on-call monitoring was recommended, in the event that any significant material cultural remains are encountered during construction activities.

#### **Fleming Beach Park**

Fleming Beach Park lies to the southwest of the present project area, and is a popular recreation park, maintained by the County of Maui. In February and March of 1994, Xamanek Researches undertook subsurface testing in the areas of the park destined for renovation work (Fredericksen, et. al., May 1994). Renovation plans called for the construction of a restroom facility on a sand dune area, and a connecting walkway path from the existing parking A total of 10 manual 1.0 x 2.0 meter test units were excavated, and ranged in depth from 1.2 to 2.2 meters in depth. A further 109 auger tests were placed at 2 meter intervals over the area, and ranged from 0.3 to 1.2 meters in depth. The manual testing was required as part of an agreement between the County of Maui Recreation Department, the Maui and Lana'i Islands Burial Council, and the State Historic Preservation Division. The testing was designed to assure a "buffer" zone of at least 1 meter between surface construction and possible cultural material and/or human remains that might lie below that depth.

At sometime in the past, in an effort to stabilize the sand dune, a cap of reddish brown clay had been placed on the loose sand. It ranges in thickness from 0.4 to 1.0 meter in tested locations. It most likely was obtained from the stream bed to the south. No indigenous cultural material was found *in situ*. However, one test unit contained some indigenous artifacts and shell midden, mixed with modern historic material. It appeared that this area of the park had been filled in the relatively recent past. It is not known from where the fill material originated. Finally, there were no human remains located in the tested areas (Fredericksen, et. al., May 1994).

On August 29, 1995, human remains were uncovered while workers were digging a sewer line. Xamanek Researches investigated and found the remains to be part of an *in situ* burial, contained within a basin-shaped pit. Given that the individual was buried in a flexed position, it was determined that the remains were that of a native Hawaiian, probably peripheral to the Site 1342A burial complex on the adjacent property (Fredericksen, et. al., February 1996, p. 4). Mitigation of this burial included sifting the disturbed sands to recover displaced skeletal remains, construction of a concrete enclosure and cement cap, and refilling the excavation.

## Settlement Patterns and Expectation of Findings

The precontact *ahupua`a* settlement pattern in this region of Maui, includes permanent and temporary habitation sites located along the coastal regions, and in the inland valleys, which included extensive *lo`i* systems. While the population of Honokahua in the 1830s was not estimated to be great, the precontact population was likely considerably larger. The extensive burial ground at Honokahua to the south of the present project area also suggests a sizable precontact population.

The kinds of sites that might be expected along the coast associated with habitation would be stone structures such as enclosures, midden deposits, and burial areas. It is also possible that part of the precontact encircling trail (Sites 2015, 2876) that was identified near the Honokahua Burial Site in 1986 and 1993 crossed the coastal area of the *ahupua`a* of Honalua as well.<sup>7</sup> In the valleys, sites such as stone walls, enclosures, pond fields and irrigation ditches associated with taro production might be expected. Temporary habitation sites could be identified by walled enclosures, fire and refuse pits, etc. They could also take the form of rock shelters, both in valleys and along the rocky coasts, wherever such geological features were present. Two *heiau* are known to have existed—one on the *makai* side of the road, and one inland in Honolua valley.

As far as the inland area between valleys is concerned, this region has been under pineapple cultivation for decades. Prior to that, cattle grazing occurred, and in some areas, modern golf courses now exist. While these areas were no doubt utilized in precontact times for gathering of forest products from temporary camps or habitation sites, and perhaps some dryland cultivation with similar temporary habitation areas, it would not be expected to find remaining evidence of this activity.

### Site expectations in project area

The kinds of precontact sites that might be expected along the highway corridor that runs along the coastal headlands covered by this inventory survey might be

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<sup>7</sup> In other areas of Maui the historic government (*aupuni*) road followed the *Alaloa* trail, which was built about 1516 by Kihapi`ilani after his conquest of the whole island. "It was paved with stones along much of its extend, hence it was referred to as the '*kipapa* (pavement) of Kihapi`ilani'. (Fleming, 1933, p. 7—in Handy and Handy, 1972, p. 489).

temporary camps or habitation areas associated with dryland cultivation or forest resource exploitation, and possibly remnants of the 17<sup>th</sup> century trail that once encircled the island. Human burials would not be expected, since the pattern in this region reveals that burials tend to be concentrated in the coastal sand dune/beach areas.

The kinds of post-contact sites that might be present would be features associated with ranching activities such as rock walls and animal pens.

## ARCHAEOLOGICAL METHODS

We conducted an archaeological inventory survey for the proposed Honoapi'ilani Highway improvements from Alaelae Point Honolulu Bay in late 1999 and early 2000. Field work was focused on STA 24 + 00 and STA 37 + 00 to 40 + 00 per SHPD requirements (Doc. No. 9908CD12). In addition, the 1.7 km. corridor was visually inspected during a pedestrian survey. Two test units were placed at the Curve #2 section of the project area. These were excavated by stratigraphic layers and all soil was screened through 1/8-inch hardware cloth. Written descriptive notes were kept in the field and photographs were taken with color film. A hand-held compass and metric survey tapes were utilized in the mapping process. Field personnel included Erik Fredericksen, project director, and Daniel Vicars, field archaeologist. Demaris and Walter Fredericksen were the senior advisors.

## ARCHAEOLOGICAL FINDINGS

One previously unrecorded site was found during the survey. This site consists of a dry-laid rock retaining wall associated with Honoapi'ilani Highway on the Curve #2 section. Two test units were excavated at the Curve #3 section in order to assess subsurface conditions in the area. Results from the archaeological investigations are briefly discussed below.

## Curve #2 (STA 24 + 00 to 28 + 00)

This portion of the project area contains thin rocky soils and lies between 70 and 110 feet AMSL. Vegetation observed in this part of the corridor is dominated by alien species that consists of ironwood trees, *koa haole* shrubs and various annual grasses and weeds. A few isolated *'ilima* (*Sida Fallox*) shrubs were noted beyond the right-of-way corridor.

The area at Curve #2 was covered with a pedestrian survey. Sweeps were parallel to Honoapi'ilani Highway with a spacing of c. 5 meters. Portions of the terrain appear to have been partially cleared in the past. An old, unimproved access road lies to the west of STA 24 + 00. Displaced, weathered bedrock cobbles and boulders were present in much of the roadside along Curve #2. It appears that these rocks were displaced by upslope earthmoving activities associated with nearby ranching and pineapple cultivation operations. Two barbed wired fences were also noted outside the right-of-way corridor.

Inspection of exposed sections of the ground surface revealed reddish brown (5 YR 5/3) silty clay soil. Weathered pieces of bedrock were present in much of the thin, rocky soil. In addition, portions of the study area covered by ironwood needles were inspected and contained similar, eroded silty clay soils. No significant material culture remains were found during this surface inspection and no subsurface testing was conducted in this section of the project corridor.

Makuleia Bay lies c. 50 meters northwest of Honoapi'ilani Highway and the survey corridor (Photo 1). The Department of Land and Natural Resources recently (c. 1998) constructed a concrete stairway that provides access to the relatively nearby sandy beach, known locally as Slaughterhouse Beach.<sup>8</sup> Makuleia Bay is part of the Makuleia-Honolua marine conservation area. An old culvert and much of the Site 4829 retaining wall are visible from the lower access stairs (Photos 2 & 3).

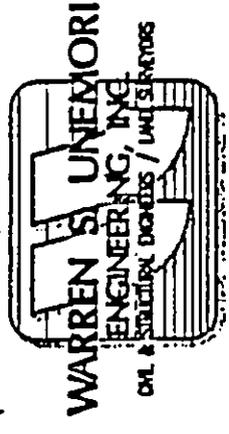
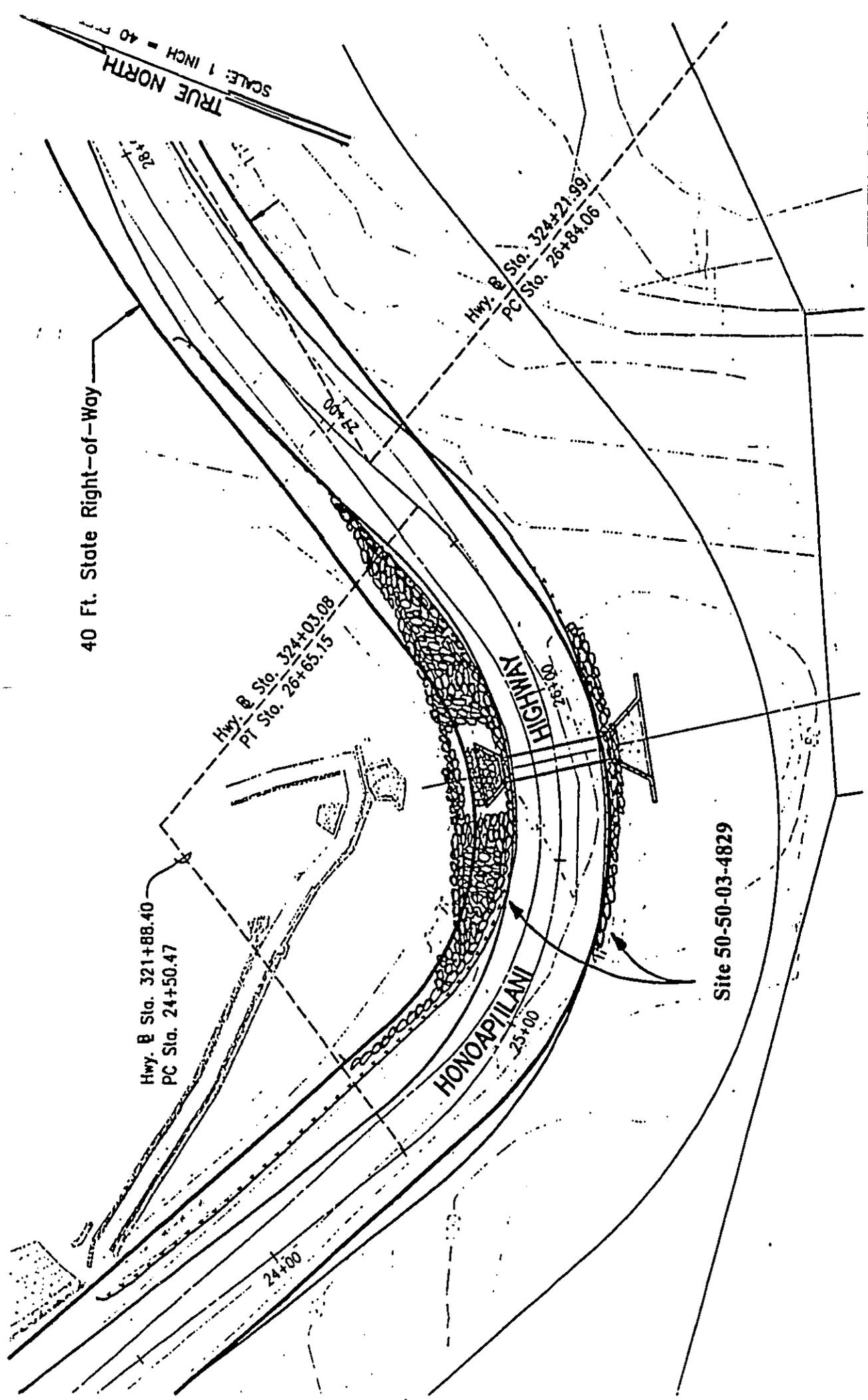
### Site 50-50-03-4829

This site consists of two dry-laid rock retaining walls, associated with Honapi'ilani Highway. It crosses an unnamed drainage area that flows into Makuleia Bay (Photo 4). While it was not possible to locate any records on the exact age of this site, informants provided an approximate date of construction.

Two individuals familiar with this area of Maui were contacted by Erik Frederickson in mid-February 2000. Both Mr. Wesley Nohara and Mr. Ian Swezey grew up in pineapple plantation camps in the 1950s and 1960s. Mr. Nohara, Manager of Honolua Plantation, Maui Land and Pineapple Company, believes that the Site 4829 retaining wall was constructed in the early 1940s. The Honolua store was formerly next to Honolua Bay until it was relocated to Kapalua in about 1910-1912. This store was

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<sup>8</sup> The beach is identified as Slaughterhouse because of its proximity to a former slaughterhouse facility that was located c. 0.5 km. to the north of Curve #2, on the *makai* side of the highway.



13 Figure 2 - Plan view of Site 50-50-03-4829. CURVE #2  
(STA. 24+00 TO STA. 28+00)  
 SCALE: 1 INCH = 40 FEET

serviced by an older road which apparently went further *mauka* (southeast) into the unnamed drainage gulch that the Curve #2 section crosses. Mr. Nohara also spoke with his father, John Nohara. The elder Nohara remembers walking across the old dirt road in the 1930s, when he was a boy, before it was realigned to its present highway location in the early 1940s. John Nohara also added that his father (Wesley Nohara's grandfather) was a stone mason and may well have been involved in the construction of the site. Mr. Ian Swezey, Kapalua Resort Maintenance Supervisor, Kapalua Land Company, also feels that the spanning wall was built in the first half of the last century. Both men believe that the site is in its original configuration and has not been extensively rebuilt since its construction.

This site is a good example of dry-laid stone masonry work from the 1940s. The *makai* (western) section of the retaining wall extends from about STA 24 + 50 to 26 + 80 (c. 70 meters), and is up to c. 6 meters in height. An old concrete culvert c. 18 inches (45.5 cm.) in diameter is located near STA 25 + 70. The exposed *mauka* (eastern) section of the retaining wall extends from about STA 25 + 40 to STA 26 + 10 (c. 24 meters) and is up to 1.8 meters high. Rocks utilized in the construction of Site 4829 typically range from c. 20 to 50 cm. in length by c. 10 to 25 cm. in height. Many of the feature's rocks have been shaped from the native basalt rock present on this part of Maui. No mortar was observed in the overall dry-laid structure. Site 4829 is in generally good overall condition. It is a rare surviving example of a dry-laid stone road crossing in this portion of West Maui.

### Curve #3 (STA 37 + 00 to 40 + 00)

This section of the study area ranges from c. 69 to 110 feet AMSL. It overlooks the nearby Honolua Bay (Photos 5 & 6). The area is covered by *koa haole* and several ironwood trees are located on the *mauka* (south) side of the corridor. In addition, other alien plants present included various grasses and annual weeds. The general area has been impacted in the past by various earthmoving activities likely associated with former pineapple cultivation.<sup>10</sup> Exposed weathered bedrock is present in several areas. Two old bulldozer cuts were noted on the northern and western portions of this section. The western track provided access for the placement of a Maui Electric Company Ltd. (MECO) power pole on a knoll just beyond the indicated grading limits.

Plans call for extensive earth moving work. Consequently, we excavated 2 test units in a relatively level section of the proposed road cut area, in order to investigate subsurface conditions (Figure 2). Results are briefly presented for each of these test units below.

#### Test Unit 1

The first test unit was placed near what first appeared to be a possible alignment. However subsequent inspection of this possible feature revealed that it was exposed

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<sup>10</sup> Old pineapple fields and a newer Kapalua development are located *mauka* (south) of the study area.

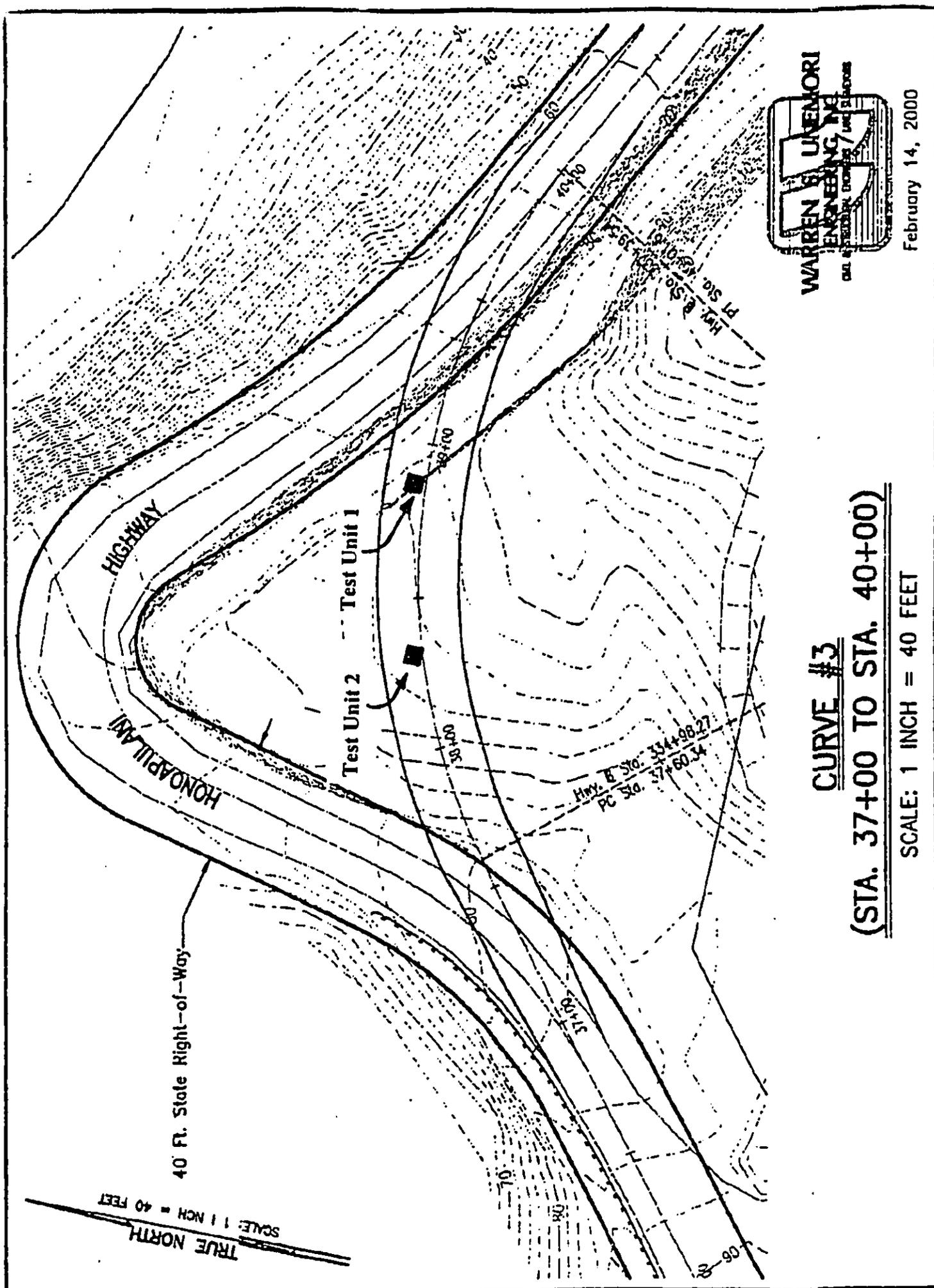
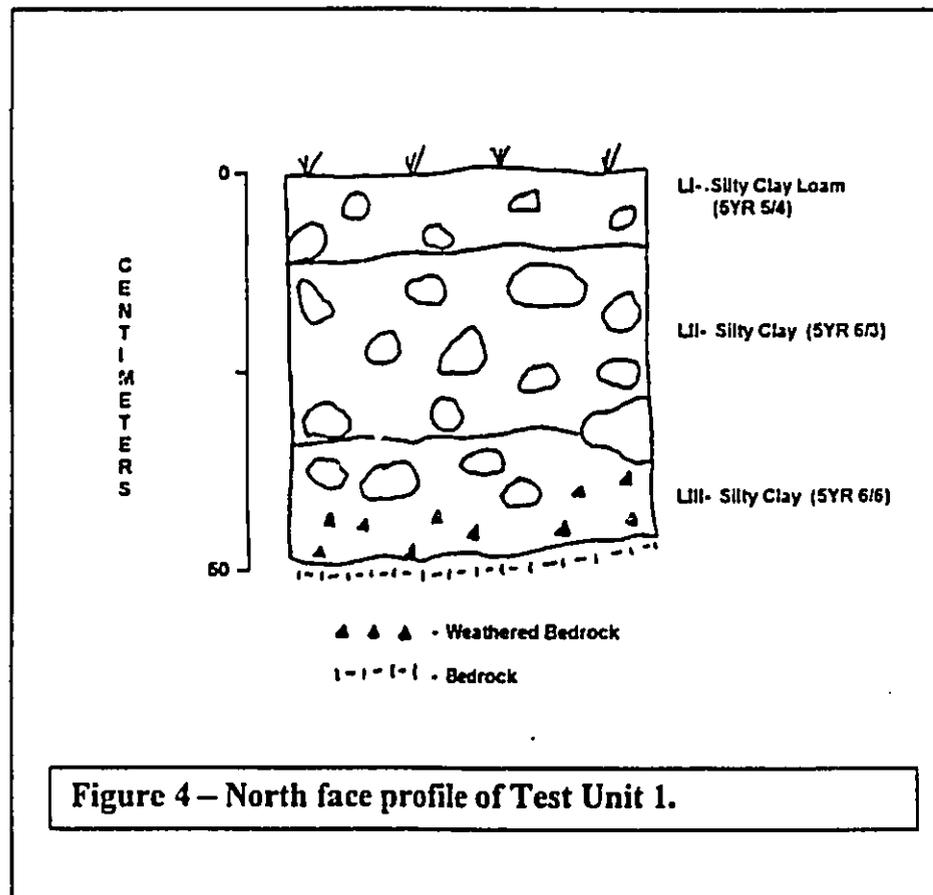


Figure 2 - Curve #3—showing locations of TUs 1 and 2.

weathered bedrock. Test Unit 1 dimensions were 50 by 50 cm. by a maximum of 50 cm. deep. Three rocky soil layers were present in this unit (Figure 4).

Layer I was up to 12 cm. thick and contained moderate amounts (c. 20% by volume) of subangular pebbles and cobbles. The reddish brown (5 YR 5/4) silty clay loam soil contained common roots and rootlets, and quantities of organic materials. No portable remains were found during the screening process.

Layer II (c. 10 to 34 cmbs) was composed of light reddish brown (5 YR 6/3) silty clay. Weathered subangular basalt pebbles and cobbles increased with depth. This rocky stratum was sterile. Layer III extended from c. 32 cmbs to the bottom of TU 1. This reddish yellow (5 YR 6/6) silty clay contained quantities (c. 75% by volume) of weathered basalt bedrock. Excavation was halted in weathered bedrock and no material culture remains were present.



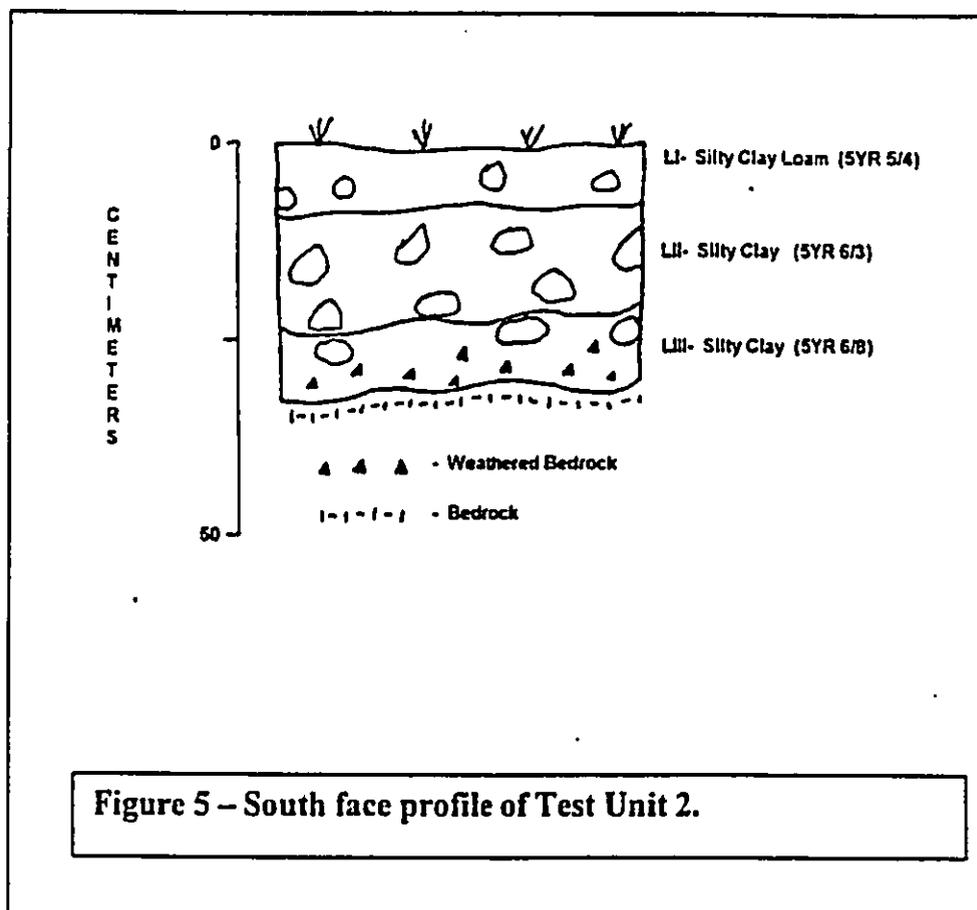
#### Test Unit 2

This second unit was located c. 15 cm. west of TU 1. It was excavated in a level area on a slight rise. This location overlooks a portion of Honolulu Bay. Test Unit 2 measured 50 by 50 cm. and was a maximum of 32 cm. deep. A total of 3 rocky soil layers were encountered before the unit was halted at bedrock (Figure 5).

The first stratum was up to 9 cm. thick and consisted of silty clay loam. This reddish brown (5 YR 5/4) soil (c. 20 % subangular basalt pebbles by volume) contained common woody roots and rootlets and moderate amounts of organic materials. A single 4.5 cm. long piece of monofilament fishing line was recovered from the upper 2 cm. of this stratum. No other cultural materials were found in Layer I.

Layer II (c. 8 to 23 cmbs) was made up of light reddish brown (5 YR 6/3) silty clay. Weathered pieces of bedrock were common and increased in abundance with depth. No portable remains were present in this portion of TU 2.

A third thin layer of weathered bedrock (Layer III) was encountered at c. 21 cmbs and extended to the bottom of TU 2. This reddish yellow (5 YR 6/8) silty clay was very rocky (c. 75% by volume). No material culture remains were present, and excavation was halted at bedrock at a maximum of 32 cmbs.



### Discussion

Portions of this section of the project area have been impacted by land altering activities associated with the previous construction of Honoapi'ilani Highway, pineapple cultivation, and the placement of a MECO power pole. However, subsurface testing revealed that previous disturbance activities did not impact the entire Curve #3 section. There were no significant material culture remains found during testing in this area.

## SUMMARY AND CONCLUSIONS

One previously unidentified site was located during the inventory survey for the proposed Honoapi'ilani Highway improvements from Alaelae Point to Honolua Bay. Site 4829 consists of dry-laid rock retaining walls associated with a drainage crossing for Honoapi'ilani Highway. This site lies in the Curve #2 section of the corridor. We did not find any indications of precontact activity in the area covered by this inventory survey.

### Site Significance Assessments

Site 4829 qualifies for significance under Criterion "D" of the State and Federal historic preservation guidelines. It is considered important for the information that it has yielded or is likely to yield. This crossing is a very good example of historic dry-laid masonry work associated with roadbuilding in the mid-20<sup>th</sup> century. As such, it qualifies for significance under Criterion "C" as well.

### Mitigation Recommendations

Site 4829 has aesthetic value and it is recommended that this crossing be incorporated in the proposed improvements for Honoapi'ilani Highway, if at all possible. The *makai* (eastern) section of this wall is particularly noticeable, and would aesthetically enhance any road improvement, if left in place.

# CORRECTION

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING

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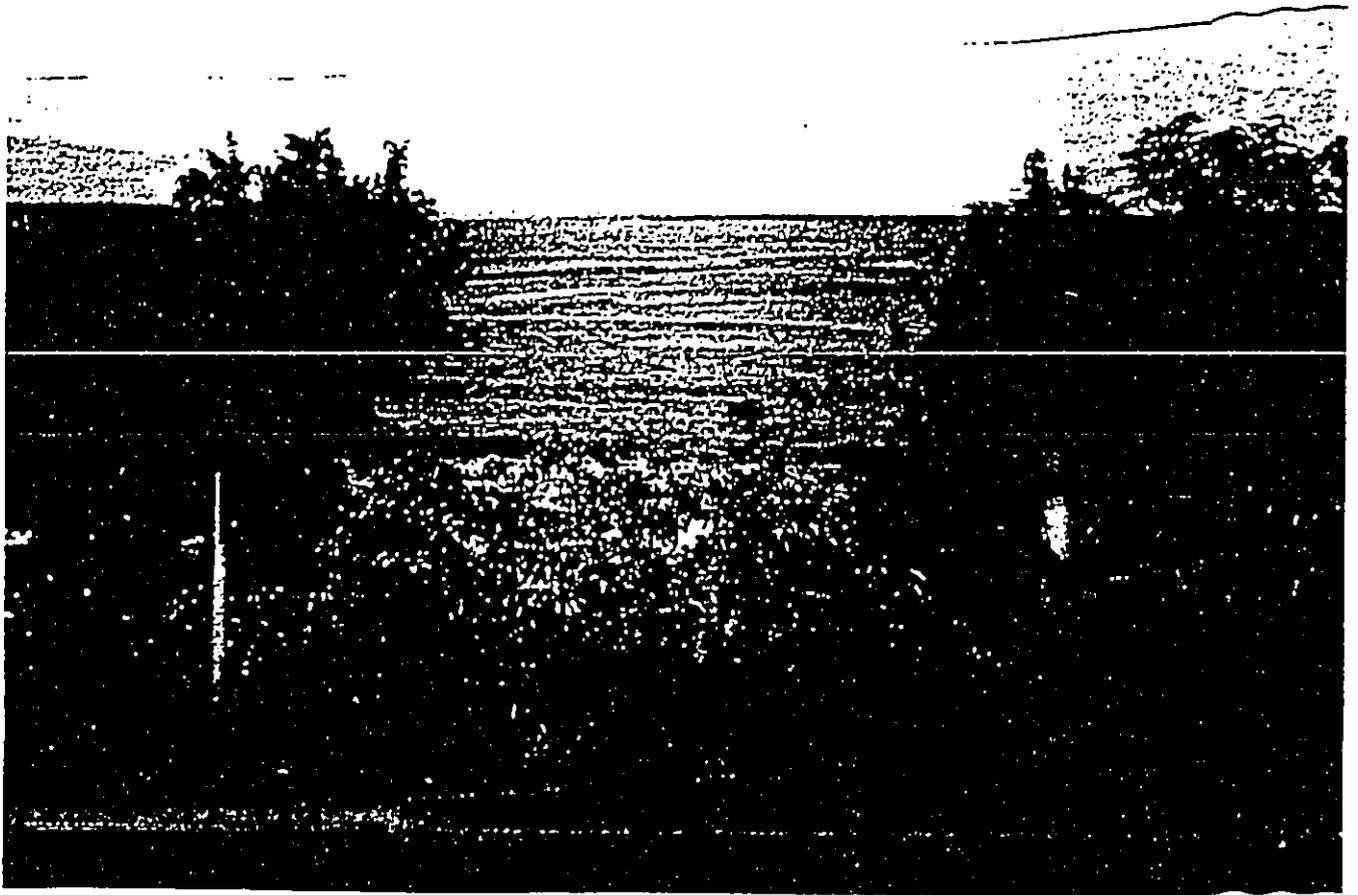
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**Photo 1 – View of Makuleia Bay across Lower Honoapi'ilani Highway. View to the northwest.**



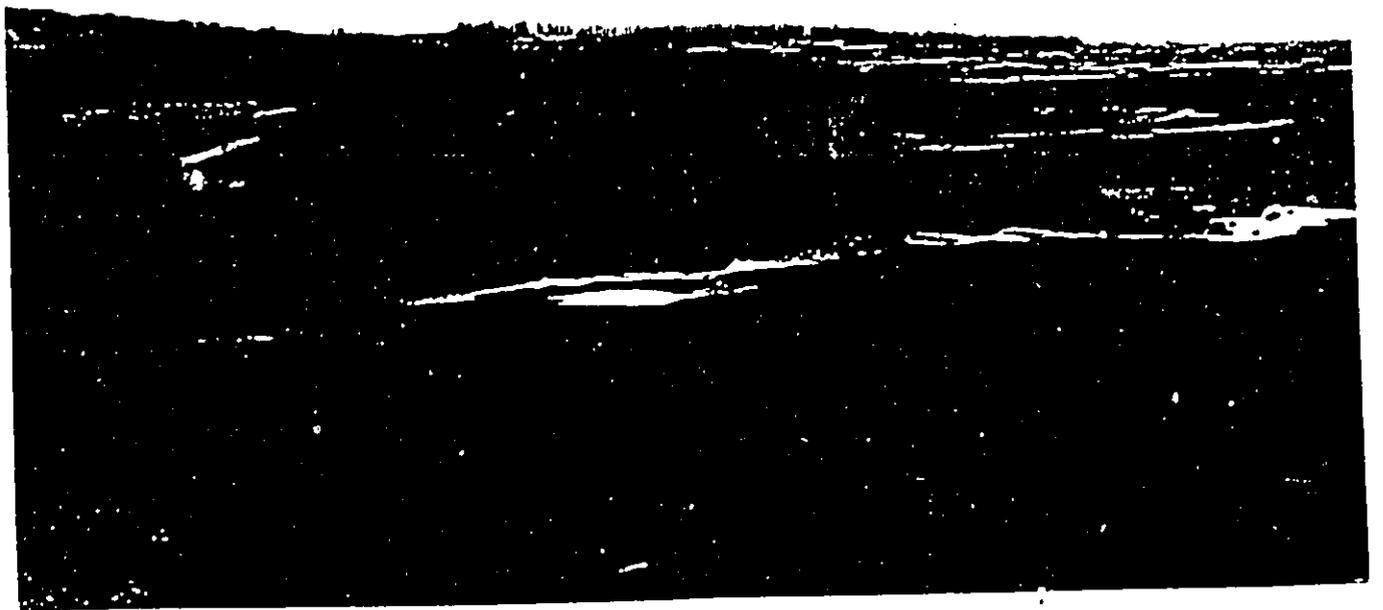
**Photo 2 – View of a portion of the Site 4829 road crossing. Photo taken from stairs—view to the southeast.**



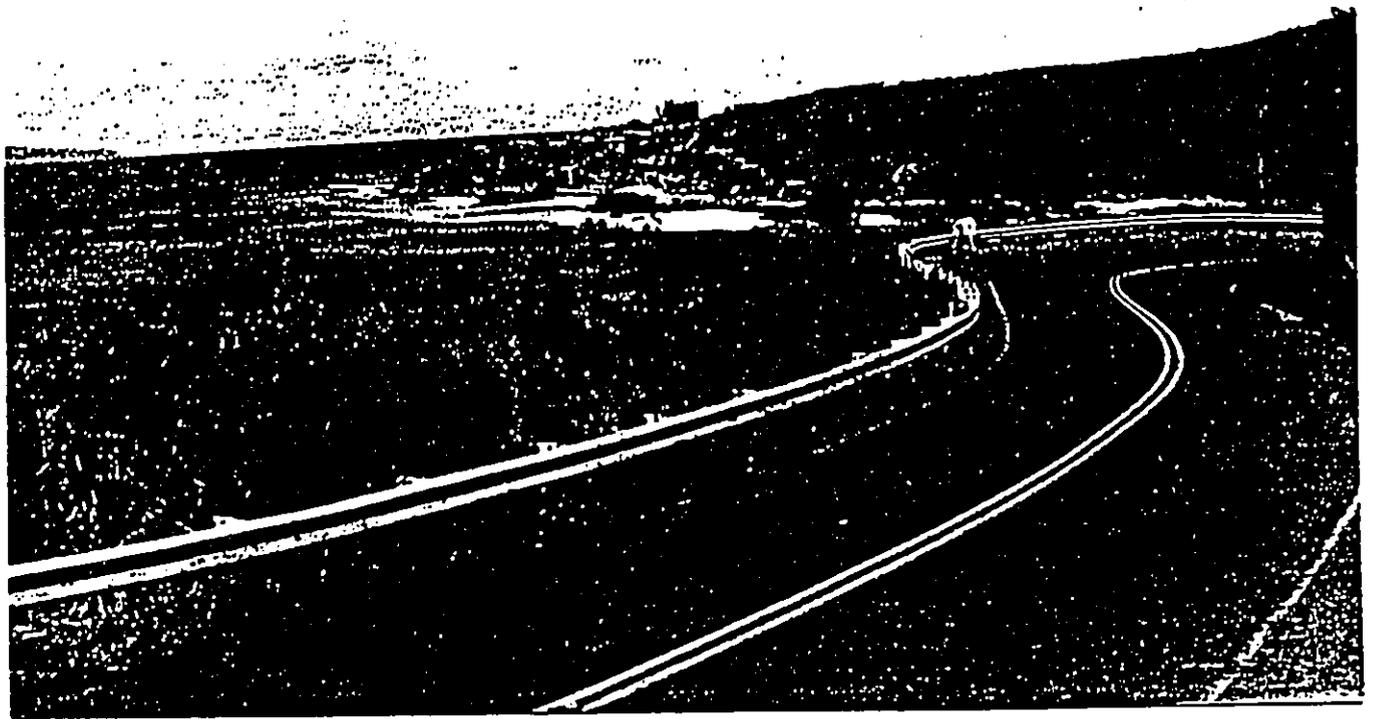
Photo 3 – View to the southeast of a portion of Site 4829.



**Photo 4 – Curve #2 section, including Site 4829 crossing. View to the east.**



**Photo 5 – Curve #3 section at center left of picture. Honolulu Bay in foreground, Kapalua in background. View to the southwest.**



**Photo 6 – View to the northeast of Honolulu Bay. Lower Honoapiʻilani Highway in foreground, Curve #3 at center right of picture.**

# ***Appendix B***

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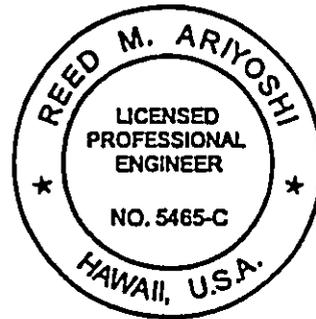
## ***Drainage Report***

**DRAINAGE REPORT FOR  
Honoapillani Highway Improvements  
(End of F.A.P. No RF-030-1(3) to  
Vicinity of Honolua Bay)**

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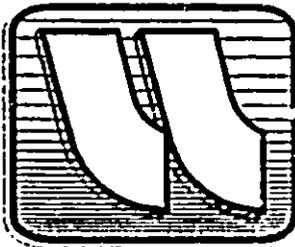
Honolua, Lahaina, Maui, Hawaii

Prepared For: Kapalua Land Company, Ltd.  
1000 Kapalua Drive  
Kapalua, Maui, Hawaii



*Reed M. Ariyoshi*

June, 1999



**WARREN S. UNEMORI ENGINEERING, INC.**  
Civil and Structural Engineers - Land Surveyors  
Wells Street Professional Center - Suite 403  
2145 Wells Street  
Wailuku, Maui, Hawaii 96793

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EXHIBITS:

1	Location Map
2	Soil Survey Map
3	Flood Insurance Rate Map

APPENDICES:

A	81"x59" CAP Drainage Culvert Hydrologic Calculations
B	24" CAP Drainage Culvert Hydrologic Calculations

**Drainage Report  
for  
Honoapiilani Highway Improvements  
(End of F.A.P. No. RF-030-1 (3) to Vicinity of Honolua Bay)  
Kapalua, Lahaina, Maui, Hawaii**

I. INTRODUCTION:

The purpose of this report is to evaluate the hydrology and hydraulics for the two (2) proposed culvert crossings along Honoapiilani Highway for the subject project.

II. PROPOSED PROJECT:

A. Site Location:

The project site is located in Kapalua, on the island Maui, in the state of Hawaii. The project site is bordered by the Plantation Estates I Subdivision on the southeast (mauka) side and mostly vacant land to the northwest (makai) side (See Exhibit 1). The project site encompasses an area of approximately 2.50 acres.

B. Project Description:

The proposed plan for the Honoapiilani Highway Improvements is to realign three (3) curves of the existing highway. A minimum pavement width of 10 feet will be maintained along the three curves of the highway with a 4-foot wide paved shoulder. Other related improvements will include, but not be limited to installation of guardrails and drainage culverts.

III. EXISTING CONDITIONS:

A. Topography and Soil Conditions:

A portion of the project site is presently Honoapiilani Highway and the remainder of the land is undeveloped and not being used for any particular purpose. The dominant natural vegetation on the undeveloped land in the drier areas include but is not limited to guava, lantana, Natal redtop, bermuda grass, koa, haole, Klu and molasses grass. Java Plum, Christmas Berry, Japanese Tea, hilo grass, ohia, kukui, koa, and ferns are dominant in the wetter areas.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, (August 1972)", the soil types that exist on the project site are Rough Broken Land (rRR), Rough Broken and Stony Land (rRS) and Stony Alluvial Land (rSM) (see Exhibit 2).

Rough Broken Land (rRR) consists of very steep land broken by numerous intermittent drainage channels. Rough broken land occurs in gulches and mountainsides and is characterized as having rapid runoff and geologic erosion is rapid.

Rough Broken and Stony Land (rRS) consists of very steep, stony land and is characterized as having rapid runoff and geologic erosion is rapid.

Stony alluvial land (rSM) consists of stones, boulders, and soil deposited by streams along the bottoms of gulches.

B. Flood and Tsunami Zone:

According to Panel Numbers 150003 0137 B revised June 1, 1981, 150003 0138 B revised June 1, 1981 and 150003 0139 B revised June 1, 1981 of the Flood

Insurance Rate Maps, prepared by the U.S. Federal Emergency Management Agency, Federal Insurance Administration, the project site is situated within Flood Zone C, which is subjected to minimal flooding (See Exhibit 3).

### III. DRAINAGE:

#### A. 81"x59" CAP Drainage Culvert:

The first drainage improvement consists of an 81"x59" corrugated aluminum pipe arch drainage culvert with reinforced concrete inlet and outlet structures at Honoapiilani Highway baseline station 25+80 ±. This drainage culvert was designed to accommodate a 100 year recurrence interval-24 hour duration storm (See Appendix A). The 81"x59" aluminum pipe arch will replace two (2) existing 24" drainage culverts, which do not have the capacity to accommodate the design storm.

#### B. 24" CAP Drainage Culvert:

The second drainage improvement consists of an underground drainage system which crosses Honoapiilani Highway at baseline station 46+94 ±. The drainage system consists of a new grated inlet catch basin, drain manholes, 24" CAP drainline and a GRP outlet structure. This drainage system was designed to accommodate a 50 year recurrence interval-1 hour duration storm (See Appendix B). The new drainage system will be installed at the existing low point of the highway where surface runoff currently ponds at the low point and then sheet flows across the highway into an existing natural drainageway. The surface runoff at the low point of the highway will be intercepted and conveyed by means of a new underground drainage system to outlet into the previously mentioned existing natural drainageway where the surface runoff is currently being discharged.

C. Conclusion:

The proposed drainage improvements for the Honoapiilani Highway Improvements project will help to convey offsite runoff across the highway. Two existing undersized drainage culverts will be replaced with a larger culvert sized to accommodate a 100 year recurrence interval-24 hour duration storm and a new drainage system will be installed at a low point in the existing roadway where surface runoff currently ponds and then sheet flows across the road into an existing natural drainageway. The new drainage system will intercept and convey the surface runoff to outlet into the previously mentioned natural drainageway. Therefore, it is our professional opinion that the proposed improvements will help mitigate the flooding problem that currently exists along the highway and will not have an adverse effect on the adjacent downstream properties.

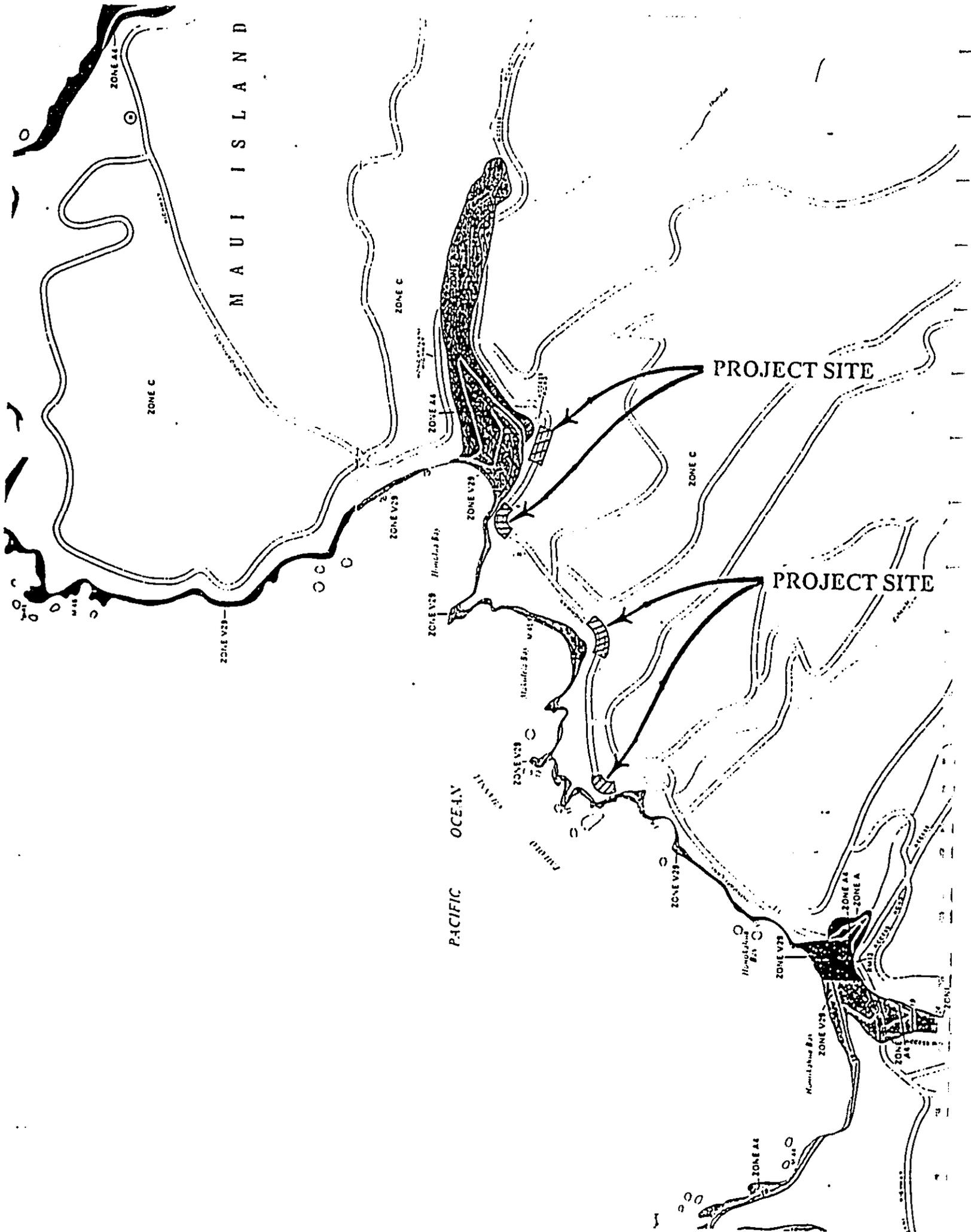
Report By: Eric Nakagawa Reviewed by: Reed M. Ariyoshi  
Eric A. Nakagawa Reed M. Ariyoshi, P.E.

**EXHIBITS**

- 1. Location Map**
- 2. Soil Survey Map**
- 3. Flood Insurance Rate Map**







**EXHIBIT 3**  
**FLOOD INSURANCE ZONES**

TRUE NORTH

SCALE: 1 IN. = 1000 FT.

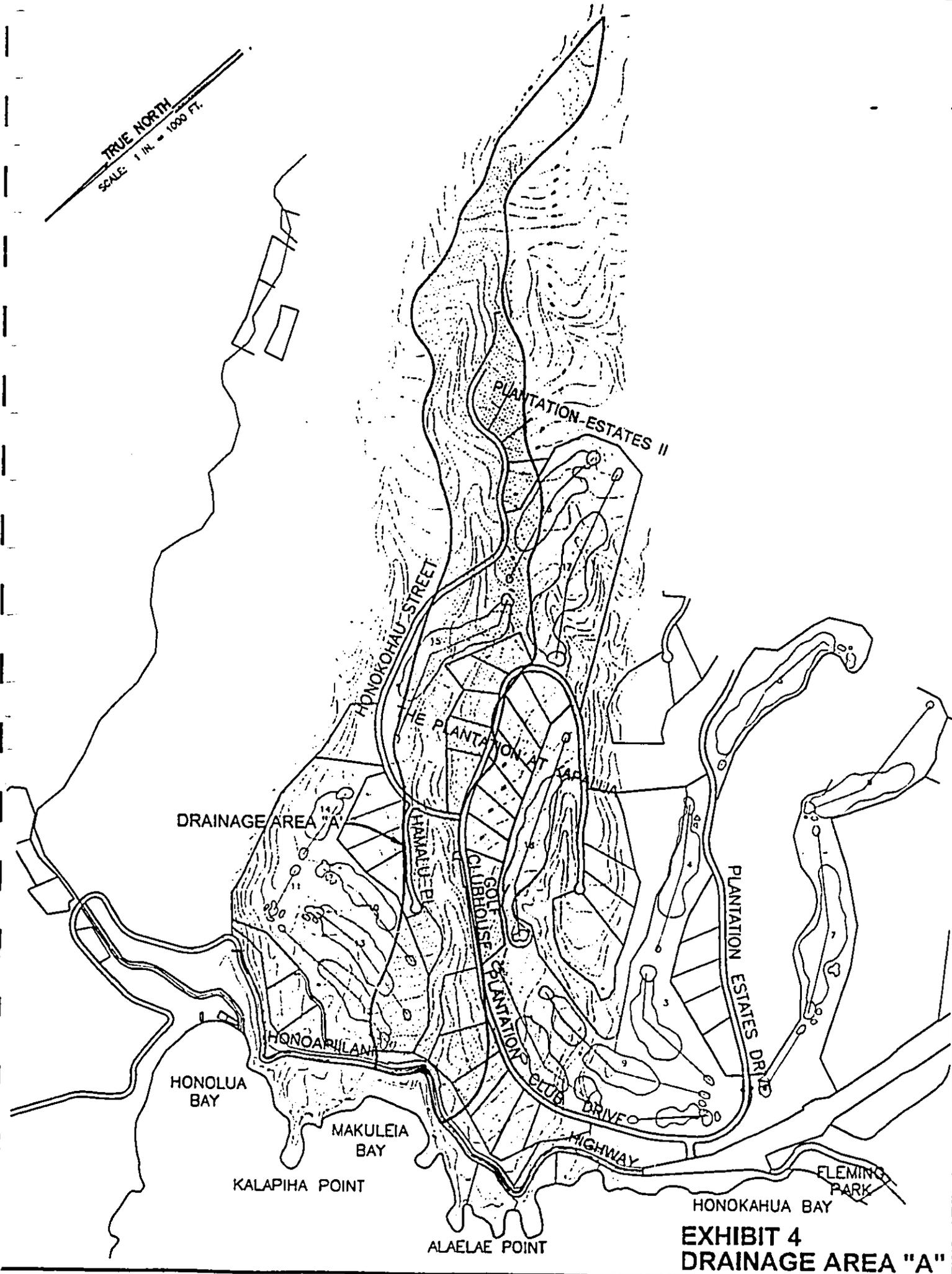


EXHIBIT 4  
DRAINAGE AREA "A"

from 4/10/1974 to 4/10/1974

APPENDIX A

**81"x59" CAP Drainage Culvert Hydrologic Calculations**

HYDROLOGIC REPORT FOR  
Honoapiilani Highway Improvements  
24 HOUR S. C. S. HYDROGRAPH

BASIN IDENTIFICATION                      Drainage Area "A"  
BASIN DISCHARGES INTO                      81"x59" Drainage Culvert

BASIN AREA                                    =        135.00    ACRES  
BASIN CURVE NUMBER                        =        68.00  
24-HOUR PRECIPITATION                      =        13.00    INCHES  
24-HOUR RUNOFF                                =        8.67    INCHES  
AVERAGE BASIN SLOPE                        =        8.94    %  
HYDRAULIC LENGTH                            =        9,000.00    FEET  
BASIN LAG , (Tc)                              =        0.87    HOURS ,        1.45    HOURS  
UNITPEAK COEFFICIENT                        =        484.00  
RAINFALL DISTRIBUTION                        =        TYPE I

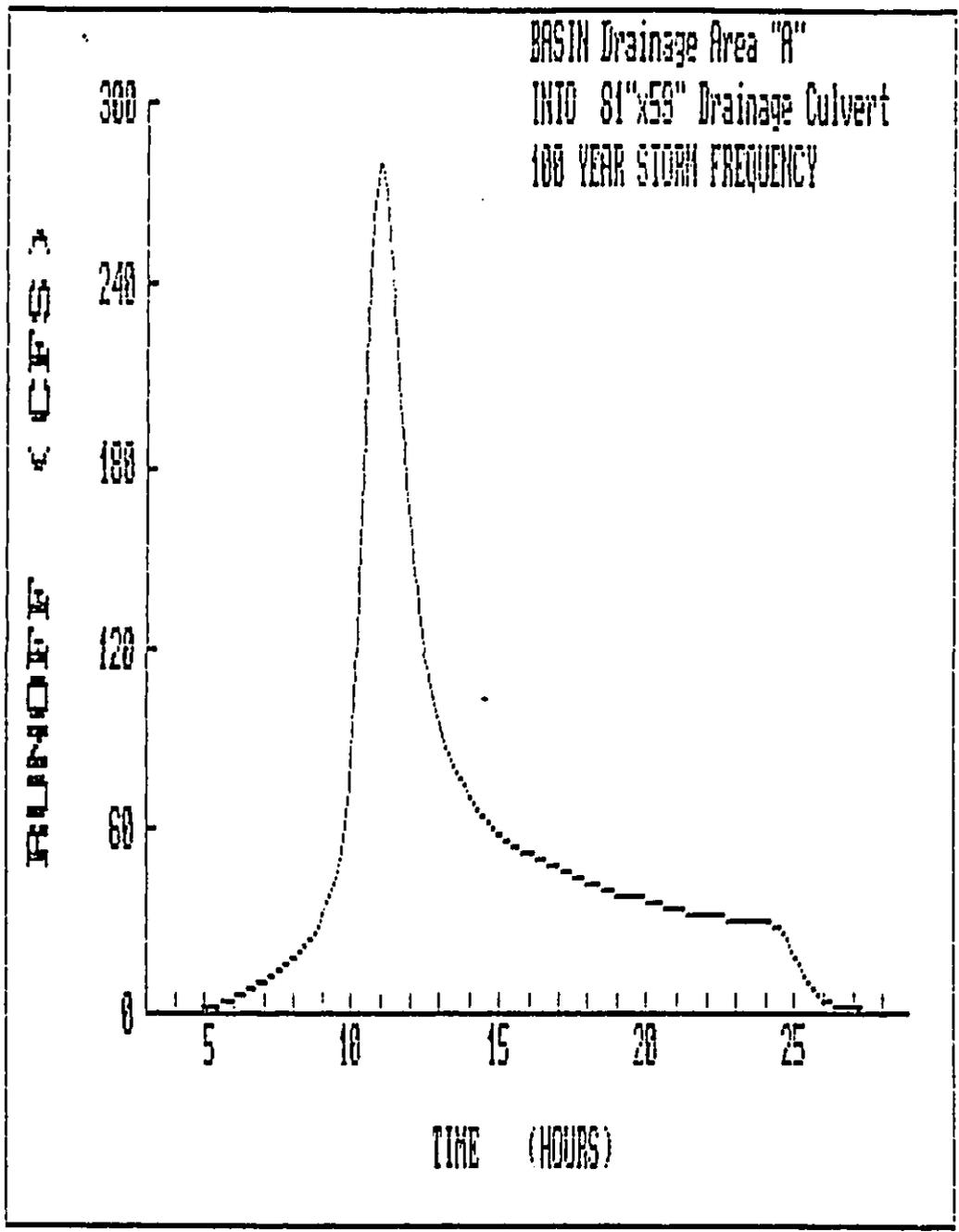
HYDROGRAPH RUNOFF VALUES \*  
100 YEAR STORM FREQUENCY

TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.	TIME HOUR	RUNOFF C.F.S.
3.33	0.0	3.42	0.0	3.50	0.0	3.58	0.0
3.67	0.0	3.75	0.0	3.83	0.0	3.92	0.0
4.00	0.0	4.08	0.0	4.17	0.0	4.25	0.0
4.33	0.0	4.42	0.0	4.50	0.1	4.58	0.1
4.67	0.2	4.75	0.3	4.83	0.4	4.92	0.5
5.00	0.7	5.08	0.9	5.17	1.1	5.25	1.4
5.33	1.6	5.42	1.9	5.50	2.2	5.58	2.5
5.67	2.9	5.75	3.3	5.83	3.6	5.92	4.0
6.00	4.5	6.08	4.9	6.17	5.3	6.25	5.8
6.33	6.2	6.42	6.7	6.50	7.2	6.58	7.6
6.67	8.1	6.75	8.6	6.83	9.1	6.92	9.5
7.00	10.0	7.08	10.6	7.17	11.1	7.25	11.6
7.33	12.2	7.42	12.8	7.50	13.4	7.58	14.1
7.67	14.8	7.75	15.5	7.83	16.2	7.92	17.0
8.00	17.8	8.08	18.5	8.17	19.4	8.25	20.3
8.33	21.2	8.42	22.2	8.50	23.2	8.58	24.3
8.67	25.4	8.75	26.7	8.83	28.0	8.92	29.6
9.00	31.2	9.08	33.1	9.17	35.1	9.25	37.3
9.33	39.9	9.42	42.5	9.50	45.6	9.58	48.8
9.67	53.2	9.75	58.4	9.83	65.0	9.92	75.0
10.00	85.1	10.08	102.8	10.17	120.9	10.25	142.9
10.33	167.1	10.42	191.1	10.50	214.8	10.58	238.2
10.67	252.9	10.75	267.6	10.83	274.4	10.92	278.2
11.00	278.4	11.08	273.4	11.17	267.8	11.25	256.7
11.33	245.7	11.42	233.0	11.50	219.8	11.58	207.4

HYDROLOGIC REPORT FOR  
 Honoapiʻilani Highway Improvements

HYDROGRAPH RUNOFF VALUES  
 100 YEAR STORM FREQUENCY (CONT'D)

TIME HOUR	RUNOFF C.F.S.						
11.67	195.8	11.75	184.6	11.83	174.9	11.92	165.2
12.00	156.9	12.08	148.7	12.17	141.4	12.25	134.6
12.33	128.2	12.42	122.8	12.50	117.4	12.58	112.9
12.67	108.5	12.75	104.7	12.83	101.1	12.92	97.7
13.00	94.8	13.08	91.9	13.17	89.5	13.25	87.1
13.33	84.9	13.42	82.8	13.50	80.9	13.58	79.2
13.67	77.5	13.75	76.0	13.83	74.4	13.92	73.0
14.00	71.7	14.08	70.3	14.17	69.0	14.25	67.8
14.33	66.5	14.42	65.3	14.50	64.2	14.58	63.1
14.67	62.1	14.75	61.1	14.83	60.2	14.92	59.3
15.00	58.5	15.08	57.8	15.17	57.1	15.25	56.4
15.33	55.8	15.42	55.2	15.50	54.6	15.58	54.1
15.67	53.7	15.75	53.2	15.83	52.9	15.92	52.5
16.00	52.1	16.08	51.8	16.17	51.5	16.25	51.2
16.33	50.8	16.42	50.5	16.50	50.1	16.58	49.7
16.67	49.3	16.75	48.9	16.83	48.5	16.92	48.1
17.00	47.6	17.08	47.2	17.17	46.7	17.25	46.3
17.33	45.8	17.42	45.4	17.50	45.0	17.58	44.6
17.67	44.2	17.75	43.9	17.83	43.5	17.92	43.2
18.00	42.9	18.08	42.6	18.17	42.3	18.25	42.0
18.33	41.7	18.42	41.3	18.50	41.0	18.58	40.6
18.67	40.2	18.75	39.8	18.83	39.5	18.92	39.1
19.00	38.8	19.08	38.5	19.17	38.3	19.25	38.1
19.33	38.0	19.42	37.8	19.50	37.7	19.58	37.7
19.67	37.6	19.75	37.5	19.83	37.3	19.92	37.2
20.00	37.0	20.08	36.7	20.17	36.5	20.25	36.2
20.33	35.9	20.42	35.5	20.50	35.2	20.58	34.9
20.67	34.6	20.75	34.3	20.83	34.1	20.92	33.8
21.00	33.6	21.08	33.5	21.17	33.3	21.25	33.2
21.33	33.1	21.42	33.0	21.50	32.9	21.58	32.8
21.67	32.7	21.75	32.7	21.83	32.6	21.92	32.5
22.00	32.4	22.08	32.3	22.17	32.2	22.25	32.0
22.33	31.8	22.42	31.6	22.50	31.4	22.58	31.2
22.67	31.0	22.75	30.8	22.83	30.6	22.92	30.4
23.00	30.3	23.08	30.1	23.17	30.0	23.25	29.9



APPENDIX B

**24" CAP Drainage Culvert Hydrologic Calculations**

BY: ean  
DATE: June 29, 1999

HYDROLOGIC STUDY  
FOR  
HONOAPIILANI HIGHWAY IMPROVEMENTS

Kapalua, Lahaina, Maui, Hawaii

Drainage Area "B"

#####  
: :  
: RECURRENCE INTERVAL: 50 years HYDRAULIC LENGTH: 510.0 ft. :  
: ONE-HOUR RAINFALL: 3.00 inches ELEV'N. DIFFERENTIAL: 144.90 ft. :  
: : HYDRAULIC SLOPE: 0.284 ft./ft.:  
: WEIGHTED RUNOFF :  
: COEFFICIENT, C: 0.31 TIME OF CONCENTRATION: 8.0 min. :  
: INTENSITY, I: 6.80 inches :  
: AREA, A: 1.30 acres SUB BASINS CONSIDERED: 1 :  
: : :  
: Q = C\* I \* A = 2.74 cfs :  
: : :  
: COMMENTS: :  
: : :  
: : :  
#####

Page 2 of 2  
W.S. UNEMORI ENGINEERING, INC.  
2145 Wells Street Suite 4C.  
Wailuku, Maui, Hawaii 96791

BY: ean  
DATE: June 29, 1999

## HONOAPIILANI HIGHWAY IMPROVEMENTS [continued]

### TABULATION OF RUNOFF COEFFICIENTS & AREAS:

#### SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium .....	0.07	
RELIEF:	Hilly (15-25%) .....	0.06	>>> COMPOSITE C = 0.3
VEGETAL COVER:	Good (10-50%) .....	0.03	>>> AREA = 1.300 AC
DEVELOPMENT:	Agricultural .....	0.15	