JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

September 24, 1999 AIC :30

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control (OEQC)
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813-2437

Dear Ms. Salmonson:

RE: Final Environmental Assessment (EA) for the Kapalua Site 19 Single-Family Residential Project at TMK: 4-2-04:Por. 24, Kapalua, Maui, Hawaii (EA 990003)

The Maui Planning Department (Department), as the accepting authority, is transmitting for publication in the upcoming OEQC Bulletin, the Final Environmental Assessment for the Kapalua Site 19 Single-Family Subdivision, in which a Finding of No Significant Impact (FONSI) has been determined. The applicant for the project is Kapalua Land Company and its contact is Mr. Bob McNatt.

A description of the proposed action is attached to the OEQC Bulletin Publication Form and will also be sent by the applicant by electronic mail to the OEQC in a WordPerfect format. In addition, the Department has enclosed four (4) copies of the Draft Environmental Assessment Report (prepared by the applicant).

Thank you for your cooperation. If additional clarification is required, please contact Ms. Ann Cua, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:ATC:cmb
Enclosures
c: Glenn Tadaki, Munekiyo, Arakawa & Hiraga, Inc.
Bob McNatt, Kapalua Land Company, Ltd.
Clayton Yoshida, AICP, Deputy Director of Planning
Ann Cua, Staff Planner
Project File (w/Enclosure)
General File
(s:\all\ann\kapsit19.fea)

1999-10-08-MA-FEA-

Final Environmental Assessment

KAPALUA SITE 19

Prepared for:

Kapalua

September 1999

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Final Environmental Assessment

KAPALUA SITE 19

Prepared for:

Kapalua

September 1999

MUNEKIYO, ARAKAWA & HIRAGA, INC.

CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

kapalua/site19/fearept.001

Preface

The applicant, Kapalua Land Company, Ltd., is proposing to develop a residential subdivision in Kapalua, Maui, Hawaii. Identified by TMK 4-2-04:por. 24, the proposed 18.973-acre development will consist of 31 lots ranging in size from 19,009 to 25,374 square feet.

A portion of the subject property is presently designated "Single-Family Residential" by the West Maui Community Plan. An application for a Community Plan Amendment will be filed to redesignate the property to "Project District 1". Pursuant to Chapter 343, Hawaii Revised Statutes (HRS), and Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment has been prepared as required to document the project's technical characteristics, environmental impacts and alternatives, and advances findings and conclusions relative to the significance of the project.

Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROJECT LOCATION, EXISTING USE, AND LAND OWNERSHIP

The applicant, Kapalua Land Company, Ltd., proposes to develop a single-family subdivision consisting of 31 homesites and related improvements in Kapalua, Maui, Hawaii. See Figure 1.

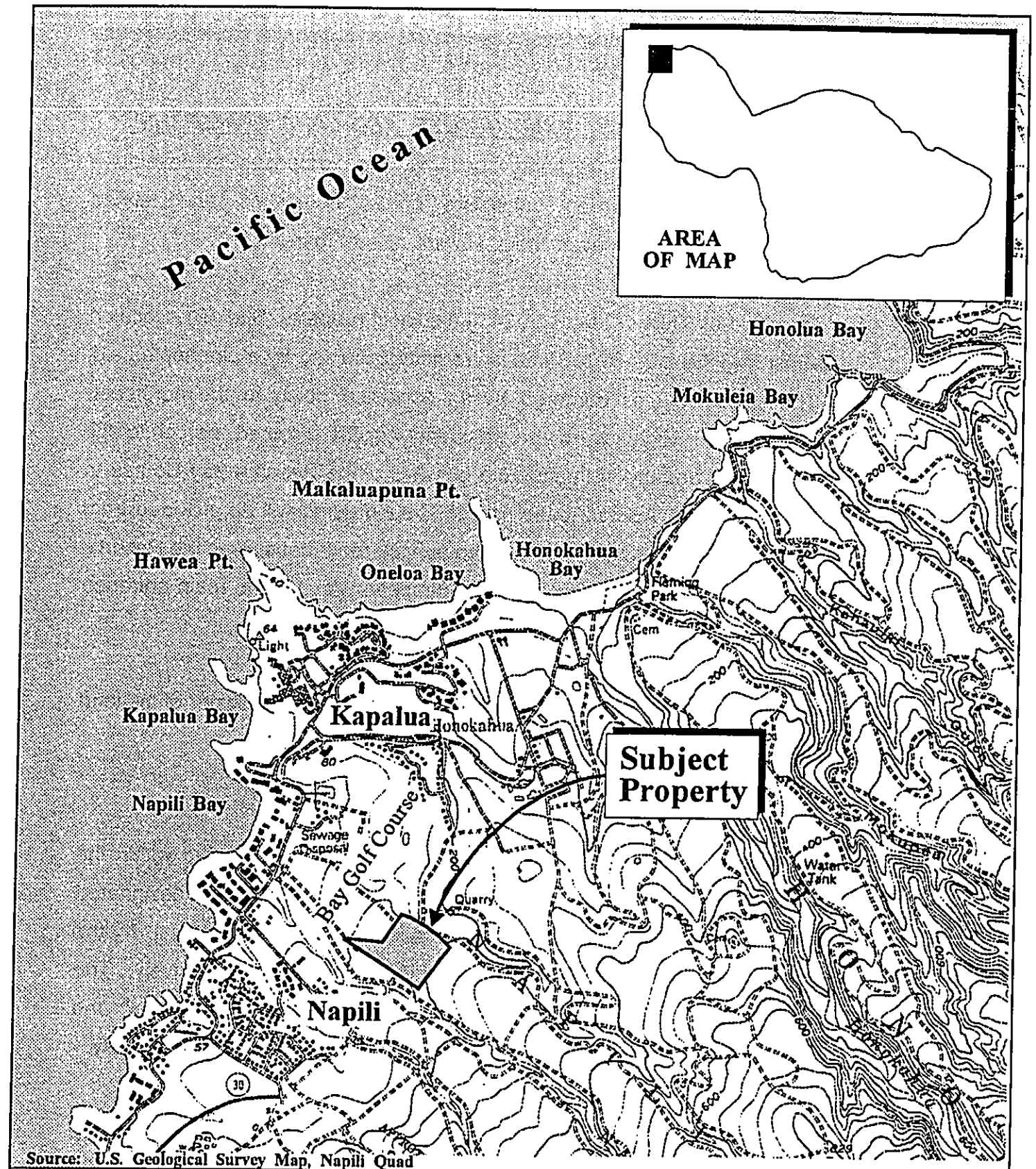
Identified by TMK 4-2-04: por. 24, the subject property (Site 19) is located within the Kapalua Resort and is currently occupied by a pineapple field. The project site is bordered by an unnamed gulch to the northeast, Honoapiilani Highway to the southeast, a State-owned parcel to the southwest, and the 12th and 13th fairways of the Resort's Bay Course to the northwest. Access to the proposed subdivision will be provided from Honoapiilani Highway by an existing service road that serves the Resort's Pineapple Hill subdivision and from Simpson Way via the main entrance to the Pineapple Hill Subdivision.

Maui Land & Pineapple Company, Inc. is the fee-simple owner of the land underlying the subject property.

B. BACKGROUND

The subject property consists of 18.973 acres and is located within the State "Urban" district. Of this land area, 15.691 acres are designated "Project District 1 (Kapalua)" and "Lahaina Project District No. 1" by the West Maui Community Plan and Maui County zoning, respectively. The remaining 3.282 acres are designated "Single-Family Residential" and "Agricultural" by the Community Plan and County zoning, respectively.

The Project District 1 (Kapalua) designation for the Kapalua Resort was established in 1983 by the Lahaina Community Plan through Ordinance No. 1354, while Lahaina Project District No. 1 zoning was granted in 1989



Source: U.S. Geological Survey Map, Napili Quad

Figure 1

Kapalua Site 19

Regional Location Map

0 500 1000 2000

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.

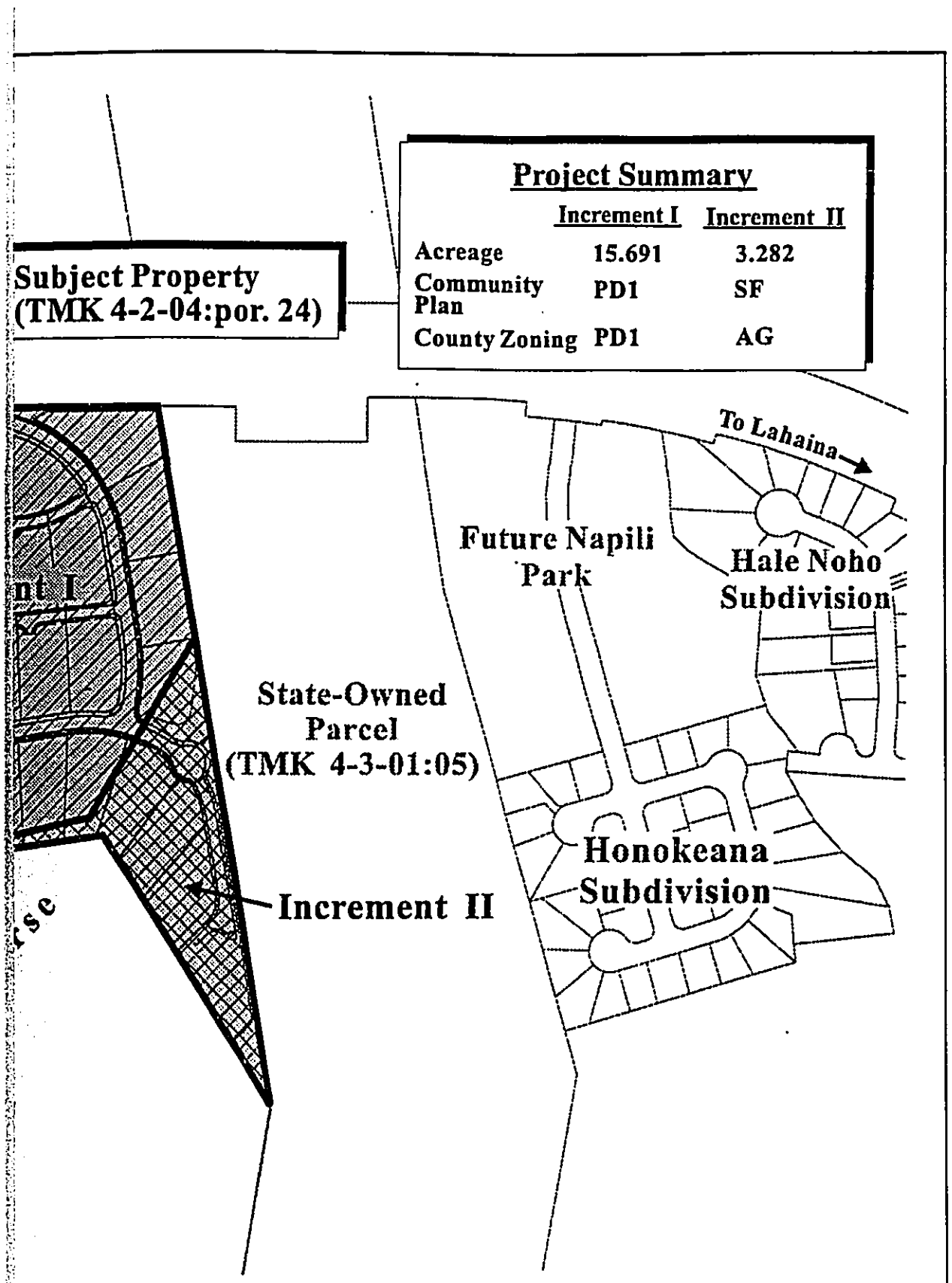
through Ordinance No. 1844. The purpose of this project district is to establish a mixture of visitor oriented facilities, including hotel accommodations, single- and multi-family residences, and supporting commercial services within an open space setting organized around a central village core.

C. ***REGULATORY REQUIREMENTS***

The proposed project will be developed in two (2) increments. See Figure 2. The lands currently zoned "Project District 1" will comprise Increment 1, while the lands presently zoned "Agricultural" will constitute Increment 2. Applications for a Community Plan Amendment, Change in Zoning, and Project District Phase I and Phase II approvals will be prepared for the 3.282 acres that are zoned for "Agricultural" use. An application for Project District Phase II approval will also be prepared for the 15.691 acres that are zoned "Project District 1". Since the subject property is within the limits of the Special Management Area (SMA), an application for a SMA Use Permit will be prepared to address the development of both increments of the proposed subdivision. Since the proposed project involves an amendment to a Community Plan independent of the County's Ten Year Update process, an Environmental Assessment has been prepared as required by Chapter 343, HRS, and Title 11, Chapter 200, Administrative Rules of the State Department of Health.

D. ***REASONS JUSTIFYING THE REQUEST***

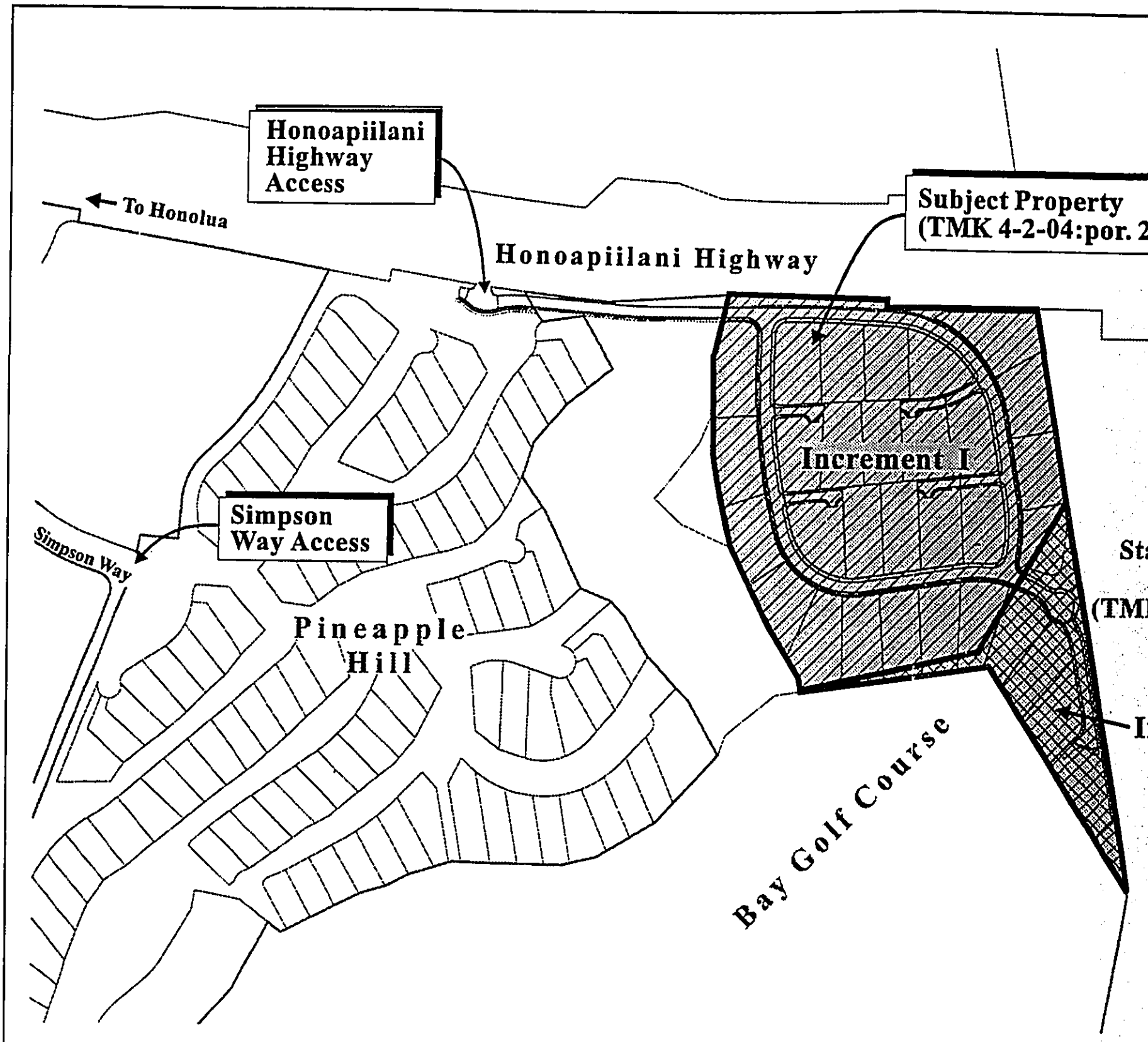
To establish consistency with the 15.691 acres that are currently designated "Project District 1", as well as provide uniformity for the project site's entire 18.973 acres, the applicant is seeking a Community Plan Amendment from "Single Family Residential" to "Project District 1" and a Change in Zoning from "Agricultural" to "Lahaina Project District 1" for the



Site 19
ıtion Map

0 75 150 300

MUNEKIYO, ARAKAWA & HIRAGA, INC.



Source: Warren S. Unemori Engineering, Inc.

Figure 2

Kapalua Site 19
Project Location Map

Prepared for: Kapalua Land Company, Ltd.

3.282 acre portion of the site.

As previously noted, the West Maui Community Plan already designates 3.282 acres of the project site for "Single-Family Residential" use, while the remaining 15.691 acres are designated for "Project District 1" use by both the Community Plan and County zoning. The granting of the Community Plan Amendment and the Change in Zoning requests for the 3.282 acres will establish the necessary Community Plan and zoning consistency for the development of the proposed subdivision. The proposed Community Plan Amendment and Change in Zoning requests are in concert with the land uses permitted for the remaining 15.691 acres of the project site, as well as the existing and future urban uses within and in proximity of the Kapalua Resort.

The project site is situated within a region of existing and future urban development which includes the Kapalua Resort as well as the nearby community of Napili, approximately 0.2 mile to the southwest of the site. Within the vicinity of the proposed subdivision, existing residential development in the Kapalua Resort includes Pineapple Hill, a 99-lot single family subdivision that is located to the northeast of the project site and the Golf Villas, a residential condominium consisting of 186 one- and two-bedroom units that borders Pineapple Hill to the northwest. In Napili, beyond the undeveloped State-owned parcel to the southwest of the project site, lie numerous single-family residences and the 174-unit Napilihau Planned Unit Development, as well as two (2) single-family subdivisions, the 38-lot Honokeana Subdivision and the 71-lot Hale Noho Subdivision.

In addition, future urban land uses are defined by Project District 2 (Kapalua-Mauka), a project district consisting of approximately 450 acres

situated to the southeast of the project site adjacent to Honoapiilani Highway. Within the context of the Kapalua Resort, this project district is intended to provide residential, commercial, open space, park, and school uses, as well as a mix of recreational uses and facilities such as a golf course, clubhouse, pro shop, tennis courts, swimming pool, restaurants and bars, and other related recreational amenities and commercial services. Residential development within this project district provides for a mixture of 750 single- and multi-family residential units that are integrated with and complementary to the project district's recreational uses.

In this regard, the proposed development provides an area for single-family residential housing that is in consonance with existing and future urban land uses in the vicinity of the project site.

The proposed development will provide short- and long-term benefits for the island's economy. On a short-term basis, the proposed development will provide construction employment and support construction-related services and suppliers. Upon completion, residents of the subdivision will contribute to the long-term support of the economy through their contributions of property taxes and purchases of goods and services from local merchants and service providers.

E. ***PROPOSED DEVELOPMENT***

The applicant proposes to subdivide the subject property into 31 single-family homesites. Lot sizes will range from 19,009 to 25,374 square feet. The homes which will be constructed later by lot purchasers will be primarily utilized as second homes or rented on a seasonal basis.

As previously noted, the proposed project will be developed in two (2) increments. See Figure 3 and Figure 4. Increment 1 will include the creation of 27 buildable house lots (Lots 1 to 27) and a single large lot

situated to the southeast of the project site adjacent to Honoapiilani Highway. Within the context of the Kapalua Resort, this project district is intended to provide residential, commercial, open space, park, and school uses, as well as a mix of recreational uses and facilities such as a golf course, clubhouse, pro shop, tennis courts, swimming pool, restaurants and bars, and other related recreational amenities and commercial services. Residential development within this project district provides for a mixture of 750 single- and multi-family residential units that are integrated with and complementary to the project district's recreational uses.

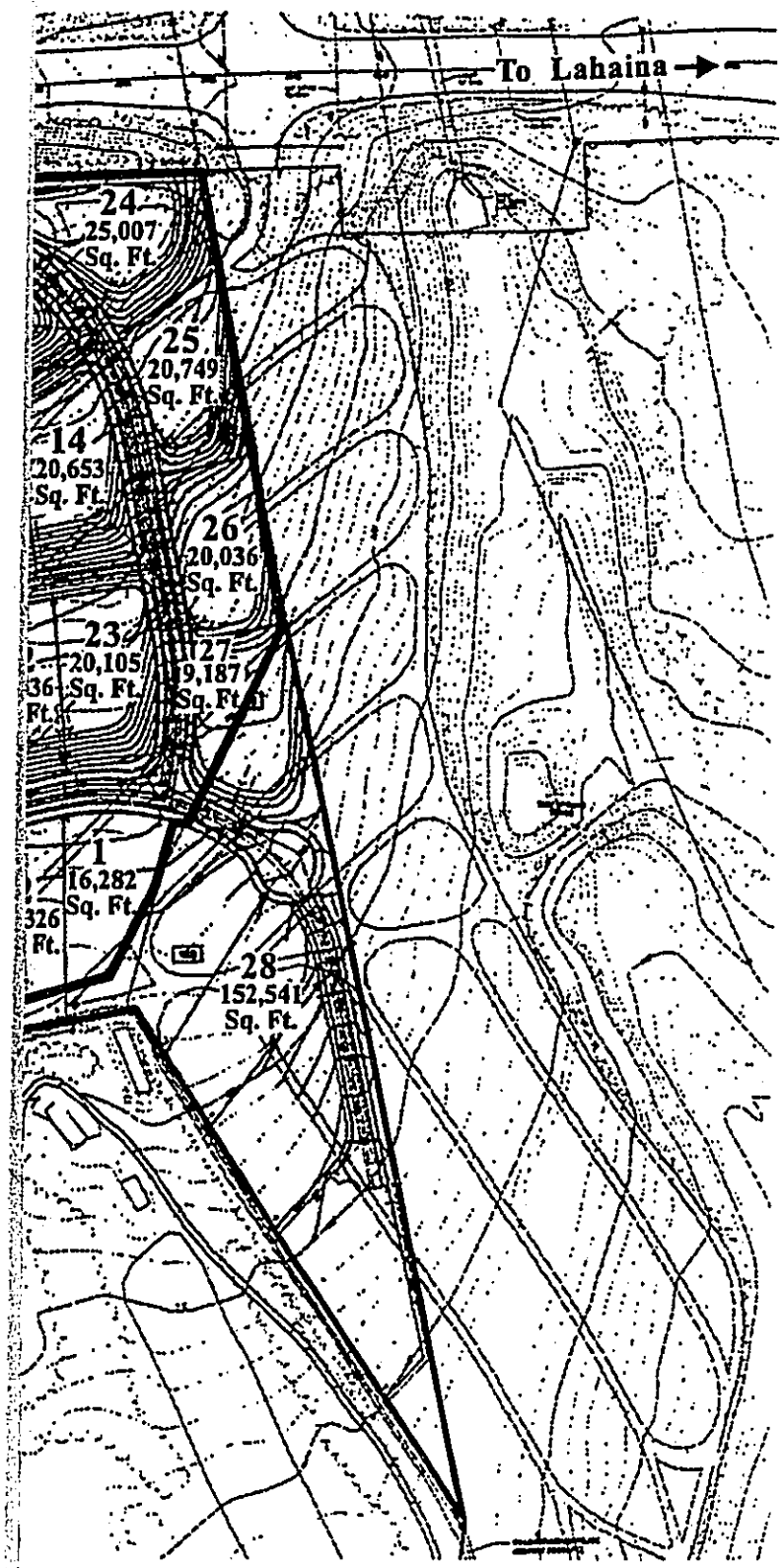
In this regard, the proposed development provides an area for single-family residential housing that is in consonance with existing and future urban land uses in the vicinity of the project site.

The proposed development will provide short- and long-term benefits for the island's economy. On a short-term basis, the proposed development will provide construction employment and support construction-related services and suppliers. Upon completion, residents of the subdivision will contribute to the long-term support of the economy through their contributions of property taxes and purchases of goods and services from local merchants and service providers.

E. PROPOSED DEVELOPMENT

The applicant proposes to subdivide the subject property into 31 single-family homesites. Lot sizes will range from 19,009 to 25,374 square feet. The homes which will be constructed later by lot purchasers will be primarily utilized as second homes or rented on a seasonal basis.

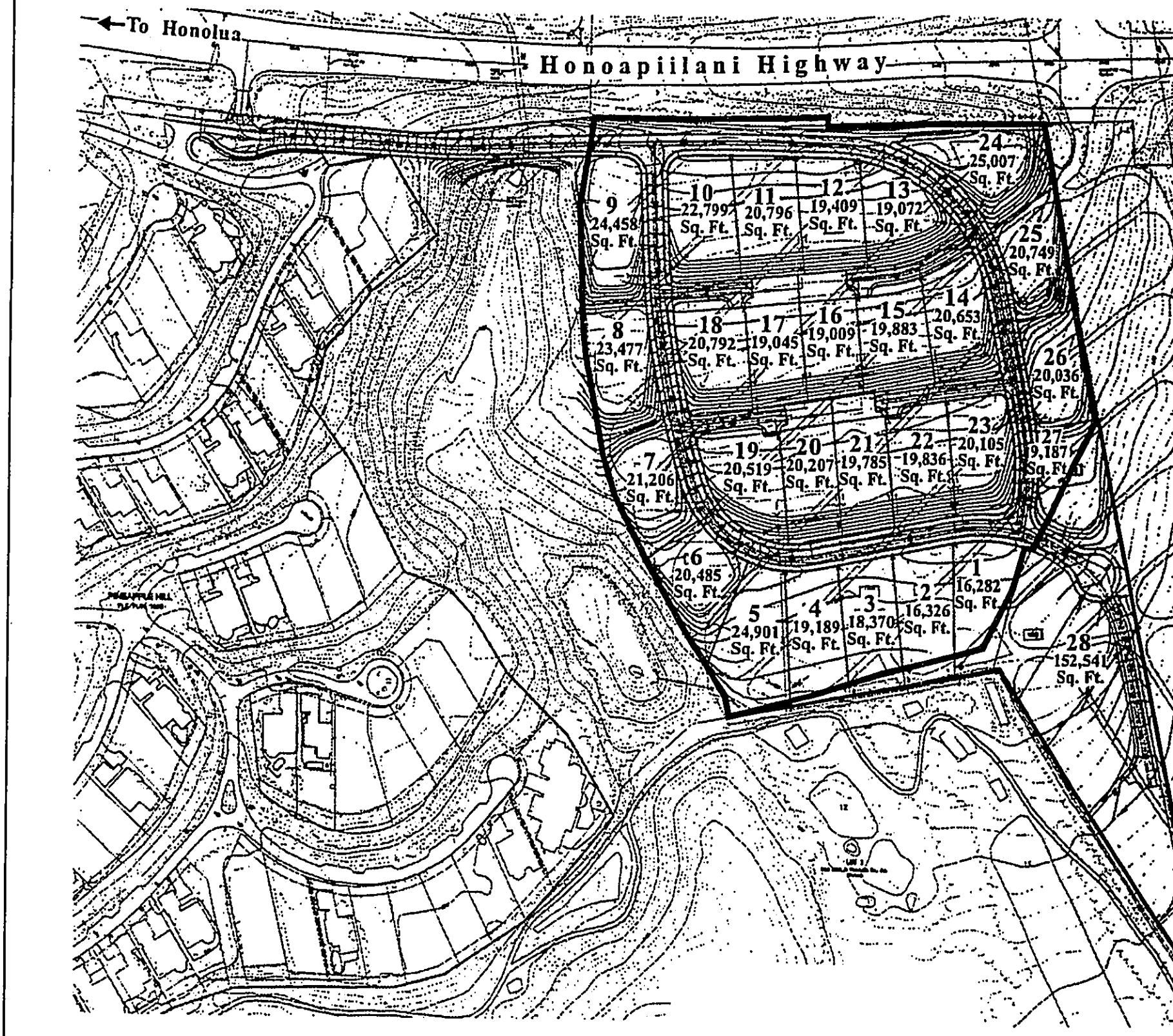
As previously noted, the proposed project will be developed in two (2) increments. See Figure 3 and Figure 4. Increment 1 will include the creation of 27 buildable house lots (Lots 1 to 27) and a single large lot



NOT TO SCALE

crement I

MUNEKIYO, ARAKAWA & HIRAGA, INC.



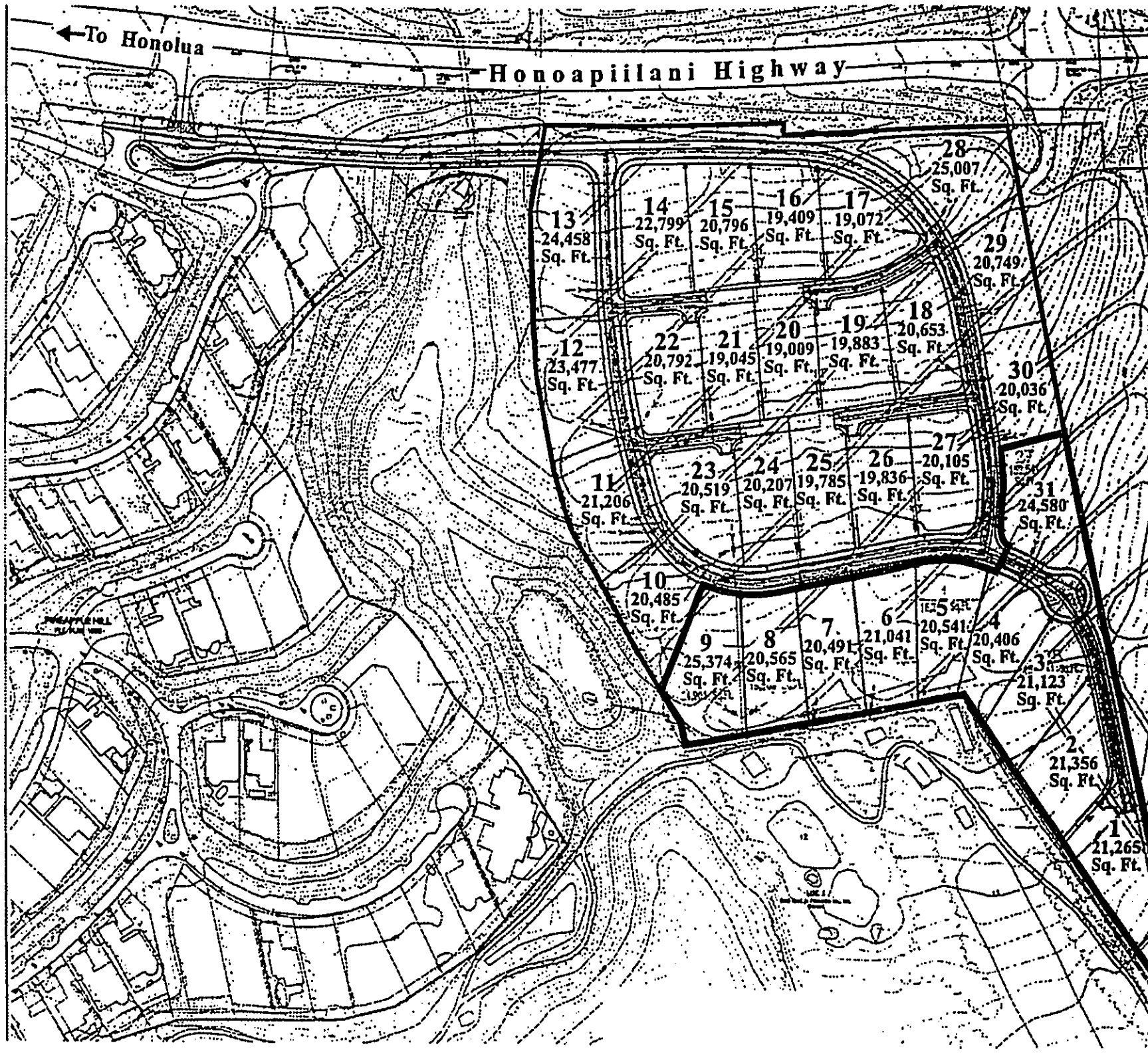
Source: Warren S. Unemori Engineering, Inc.

Figure 3

Kapalua Site 19

Preliminary Subdivision Plan - Increment I

Prepared for: Kapalua Land Company, Ltd.



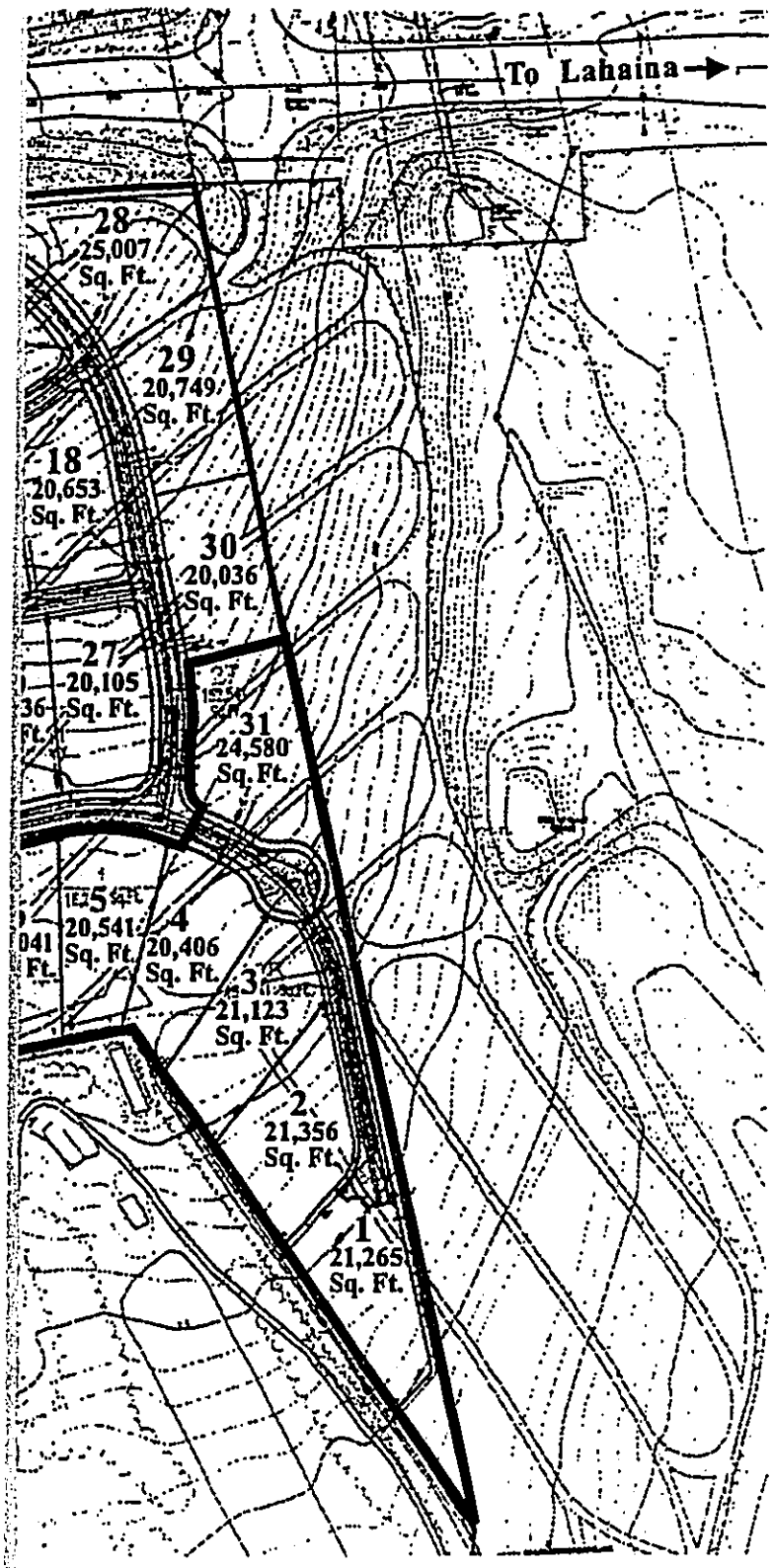
Source: Warren S. Unemori Engineering, Inc.

Figure 4

Kapalua Site 19

Preliminary Subdivision Plan - Increment II

Prepared for: Kapalua Land Company, Ltd.



NOT TO SCALE

Increment II

MUNEKIYO, ARAKAWA & HIRAGA, INC.

(Lot 28). Refer to Figure 3. Increment 2 will involve the consolidation of Lots 1 to 5, and Lots 27 and 28 of Increment 1 into one (1) lot and the resubdivision of this one (1) lot into ten (10) buildable house lots. The resulting subdivision layout, consisting of 31 lots, is shown in Figure 4.

The improvements associated with this proposed development include the following:

1. Clearing, grubbing, and grading to provide building pads in accordance with drainage and setback criteria;

2. Installation of water, sewer, and utility lines to serve each of the 31 lots;

3. Construction of an access road and internal roadways to provide for ingress/egress and the circulation of traffic for the subdivision;

4. Construction of drainage system improvements for the collection and conveyance of stormwater runoff; and

5. Slope plantings and street tree plantings.

The subdivision plans have been developed to ensure that the building lots meet the spatial and functional requirements of homesite purchasers. In keeping with the Kapalua Resort's standards of quality and excellence, design guidelines will be utilized to ensure that all homes will be architecturally and aesthetically compatible with other properties in the Resort.

The estimated construction cost for the proposed project is approximately $5.0 million. Construction of the project is expected to commence upon the receipt of applicable regulatory permits and approvals.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The project site is located within the Kapalua Resort, a master-planned resort community started in 1975 by Kapalua Land Company, Ltd., a subsidiary of Maui Land & Pineapple Company, Inc.

Hotel properties located within this popular destination resort include the Ritz-Carlton Kapalua and the Kapalua Bay Hotel and Villas, while condominium properties include The Bay Villas, The Golf Villas, The Ridge Villas, and The Ironwoods. The Resort also includes single-family residential communities such as Pineapple Hill, Kapalua Place, and Plantation Estates, as well as the Kapalua Shops, a boutique shopping center. Recreational amenities include three (3) 18-hole championship golf courses - the Bay Course, the Village Course, and the Plantation Course, as well as two (2) tennis centers - the Tennis Garden and the Village Tennis Center.

To the northeast of the project site beyond the unnamed gulch, lies Pineapple Hill, a 99-lot single-family subdivision. Project District 2 (Kapalua Mauka) adjoins Honoapiilani Highway to the southeast of the site, while the Golf Villas, a 186-unit residential condominium borders Pineapple Hill to the northwest. Beyond the undeveloped State-owned parcel to the southwest, lies the community of Napili which includes numerous condominiums and single-family residences, including the 174-unit Napilihau Planned Unit Development, the 38-lot Honokeana Subdivision, and the 71-lot Hale Noho Subdivision, as well as the Napili Fire Station and Napili Plaza, a business/commercial complex consisting of shops, offices,

and restaurants. In addition, the County of Maui will be developing the future Napili Park on lands situated mauka of the Honokeana Subdivision.

2. *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 is 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 occurs 90 percent of the time during the summer, and just 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 onshore toward the warmer land mass. In the evening, the reverse occurs, as breezes blow toward the relatively warm ocean.

3. ***Topography and Soils***

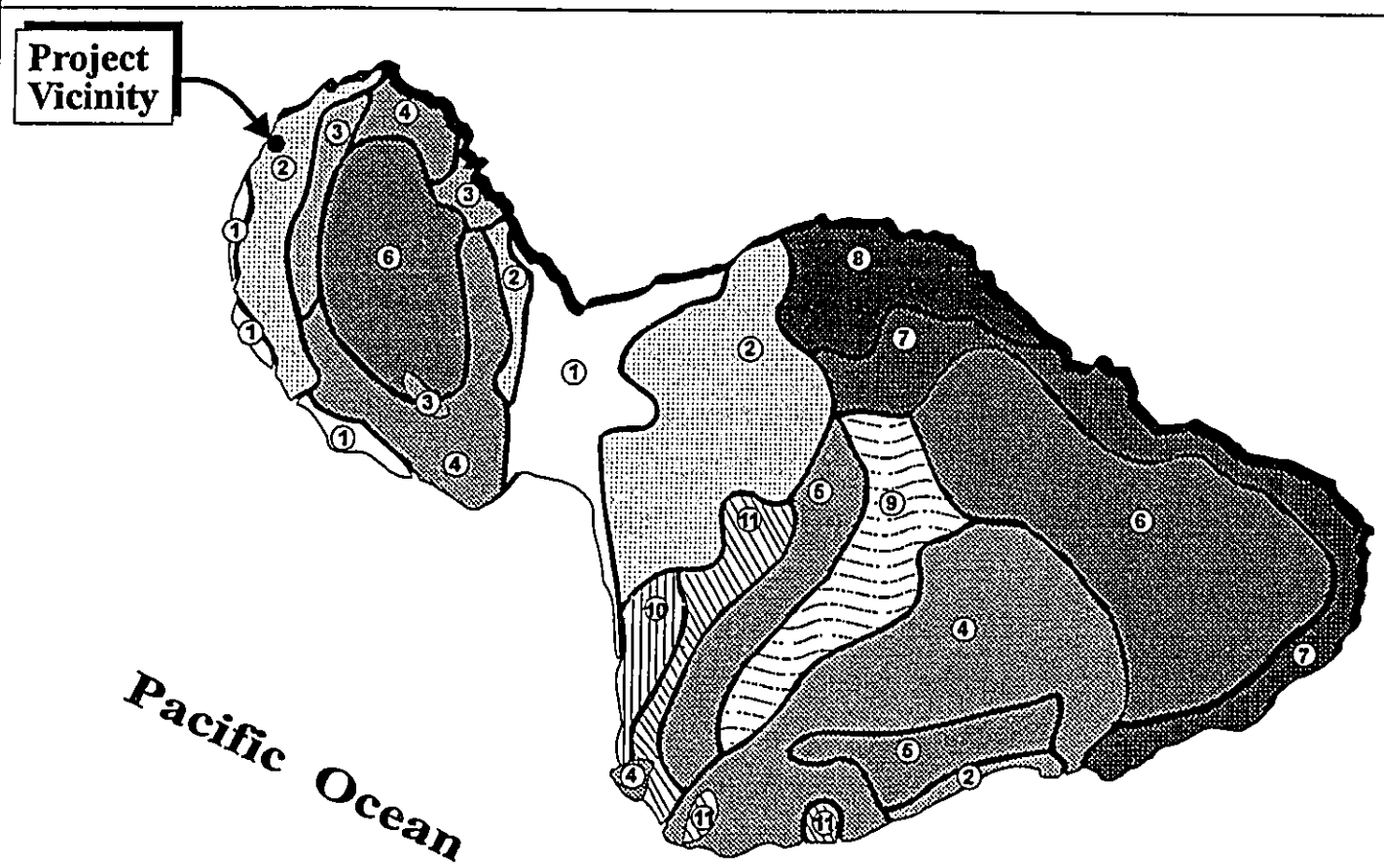
The subject property is situated at the base of the West Maui Mountains, between Honoapiilani Highway and the eastern extent of the Kapalua Resort's Bay Course. The project site is characterized by gently sloping topography that slopes in a southeasterly to northwesterly direction. Elevations on the site range from about 240 feet above mean sea level (amsl) near Honoapiilani Highway to approximately 135 feet amsl at its western most limits.

Soils at the project site belong to the Waiakoa-Keahua-Molokai association. See Figure 5. The soil types at the project site consist of Kahana silty clay, 3 to 7 percent slopes (KbB), Kahana silty clay, 7 to 15 percent slopes (KbC), and Rough Broken and Stony Land (rRS). See Figure 6.

The Kahana series of soils consist of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. For Kahana silty clay, 3 to 7 percent slopes, characteristics of the soil include slow runoff and a slight erosion hazard, while on Kahana silty clay, 7 to 15 percent slopes, permeability is moderately rapid. Runoff is slow to medium, and the erosion hazard is slight to moderate. The Rough Broken and Stony Land series of soils consist of very steep, stony gulches and is characterized as having rapid runoff and geologic erosion is rapid.

LEGEND

- ① Pulehu-Ewa-Jaucas association
- ② Waiakoa-Keahua-Molokai association
- ③ Honolua-Olelo association
- ④ Rock land-Rough mountainous land association
- ⑤ Puu Pa-Kula-Pane association
- ⑥ Hydrandepts-Tropaquods association
- ⑦ Hana-Makaalae-Kailua association
- ⑧ Pauwela-Haiku association
- ⑨ Laumaia-Kaipoipoi-Olinda association
- ⑩ Keawakapu-Makena association
- ⑪ Kamaole-Oanapuka association



Map Source: USDA Soil Conservation Service

Figure 5

Kapalua Site 19

Soil Association Map

NOT TO SCALE

Prepared for: Kapalua Land Company, Ltd.

MUNEKIYO, ARAKAWA & HIRAGA, INC.

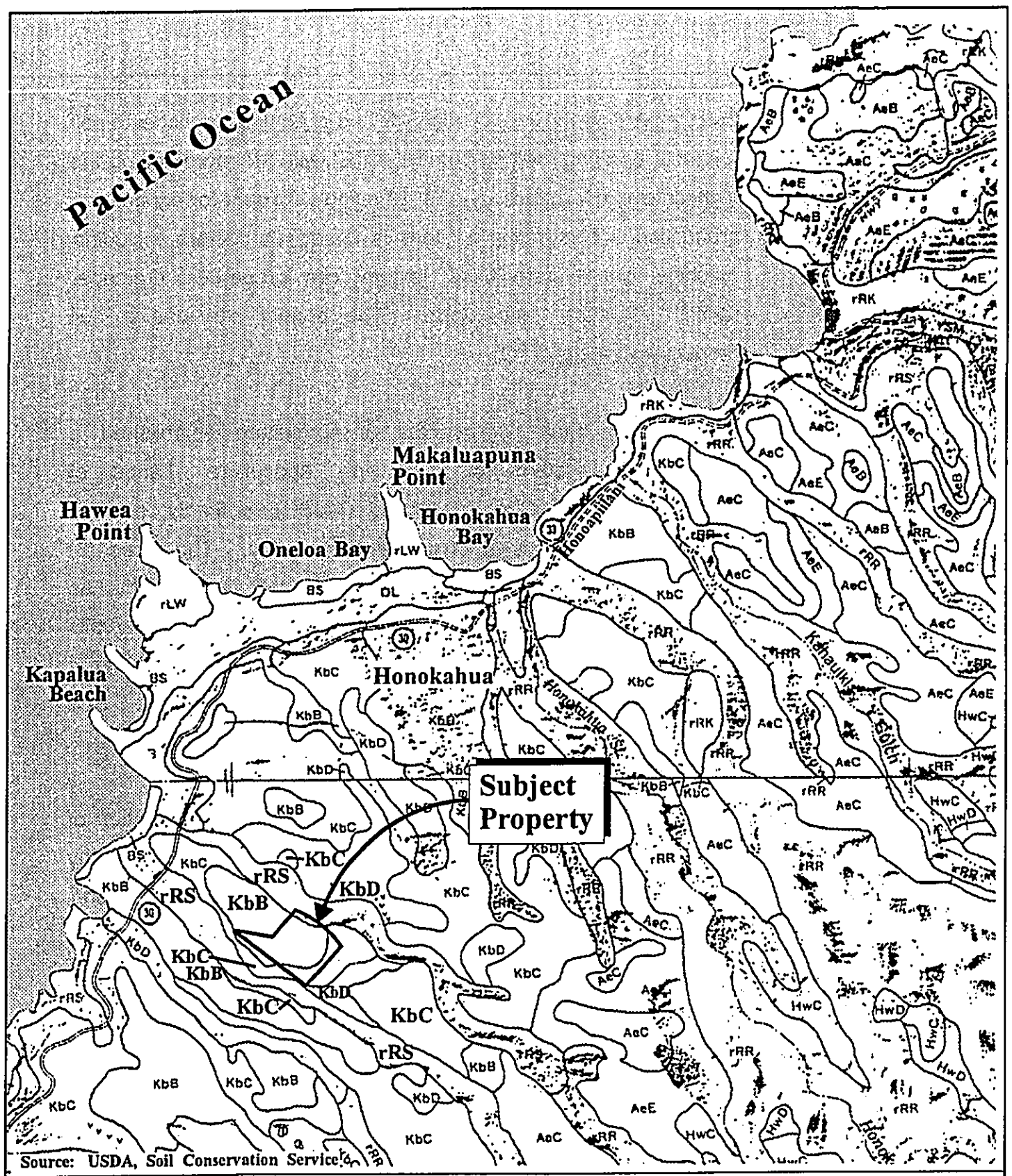


Figure 6

Kapalua Site 19

Soils Classification Map

1000
0
500
2000

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.

The Detailed Land Classification - Island of Maui, establishes a soil productivity rating ranging from "A" to "E", with "A" representing the highest level of productivity and "E" being very poor for agricultural production. This rating system is based on factors including machine tillability, stoniness, texture, clay properties, drainage, rainfall, elevation, and slope. The project site has a soil productivity rating of "C".

In 1977, the State Department of Agriculture established a classification system for identifying Agricultural Lands of Importance to the State of Hawaii (ALISH), primarily, but not exclusively on the basis of soil characteristics. The three (3) classes of ALISH lands are: "prime", "unique", and "other". As indicated by the ALISH map, a portion of the subject property falls within the "prime" agricultural land category, while the remainder is situated within the limits of existing urban development. See Figure 7.

The State Department of Agriculture notes that the classification of agricultural lands does not in itself constitute a designation of any area to a specific land use but should serve as a decision-making tool for various land use options for the production of food, feed, forage, and fiber crops in Hawaii.

4. *Flood and Tsunami Hazard*

The project site lies in Zone C, an area of minimal flood and tsunami hazard as determined by the Flood Insurance Rate Map (FIRM) for this region. See Figure 8. The entire project site is located beyond the limits of tsunami inundation, with the western most portion of the site situated approximately 2,200 feet from the

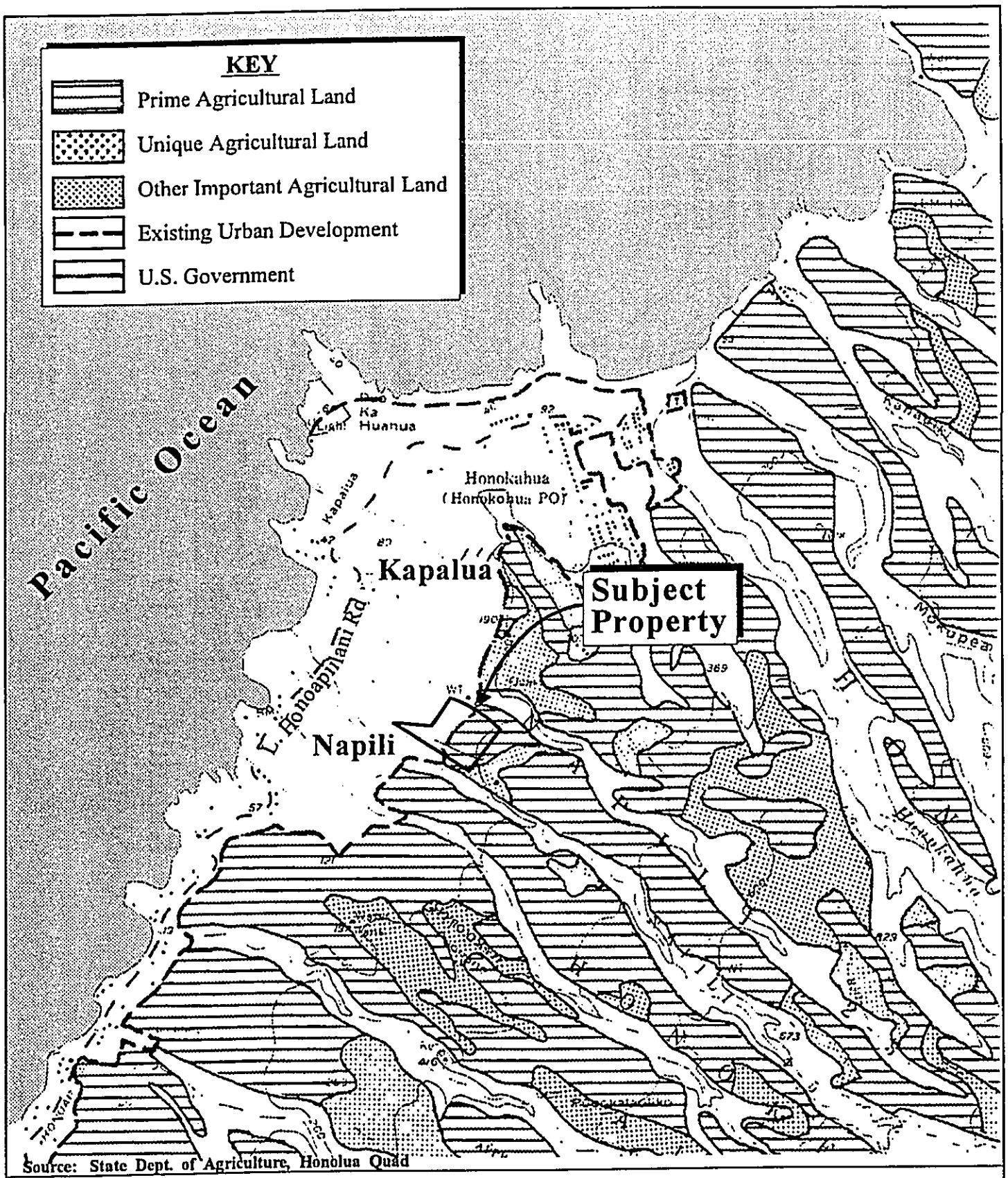


Figure 7

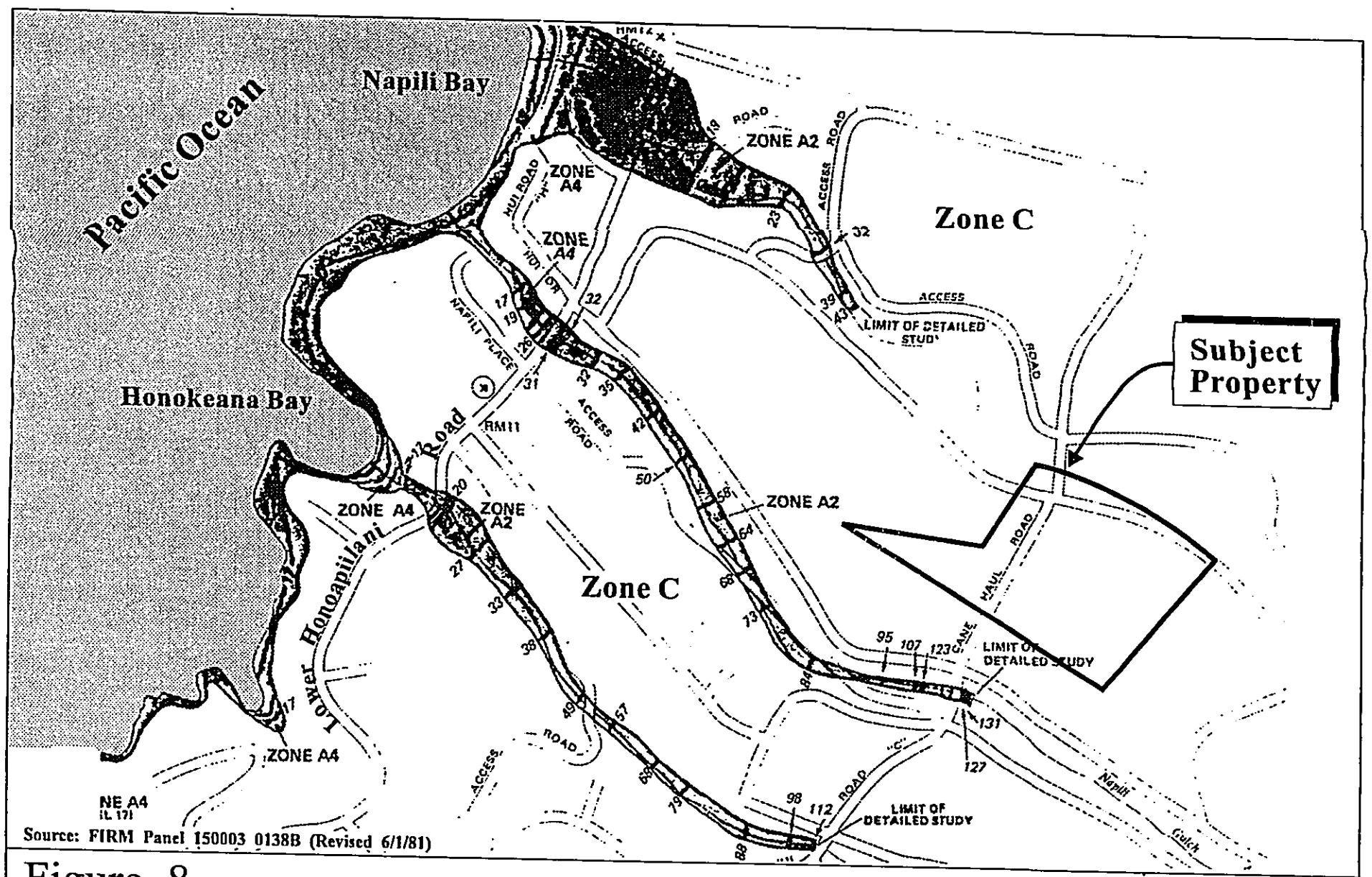
Kapalua Site 19

ALISH Map

0 500 1000 2000

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.



Source: FIRM Panel 150003 0138B (Revised 6/1/81)

Figure 8

Kapalua Site 19
Flood Insurance Rate Map

NOT TO SCALE

Prepared for: Kapalua Land Company, Ltd.

MUNEKIYO ARAKAWA & HIRAGA, INC.

shoreline.

5. ***Flora and Fauna***

The subject property is currently used for pineapple cultivation. Other vegetation within the project site consists of various grasses and weeds. There are no rare, threatened or endangered species of plants found at the project site.

Animal life which may be found in this area is typical of urbanized regions of West Maui and include cats, dogs, rats and mongoose. 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.

6. ***Air Quality***

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

7. ***Noise***

Existing background noise in the vicinity of the project site is principally attributed to traffic along Honoapiilani Highway. There are no permanent sources of noise which are considered to have an adverse impact upon the site.

8. ***Archaeological/Historic Resources***

The lands underlying the subject property have been and are currently utilized for pineapple cultivation. A summary letter report for an Archaeological Inventory Survey for the proposed project was prepared by Xamanek Researches in April 1999. See Appendix A.

The survey was conducted in two (2) phases, with a pedestrian inspection of the pineapple field comprising the bulk of the survey. All pineapple field access roads and the mauka portion of the site along the Honoapiilani Highway right-of-way were also inspected.

During the course of the inspection, it became apparent that the project site had been extensively impacted by pineapple growing activities. Exposed topsoil and/or weathered bedrock were clearly visible in many of the access roads, while pieces of weathered bedrock were clearly noted in portions of the pineapple fields. The heavily eroded soils were inspected and probed in two (2) instances.

A rock wall (Site 4756), about 20 meters beyond the limits of the project site, was observed in the unnamed gulch adjoining the site to the northeast. The rock wall is in generally fair condition and may represent a cattle control wall. The wall extends about 180 meters along the southern bank of the gulch and appears to have been affected in several areas by earlier earth moving activities.

9. ***Scenic and Open Space Resources***

The project site is part of the Kapalua Resort, a visitor destination area which provides hotel, commercial, and recreational facilities

and amenities, as well as single- and multi-family residential properties. The West Maui Mountains can be seen to the southeast of the project site, while the ocean, the Resort's Bay Course, and the islands of Lanai and Molokai define scenic features which can be viewed to the northwest of the site. The proposed use will complement existing uses within the Resort.

B. 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 located in Lahaina and the resort communities of Kaanapali,

Kahana, Napili and Kapalua.

The Kapalua-West Maui Airport at Mahinahina, located approximately three (3) miles south of the Ritz-Carlton Kapalua, 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 West Maui Community Plan region has demonstrated a substantial increase over the last two (2) 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 18,737 and 21,776, respectively.

Growth at the County level exhibits a similar pattern. The County's 1980 resident population of 71,600 increased to 100,504 in 1990. The estimated County population for the years 2000 and 2010 are 124,562 and 140,060, respectively (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. 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), and the Westin Maui (761 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.

Agriculture is another vital component of the West Maui economy with Maui Land & Pineapple Company's pineapple cultivating activities being an important component of the region's agricultural base.

In addition, Pioneer Mill Company cultivates most of its 6,700 acres in sugar cane. However, with the announced closure of its sugar cultivating operations in February 1999, Pioneer Mill is considering other commercial crops in addition to its coffee growing operations. Presently, Pioneer Mill utilizes about 500 acres for coffee cultivation, although a 1980 study has identified approximately 2,500 acres that are suitable for growing coffee. For 1999, the coffee crop is projected to yield about 375,000 pounds (Maui News, March 19, 1999).

In 1990, the island's unemployment rate was at 4.1 percent, and as of November 1998, the average year-to-date unemployment stood at 6.2 percent. This change is largely attributable to the shifts in the visitor and construction industries that have since led to efforts to diversify and enhance the local economy.

C. PUBLIC SERVICES AND INFRASTRUCTURE

1. Solid Waste Disposal

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 is 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.

2. Medical Facilities

The only major medical facility on the island is Maui Memorial Medical Center, located approximately 20 miles from Lahaina, midway between Wailuku and Kahului. Licensed for 194 beds, the medical center provides general, acute, and emergency patient care services for residents and visitors.

In Kapalua, Doctors on Call provides private physician services, while in Lahaina, the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente's Lahaina Clinic provide outpatient services during regular business hours.

3. Police and Fire Protection

The project site is within the Maui Police Department's (MPD) service area, which services the entire West Maui region. The MPD's Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately seven (7) miles south of the project site. The Lahaina Patrol includes 54 full-time personnel, including one (1) captain, one (1) lieutenant, police officers, public safety aides, and administrative support staff (telephone

conversation with Greg Takahashi, Maui Police Department, February 1996).

Fire prevention, suppression and protection services for the West Maui region are provided by the Maui Fire Department's (MFD) Lahaina Fire Station, also located in the Lahaina Civic Center and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company, and is staffed by 30 full-time personnel. The Napili Fire Station consists of an engine company including 15 full-time fire fighting personnel (telephone conversation with Cindy Kagoshima, Maui Fire Department, February 1996).

4. *Educational Facilities*

The West Maui area is served by four (4) public schools operated by the State of Hawaii, Department of Education: Lahainaluna High School; Lahaina Intermediate School; King Kamehameha Elementary School; and Princess Nahienaena Elementary School. The region is also served by privately operated pre-elementary and elementary schools.

5. *Recreational Facilities*

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are nearly 20 County parks in West Maui. Approximately one-third of the County parks are situated along the shoreline and are excellent swimming, diving, and snorkeling areas. Within the vicinity of the project site, the County will be developing the future Napili Park on lands located between the Honokeana Subdivision and Honoapiilani Highway.

In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use.

6. ***Roadway System***

Honoapiilani Highway (State Highway 30) is the main roadway serving the West Maui region. This highway is the only link between West Maui and the rest of the island (although a non-standard segment of highway extends around the north coast of the island to Waihee, providing limited access). The highway is configured for two (2) travel lanes, except for a segment from Kaanapali Parkway to Lahainaluna Road where four (4) travel lanes are provided. A 2.2 mile segment of Honoapiilani Highway, between Kaanapali Parkway to the Honokowai Stream Channel Bridge, is currently being widened from two (2) to four (4) lanes.

The principal roadways serving the Kapalua Resort are the Honoapiilani Highway and Lower Honoapiilani Road, the latter being a two-lane, two-way County roadway. The portion of Lower Honoapiilani Road within the Kapalua Resort is privately owned and maintained by Kapalua Land Company. Other private roads in the Kapalua Resort include Office Road, Village Road, Simpson Way, Kapalua Drive, and Pineapple Hill Road.

7. ***Water Systems***

Domestic and irrigation water for the Kapalua Resort is provided by the privately owned and operated Kapalua Water Company (KWC). See Appendix B. The source of the KWC's potable water are two (2) deep wells located approximately 9,600 feet to the southeast of the project site. Water from these wells is pumped into a 16,000 gallon control tank where it gravity flows through a 16-inch line into

a 1.0 million gallon (MG) storage reservoir. Water from the reservoir is then conveyed to Pineapple Hill (located northeast of the project site) through a 16-inch line in Office Road and Kapalua Drive. Water for Pineapple Hill is provided by a 12-inch line which diverges from the 16-inch line in Kapalua Drive. The distribution system within Pineapple Hill consists of a series of 8-, 6-, and 4-inch lines.

Non-potable irrigation water for the Resort is provided by Honokohau Ditch. Water from the ditch is transmitted via a 16-inch transmission line to a 4.5 MG reservoir in Project District 2 (Kapalua Mauka). Below Honoapiilani Highway, water to the Resort is provided by a series of 16-, 12-, and 8-inch lines in Office Road, Village Road, and Lower Honoapiilani Road.

8. ***Wastewater Systems***

The sewer system within the Kapalua Resort is owned and operated by Kapalua Land Company. Refer to Appendix B. Wastewater from the Resort is collected and directed into a County sewer pump station south of Kapalua Bay. From this point, a series of County pump stations, force mains, and gravity collectors in Lower Honoapiilani Road transports the wastewater to the County's Lahaina Wastewater Reclamation Facility (LWRF) for processing and disposal.

The LWRF, located along Honoapiilani Highway just north of the Kaanapali Resort, has been recently upgraded and expanded to a design capacity of 9.0 million gallons per day (mgd).

9. ***Drainage***

The project site is currently utilized for pineapple cultivation. Generally, existing onsite surface runoff sheet flows through the subject property in a southeasterly to northwesterly direction into adjoining properties. See Appendix C. For a 50-year, 1-hour storm, the project site generates approximately 28.9 cubic feet per second (cfs) of surface runoff.

Approximately 9.6 cfs of the runoff sheet flows into the pineapple fields located to the southwest of the site, while about 18.8 cfs of the runoff sheet flows onto the 12th and 13th fairways of the Kapalua Resort's Bay Course. This runoff ultimately drains into a retention basin adjoining the 16th fairway of the golf course.

The remaining 1.4 cfs of runoff sheet flows into the unnamed gulch to the northeast of the project site and collects in a detention basin located to the west of the Pineapple Hill subdivision. The detention basin has an outlet structure which outlets to a second retention basin located within the Bay Course about 1,000 feet mauka of Lower Honoapiilani Road.

10. ***Electrical, Telephone and CATV Systems***

Electrical, telephone, and cable television (CATV) service for the West Maui region is provided by Maui Electric Company, GTE Hawaiian Tel, and Hawaiian Cablevision, respectively. Refer to Appendix B. Existing distribution systems for these services are the overhead system on Lower Honoapiilani Road and the underground system in the Pineapple Hill subdivision which is located to the northeast of the project site.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. PHYSICAL ENVIRONMENT

1. Surrounding Uses

The proposed project represents the implementation of a component of Project District 1 as defined in the West Maui Community Plan and Maui County zoning.

The subject property is currently utilized for pineapple cultivation. The proposed project will involve the subdivision of the subject property into 31 lots containing single-family homesites, infrastructure, and landscaping.

Within the Kapalua Resort and the vicinity of the project site, the proposed use of the site is complemented by existing residential developments such as the Pineapple Hill subdivision, which is located to the northeast of the site and the Golf Villas condominium, which is situated to the northwest of Pineapple Hill.

Within the Resort, other residential uses include the Kapalua Place and Plantation Estates subdivisions, as well as condominiums such as the Bay Villas, the Ridge Villas, and the Ironwoods. In addition, Project District 2 (Kapalua-Mauka), which adjoins Honoapiilani Highway to the southeast of the site, will provide for a mixture of future single- and multi-family residential units as well.

In Napili, beyond the project site to the southwest, and along the coast to the west, numerous single-family, apartment, and condominium properties provide complementary residential land uses beyond the limits of the Kapalua Resort.

The proposed project complements existing surrounding uses.

2. ***Flora and Fauna***

The project site is presently utilized for pineapple cultivation. Fauna and avifauna found in the vicinity are typical of the West Maui region.

There are no rare, threatened, or endangered species of plant or animal life in the project vicinity. The proposed project is not anticipated to have an adverse impact upon these components of the natural environment.

3. ***Air Quality***

Air quality impacts attributed to the project will include dust generated by short-term construction related activities. Site work, such as grading, grubbing, and utilities and roadway construction, for example, will generate airborne particulates. Regular watering and sprinkling will be done to minimize dust emissions. Revegetation will be implemented as soon as practicable in order to minimize the time which graded areas are left exposed.

In the long term, there should be no significant increase in the amount of traffic due to the proposed action. In this regard, there are no anticipated adverse air quality impacts attributed to project generated traffic.

4. ***Noise***

As with air quality, ambient noise conditions will be impacted by construction activities. Audible construction noise will probably be unavoidable during the construction period. To aid in the mitigation

of noise impacts, construction activities will be conducted during the daylight hours only.

In general, the proposed project will not generate adverse long-term noise conditions. Noise parameters are not expected to be significantly affected.

5. ***Archaeological/Historic Resources***

The summary letter report for the Archaeological Inventory Survey for the proposed project indicates that no significant cultural resources were located on the subject property during the survey. Refer to Appendix A. Accordingly, no further work for the project site is recommended at this time.

In addition, no further archaeological work is recommended for the rock wall (Site 4756) that was located about 20 meters beyond the subject property in the gulch bordering the property to the northeast. However, since the rock wall is situated in the vicinity of the proposed subdivision, care will be exercised during site work to minimize potential adverse impacts to the wall.

In correspondence dated June 17, 1999, the State Historic Preservation Division (SHPD) indicated that the proposed project will have "no effect" on significant historic sites. See Appendix A-1. In the event significant cultural deposits or human burials are encountered during construction activities, work will cease in the immediate area of the find and the find shall be protected from further damage. The SHPD will be immediately notified to determine appropriate mitigation measures.

6. ***Scenic and Open Space Resources***

To retain and enhance view planes for the homesites, the project site will be graded into four (4) tiers with a grade differential of approximately 20 feet between tiers. In addition, ample side yard building setbacks will also be utilized to create view corridors between buildings.

The proposed subdivision is intended to complement the existing high quality resort character of the Kapalua Resort. The lots and building pads will be grassed and trees will be planted along the subdivision streets. Design guidelines for the project will assure consistency in architectural forms that are in keeping with the standards of the Resort. The project is not anticipated to have an adverse impact upon views or scenic areas.

7. ***Use of Chemicals and Fertilizers***

Use of herbicides will generally be limited to the initial plant establishment period on the project site. Pesticides are anticipated to be used only as a treatment and not as a preventive measure. As a treatment, application usage will be minimal. In addition, plant selection for the project will be based on hardiness, drought tolerance, pest resistance, as well as aesthetic concerns.

Nitrogen/Phosphorus/Potash mixed fertilizers are anticipated to be applied to lawn areas, groundcover, and flowering shrubs. With proper irrigation management practices, leaching and runoff of fertilizers should be negligible.

No adverse effects on surface, underground, and marine resources are anticipated.

B. *IMPACTS TO THE SOCIO-ECONOMIC ENVIRONMENT*

1. *Population and the Economy*

On a short-term basis, the proposed 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.

The proposed project is not anticipated to have an adverse impact upon population parameters. In the long term, the project will contribute to the local economy through the payment of property taxes, as well as though the purchases of goods and services by residents.

2. *Agriculture*

The project site is currently used for pineapple cultivation. Pineapple cultivation activities on the site will end with the completion of the last harvest in the summer of 1999. The use of the subject property for residential development is not expected to adversely impact the agricultural operations or economic viability of Maui Land & Pineapple Company nor will it affect lands available for diversified agricultural use.

As previously indicated, the project site is situated in a region of existing and ongoing urban development. The lands underlying the project site are in the State "Urban" district. In addition, the use of these lands for residential development is supported by the West Maui Community Plan's existing land use designations for the project site as well as by the Project District 1 zoning for the majority of the site.

C. PUBLIC SERVICES AND INFRASTRUCTURE

1. Solid Waste Disposal

A solid waste management plan for the disposal of cleared and grubbed material during construction will be developed in coordination with the Department of Public Works and Waste Management's Solid Waste Division.

2. Police, Fire, and Medical Services

Medical, police, and fire protection services are not expected to be adversely impacted by the proposed project. The project will not extend existing service area limits or capabilities.

3. Educational and Recreational Resources

The proposed project is not expected to generate a need for educational facilities. No adverse impacts to existing recreational facilities and resources are anticipated.

4. Roadways

Currently, residential traffic destined for the Pineapple Hill subdivision uses Simpson Way to access the subdivision, while maintenance vehicles use an existing service road at Honoapiilani Highway.

Access to the Site 19 subdivision will be provided via the existing Pineapple Hill entrance and service road. By utilizing this access point, traffic from both Site 19 and Pineapple Hill will be able to directly access Honoapiilani Highway. Access via the Simpson Way and Honoapiilani Highway access points is, and will continue to be, regulated by card-controlled access gates.

From the Site 19 access point, a new frontage road will be constructed parallel to Honoapiilani Highway to provide access to the project site. Refer to Appendix B. The proposed 24-feet wide paved roadway will include curbs and gutters on both sides, as well as a 4-feet wide sidewalk on one (1) side. Catch basins and a storm drain system will also be installed to convey runoff from this road into the unnamed gulch to the northeast of the site. All interior subdivision streets and driveways will be constructed in accordance with County standards.

A Traffic Impact Analysis Report (TIAR) for the proposed project was prepared in April 1999 by Parsons Brinckerhoff. See Appendix D.

Existing traffic volumes (including data from a count station at Napilihau Street) were obtained from the latest State Department of Transportation traffic survey data.

Traffic volumes north of Napilihau Street are representative of through traffic volumes that would pass the Site 19 access point on Honoapiilani Highway. Within the vicinity, the AM peak hour occurs in the mid-morning, while the PM peak hour occurs during the afternoon commuter period.

Based on the analysis and findings set forth in the TIAR, the proposed project will generate a very small amount of additional traffic; 12 vehicles per hour (vph) in the AM peak hour and 10 vph during the PM peak hour. Traffic generated from Site 19 and the rerouting of traffic from the Pineapple Hill subdivision to the Site 19 access point at Honoapiilani Highway could be accommodated by

a STOP-sign controlled intersection and operate at good intersection service levels. An existing left-turn storage bay in the painted median of Honoapiilani Highway provides for northbound left-turn movements from the highway to the Site 19 access point. This access point is also gated and card-controlled to limit access to Site 19 and Pineapple Hill residents only.

It is recommended that the existing "T" intersection formed by Honoapiilani Highway and the service road for the Pineapple Hill subdivision be used as the access point for Site 19, as well as for use by Pineapple Hill traffic. In addition, appropriate queuing distance should be provided between the gated Site 19 access point and Honoapiilani Highway to accommodate at least one (1) vehicle. Appropriate centerline pavement striping would also help drivers to properly align their vehicles when entering or exiting through this access point.

5. ***Water***

Domestic water for the proposed project will be extended from the south end of the Kapalua Water Company's (KWC) distribution system in the Pineapple Hill subdivision. Refer to Appendix B. The distribution system will be sized to meet the fire flow requirements of the project. To maintain adequate water pressure at Pineapple Hill, a new 12-inch potable line will be installed along Simpson Way between Office Road and Pineapple Hill.

Based on potable water consumption records for the Resort, the average daily water demand for single-family residential properties is 450 gallons per day (gpd). The estimated domestic water demand attributable to the proposed project is 13,950 gpd. This

additional water demand can be adequately accommodated by the KWC's existing well source and storage system.

A non-potable system will also be installed. A new irrigation line will be extended from a 16-inch line in Office Road. This new line will proceed along Honoapiilani Highway and the proposed subdivision access road before ending at the 12th fairway of the Resort's Bay Course. The non-potable irrigation water demand for the proposed project is estimated to be about 20,000 gpd. This demand can be readily accommodated by the KWC's existing ditch source and storage reservoir improvements.

6. ***Wastewater***

When fully developed, the proposed project is expected to generate 10,850 gallons per day (gpd) of wastewater. Refer to Appendix B. Since the project site is not currently sewered, approximately 2,000 feet of sewer line will be installed along the western edge of the Kapalua Resort's Bay Course to connect the onsite sewer system to the County gravity system on Lower Honoapiilani Road.

The design capacity of the Lahaina Wastewater Reclamation Facility is 6.7 million gallons per day (mgd). As of July 1998, the cumulative wastewater flow allocated to the Lahaina facility was approximately 5.813 mgd. The wastewater requirements of the proposed subdivision are not expected to have an adverse effect on existing wastewater facilities or capacities. Sewer system improvements will be designed in accordance with applicable regulatory standards.

7. ***Drainage***

The peak post-development surface runoff from the project site for a 50-year, 1-hour storm is expected to total 61.3 cubic feet per second (cfs), an incremental increase of approximately 31.5 cfs from pre-development conditions. Refer to Appendix C.

Post-development runoff from the subdivision's lots and streets will be collected by catch basins within subdivision roadways and conveyed by an underground drainage system to a drainage outlet within the existing detention basin located in the gulch between the project site and the Pineapple Hill subdivision. Each terraced lot will be provided with a catch basin to intercept runoff from yards and rooftops and keep it from sheet flowing over the slopes of embankments. Building guidelines will require all downspouts to be connected to onsite drainage stubouts and catch basins.

Runoff from lots along the Kapalua Resort's Bay Course and lots on the westerly end of the project site will be allowed to sheet flow onto the golf course as it is doing currently. Approximately 46.6 cfs will be intercepted and directed to the existing detention basin. This detention basin has adequate capacity to retain the additional runoff generated.

Appropriate erosion control measures for the proposed project will be coordinated with the Department of Public Works and Waste Management.

The proposed drainage system improvements will be designed to produce no adverse effects from stormwater runoff to adjacent and downstream properties. In addition, these improvements will

conform to, and be coordinated with, applicable regulatory standards and agencies.

8. Electrical, Telephone and CATV Systems

Electrical, telephone, and cable television (CATV) distribution systems for the project will be extended underground to each homesite from the Pineapple Hill subdivision or from Lower Honoapiilani Road. Refer to Appendix B. The distribution system for the proposed project will be installed along the subdivision's interior roads and driveways. Localized non-glare street lights will be used wherever practicable.

D. CUMULATIVE AND SECONDARY IMPACTS

A cumulative impact is defined as an impact to the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Actions, particularly those that involve the construction of public facilities or infrastructure, may stimulate secondary impacts such as increases in population and growth, or increases in the demand for public services. In order to assess the potential cumulative and secondary impacts related to the development of the proposed project, the West Maui Community Plan has been utilized as the basis for reasonably foreseeable future development in the region. The Community Plan reflects current and projected conditions in West Maui and sets forth goals, objectives, policies, and recommendations to guide the development of the region, as well as enhance its overall living environment.

The subject property is designated "Project District 1" and "Single-Family Residential" by the Community Plan and is situated within the Kapalua

Resort. The lands within the Kapalua Resort are designated "Hotel", "Open Space", "Park", "Business", "Project District 1", "Project District 2", "Single Family Residential", and "Multi-Family Residential" by the Community Plan. In addition to approved development projects such as the Villages at Lei'ali'i and Pu'ukoli'i Village, the Community Plan includes other Project District designations such as Project District 3 (North Beach Mauka) and Project District 4 (Weinberg Property).

Cumulative impacts primarily relate to the long-term relationship of the proposed action to the overall development of the Kapalua Resort. The proposed project is a component of Project District 1 in the Kapalua Resort. From a long-term perspective, the development of the entire Kapalua Resort will affect employment, housing and requirements for public services and infrastructure.

From an economic standpoint, the development of the Kapalua Resort will support additional employment for the region, both direct and indirect. The additional employment opportunities may attract new workers to the island, leading to incremental increases in population as each project is developed. While housing inventory for potential employees is currently available in the region, the long-term demand for employee housing must also be considered with the development of the Kapalua Resort.

Similarly, requirements for public services (e.g., police, fire, education, medical services) and infrastructure (e.g., water, wastewater, drainage and roadway capacities) must also be considered in the context of the long-term development of the Kapalua Resort.

The Kapalua Resort is a master-planned development which will be implemented incrementally over the long term. As each new development

project is developed, regional as well as project related mitigating measures must be put in place.

Future traffic increases attributed to regional traffic growth, including increases in traffic volume associated with the development of the Kapalua Resort, will need to be addressed in order to enable each subsequent project to proceed. Similar analysis and mitigative improvements for drainage and water and wastewater infrastructure will need to be implemented. From a planning standpoint, requirements for these infrastructure components have been planned or have adequate capacities to accommodate the development of the proposed project.

Public services which serve the West Maui community must also be expanded over time to accommodate the anticipated regional population growth, a portion of which will be attributed to the Kapalua Resort. From this standpoint, additional tax revenues generated by long-term regional and islandwide increases in business opportunities will need to be applied to the provision of police, fire and recreational services.

Chapter IV

Relationship to Land Use Plans, Policies and Controls

IV. RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205A, Hawaii Revised Statutes, relating to the State 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 "Urban" district. *See Figure 9. The proposed action involves the* construction of a 31-lot residential subdivision in the Kapalua Resort and is compatible with the "Urban" 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.

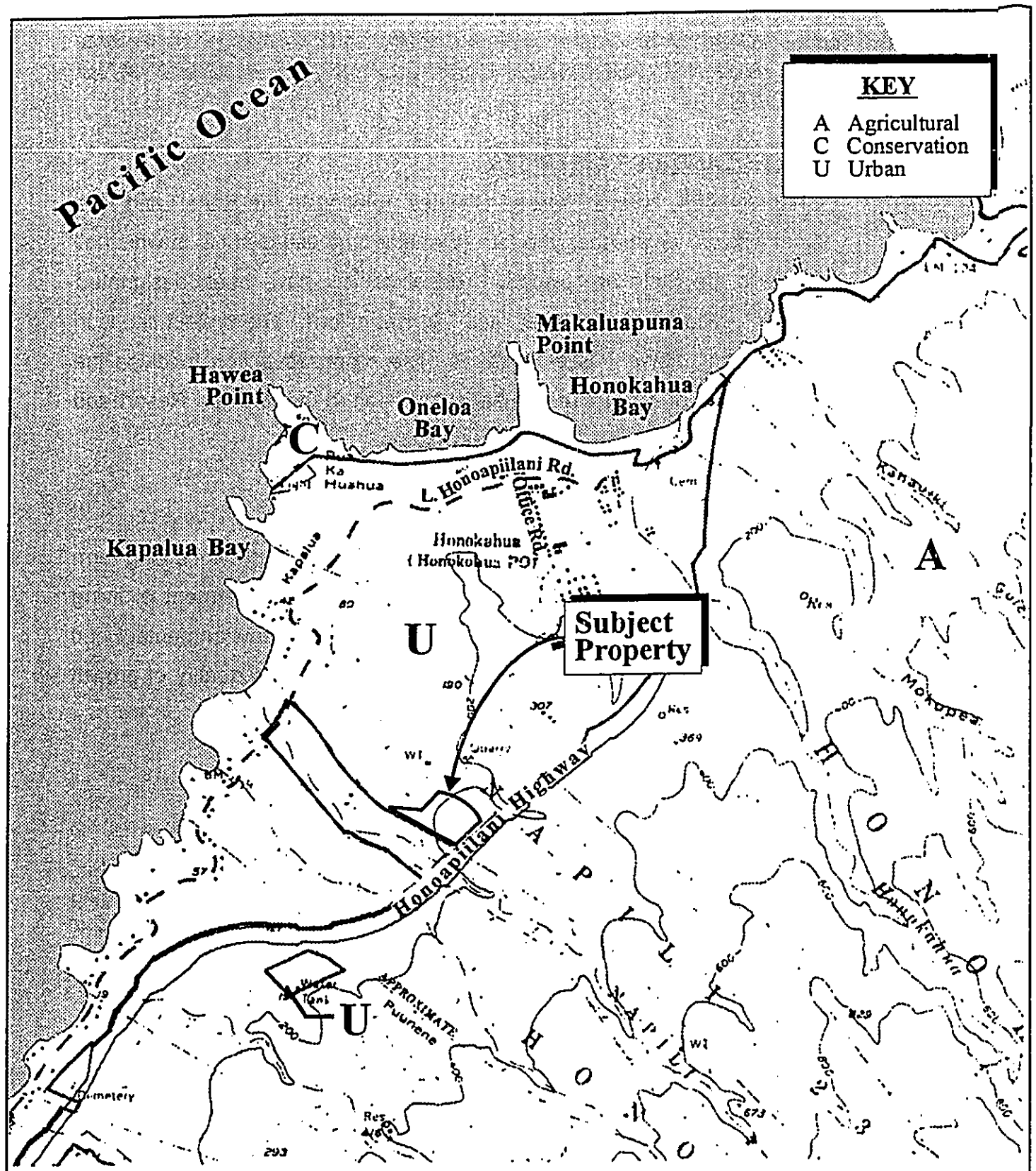
LAND USE

Objective:

To preserve for present and future generations existing geographic, cultural and traditional community lifestyles by limiting and managing growth through environmentally sensitive and effective use of land in accordance with the individual character of the various communities and regions of the County.

Policy:

Formulate a directed land use growth strategy which will encourage the redevelopment and infill of existing communities allowing for mixed land uses, where appropriate.



Source: SLUD Boundary Map, Honolua Quad

Figure 9

Kapalua Site 19

State Land Use Classification

0 500 1000 2000

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.

URBAN DESIGN

Objectives:

To see that all developments are well designed and are in harmony with their surroundings.

To encourage developments which reflect the character and the culture of Maui County's people.

Policies:

Require that appropriate principles of urban design be observed in the planning of all new developments.

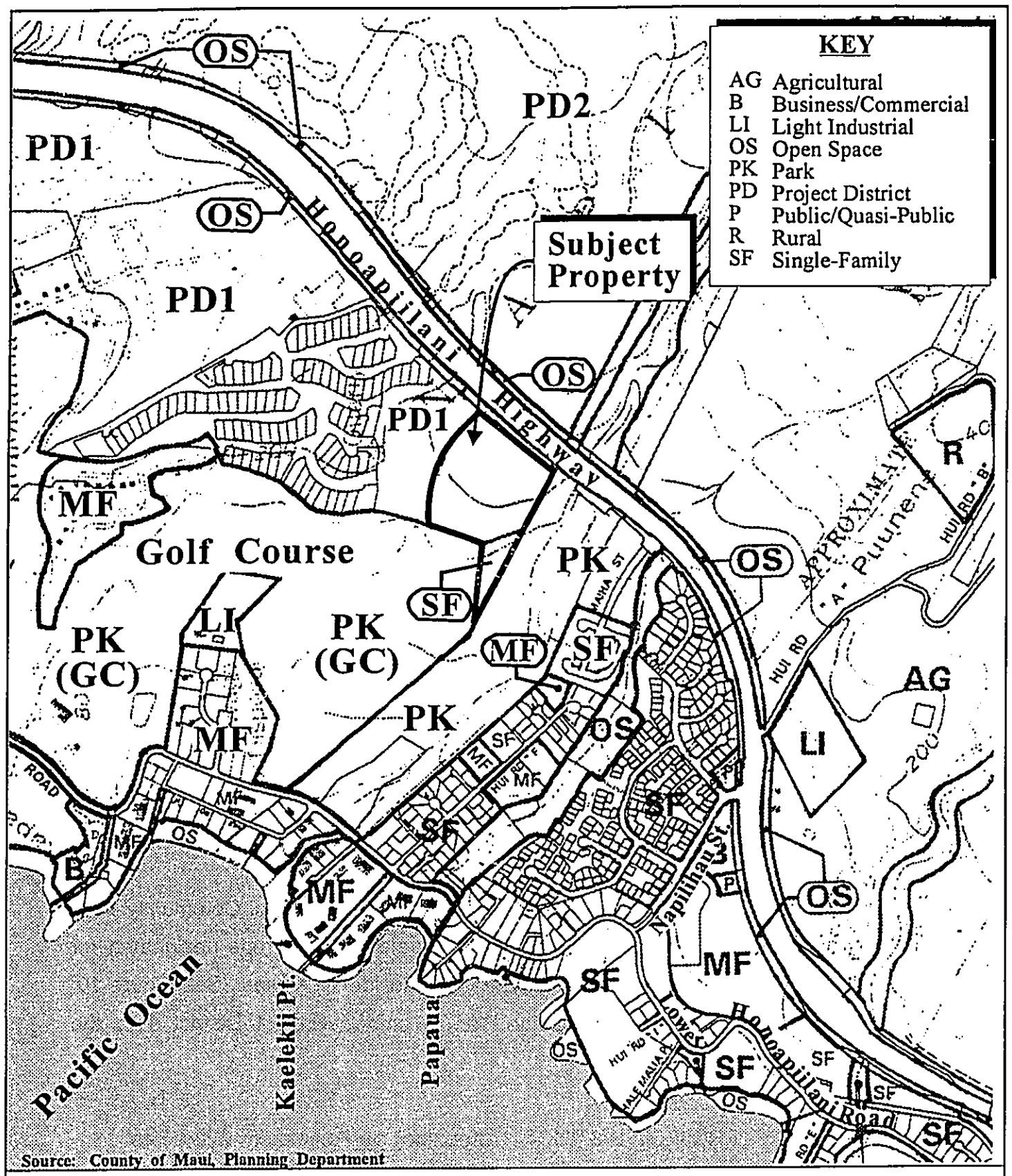
Encourage community design which establishes a cohesive identity.

C. *WEST MAUI COMMUNITY PLAN*

The project site is located in the West Maui Community Plan region, one (1) of the nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of future development in the region.

Land use guidelines are established by the West Maui Community Plan land use map. The project site is situated within areas designated for "Project District 1" and "Single-Family Residential" uses. See Figure 10. The West Maui Community Plan describes Project District 1 in the following terms:

> PROJECT DISTRICT 1 (Kapalua) approximately 220 acres
>
> This project district is within the Kapalua Resort makai of Honoapiilani Highway between the proposed Napili Regional



Source: County of Maui, Planning Department

Figure 10

Kapalua Site 19

West Maui Community Plan
Land Use Map

MUNEKIYO ARAKAWA & HIRAGA, INC.

Prepared for: Kapalua Land Company, Ltd.

Park and Lower Honoapiilani Highway at Honokahua Bay, as identified on the West Maui Community Plan Land Use Map. The project district is intended to provide a mixture of visitor-oriented facilities, including hotel accommodations, single-family and multi-family residences, and supporting commercial services within an open-space setting organized around a central village core. This central core should function as a town center, containing public spaces, public uses and facilities, commercial services, and residential areas.

Visitor accommodations should not exceed 1,050 rooms. The residential component should be limited to 900 units in a mixture of single-family and multi-family densities. The golf course and open space system should continue the open space theme established within the existing portions of the resort.

The 15.691 acres of the subject property within Increment I of the proposed subdivision is designated "Project District 1" by the Community Plan land use map, while the 3.282 acres comprising Increment II of the subdivision is designated "Single-Family Residential". A request to amend this "Single-Family" designation to "Project District 1" is being processed to establish an integrated land use framework for the project. The proposed project is consistent with the Community Plan land use designations for the site.

The West Maui Community Plan sets forth goals which are statements identifying preferred future conditions. Goals associated with the development of the proposed project include the following:

LAND USE

Goal:

An attractive, well-planned community with a mixture of compatible land uses in appropriate areas to accommodate the future needs of residents and visitors in a manner that provides for the stable social and economic well-being of residents and the preservation and enhancement of the

region's open space areas and natural environmental resources.

Objectives and Policies for the West Maui Region in General

* * *

4. Establish an appropriate supply of urban land within the region to meet the needs of the community over the next 20 years. The Community Plan and its map shall define the urban growth limits for the region and all zoning requests and/or proposed land uses and developments shall be consistent with the West Maui Community Plan and its land use maps.

URBAN DESIGN

Goal:

An attractive and functionally integrated urban environment that enhances neighborhood character, promotes quality design at the resort destinations of Kaanapali and Kapalua, defines a unified landscape planting and beautification theme along major public roads and highways, watercourses, and at major public facilities, and recognizes the historic importance and traditions of the region.

Objectives and Policies for the West Maui Region in General

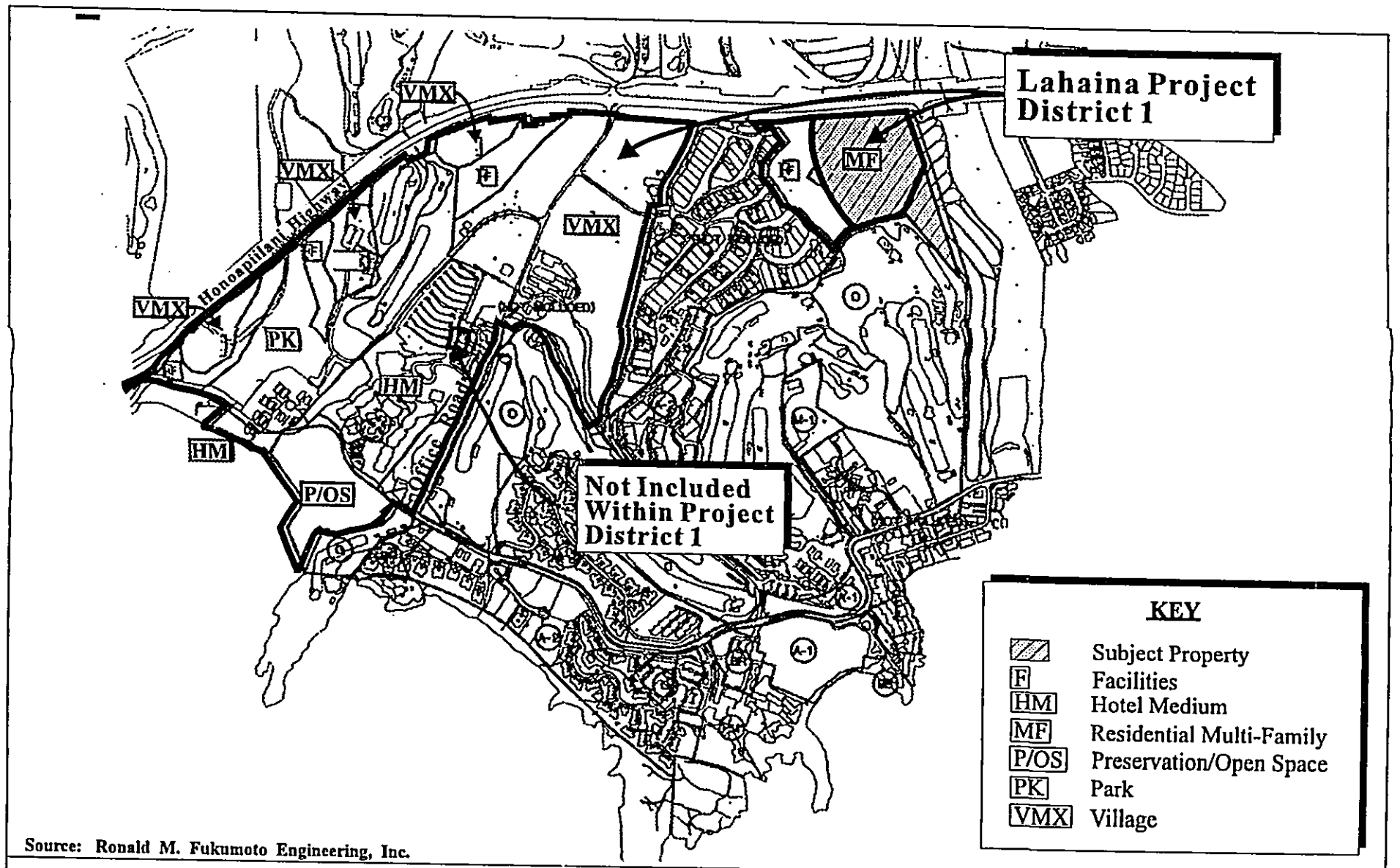
* * *

2. Maintain a high level of design quality for West Maui resort destination areas

D. ZONING

Of the subject property's 18.973 acres, Maui County zoning designates the 15.961 acres which comprise Increment I of the proposed subdivision as "Project District 1" and the remaining 3.282 acres which constitute Increment II of the subdivision as "Agricultural".

Project District Phase I zoning was approved for Lahaina Project District 1 through Ordinance No. 1844 in 1989. See Figure 11. Land use categories and acreages established are shown in Table 1:



Source: Ronald M. Fukumoto Engineering, Inc.

Figure 11

Kapalua Site 19

Project District Zoning

NOT TO SCALE

Prepared for: Kapalua Land Company, Ltd.

MUNEKIYO, ARAKAWA & HIRAGA, INC.

Table 1

PROJECT DISTRICT 1 LAND USE ALLOCATIONS	
Land Use Category	***Acreage***
H-M Hotel	30.023
Multi-Family	16.278
Village	89.378
Park	39.267
Preservation/Open Space	13.61
Facilities	23.153

The 15.961 acres of the subject property located within the Project District's Multi-Family district provides for single-family residential uses and is consistent with County zoning. The proposed land use and acreages comply with the established "Project District 1" zoning.

As previously noted, the West Maui Community Plan and County zoning designations for the 3.282-acre portion of the subject property are "Single-Family Residential" and "Agricultural", respectively. To provide uniformity with the 15.691 acres that are currently designated "Project District 1", as well as establish overall land use consistency for the subject property's entire 18.973 acres, the applicant is seeking a Community Plan Amendment from "Single Family Residential" to "Project District 1" and a Change in Zoning from "Agricultural" to "Lahaina Project District 1" for the 3.282-acre portion of the project site. In addition, applications for Project District Phase I and Phase II approvals are being submitted for the 3.282-acre portion of the project site as well as the subject property's entire 18.973 acres to provide for the development of the proposed project.

E. *SPECIAL MANAGEMENT AREA OBJECTIVES AND POLICIES*

As previously noted, the proposed project will be developed in two (2) increments. Increment 1 will involve the 15.961-acre portion of the project site and include the creation of 27 building lots (Lots 1 to 27) and a single large lot (Lot 28). Increment 2 will include the 3.282-acre portion of the site and will involve the consolidation of Lots 1 to 5 and Lots 27 and 28 of Increment 1 into one (1) lot, and the resubdivision of this one (1) lot into ten (10) building lots.

The development of Increment 1 will commence upon the Project District Phase II and Special Management Area (SMA) Use Permit approvals for the 15.961-acre portion of the project site. The development of Increment 2 will require Project District Phase II and SMA Use Permit approvals and will follow the Community Plan Amendment, Change in Zoning, and Project District Phase I approvals for the remaining 3.282-acre portion of the site.

Pursuant to Chapter 205A, Hawaii Revised Statutes (HRS), and the Rules and Regulations of the Maui Planning Commission, projects proposed within the Special Management Area (SMA) are evaluated with respect to SMA objectives, policies, and guidelines. This section addresses the project's relationship to applicable coastal zone management considerations, as set forth in Chapter 205A, HRS, and the Rules and Regulations of the Maui 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 located approximately 2,200

feet inland from the shoreline and is not anticipated to affect existing coastal or inland recreational resources.

(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: The subject property has been extensively modified by pineapple cultivation activities and no surface remains or evidence of past cultural activities were located on the property during the Archaeological Inventory Survey for the proposed project. Accordingly, the proposed project should have no adverse effects on historic resources. Should any human remains be inadvertently discovered during earth moving activities, work shall cease at once in the immediate area of the find, and the find shall be protected from further damage.

The SHPD shall be immediately notified and applicable procedures to ensure compliance with Chapter 6E, HRS will be implemented.

(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 project will not impact coastal scenic and open space resources and will not affect public views to and along the shoreline. In addition, the subdivision's streetscape and residences will be designed and landscaped in accordance with Kapalua Resort's design guidelines for the project. These guidelines will provide assurance that the completed project will be compatible with the surrounding resort and open space environment.

(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 subject property are not expected to adversely impact coastal ecosystems. Erosion control measures will be implemented during construction to minimize the effects of stormwater runoff and to ensure that coastal ecosystems are not 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 on the economy during construction by providing construction-related employment. From a long-term perspective, the proposed development is a major element of the Kapalua Resort. As one of the State's top visitor destinations, the continuing evolution of the Resort is important in ensuring the long-term stability of the local economy. The proposed project is also a key component of Project District 1 and is consistent with the goals of the West Maui Community Plan, which guides growth and development in the region.

(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: The subject property lies within Zone C, an area of minimal flooding. 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 and no adverse drainage impacts to adjoining and downstream properties are anticipated as a result of the proposed project.

(7) ***Managing Development***

Objectives:

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

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, an application for a SMA Use Permit will be filed with the Maui County Planning Department for review and action by the Maui Planning Commission.

Applicable State and County requirements will be adhered to in the design and construction of the 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 western most portion of the project site is located

approximately 2,200 feet inland from the shoreline. Consequently, the proposed project is not anticipated to adversely impact any beaches in the vicinity.

(10) ***Marine Resources***

Objectives:

Implement the State's ocean resources management plan.

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.

Chapter V

Summary of Adverse Environmental Effects Which Cannot Be Avoided

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The proposed development will result in unavoidable construction-related impacts as described in Chapter III, Potential Impacts and Mitigation Measures.

Potential effects include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust discharged by construction equipment. It should be noted, however, that these impacts are expected to be minimized through the implementation of the appropriate mitigative measures identified in Chapter III.

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

Chapter VI

Alternatives to the Proposed Action

VI. ALTERNATIVES TO THE PROPOSED ACTION

A. NO ACTION ALTERNATIVE

The Kapalua Resort is a master-planned destination resort and is also one of the State's most successful. This master-planned resort destination is the product of long-range planning efforts undertaken by Kapalua Land Company more than 30 years ago. The development of the Resort was based on the concept of managing development and utilizing long-range planning objectives to establish a master plan which would result in an economically viable development.

The proposed project is an integral component of the Kapalua Resort as well as Project District 1. The land underlying the project site is designated "Urban" by the State Land Use Commission, "Project District 1" and "Single-Family Residential" by the West Maui Community Plan, and "Project District 1" and "Agricultural" by Maui County zoning. The granting of the Community Plan Amendment and the Change in Zoning request for the 3.282 acres that are designated "Single-Family Residential" and "Agricultural" by the Community Plan and County zoning, respectively, will provide land use consistency with the 15.961 acres that are presently designated Project District 1 by both the Community Plan and County zoning.

The "no action" alternative would maintain the existing physical condition of the project site. When considering the approved and requested land uses for the project site, the "no action" alternative does not support the highest and best use of the project site for the Kapalua Resort and as reflected by the Community Plan's Project District 1 designation for the subject property's 15.961 acres.

Accordingly, the "no action" alternative was not considered since it would

contravene the development of a project which is supported by the Kapalua Resort and the West Maui Community Plan.

B. *DEFERRED ACTION ALTERNATIVE*

A "deferred action" alternative would have similar consequences as the "no action" alternative in that the land use objectives of the proposed project would be delayed and would not be immediately realized.

This alternative could result in potentially higher development costs due to increases in labor and material costs or as a result of changes to infrastructure or the existing physical or socio-economic environment (i.e., window of opportunity and opportunity costs). Based on the preceding, the "deferred action" alternative was not considered.

Chapter VII

Irreversible and Irretrievable Commitments of Resources

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The development of the proposed project is anticipated to result in the irreversible and irretrievable commitment of land and fiscal resources. Other resource commitments include energy, labor, and material resources. Impacts relating to the use of these resources should be weighed against the expected positive socio-economic benefits to be derived from the project versus the consequences of taking no action.

In addition, the proposed project is not anticipated to require a substantial commitment of government services or facilities. In general, the proposed action is not anticipated to place significant additional requirements on police, fire, medical, and social services.

Chapter VIII

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 proposed 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.

An Archaeological Inventory Survey encompassing the project site did not locate any cultural artifacts or human remains. Should any artifacts or human remains be encountered during construction, work will stop in the immediate vicinity of the find and the SHPD will be immediately notified 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 334, Hawaii Revised Statutes*

The State's Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes. The proposed action is in consonance with the following policies and guidelines:

Environmental Policy:

(1) Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii.

Guideline:

(2) Land, water, mineral, visual, air and other resources.

(F) Maintain an integrated system of state land use planning which coordinates the State and County general plans.

* * *

(7) Energy.

(A) Encourage the efficient use of energy resources.

* * *

(10) Citizen participation.

* * *

(B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.

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

The proposed project would have a direct beneficial effect on the local economy during construction. In the long term, the proposed project will support the local economy through the contribution of salaries, wages, and benefits, as well as through the purchases of goods and services from local merchants and service providers.

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

No impacts to the public's health and welfare are anticipated as a result of the proposed project.

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

No significant population changes are anticipated as a result of the proposed project.

From a land use standpoint, the proposed project is an enhancement of existing uses. The proposed project is compatible with surrounding properties in the Kapalua Resort.

The proposed improvements will hookup to existing water and wastewater systems. No adverse impacts to water and wastewater capacities and facilities are anticipated. Onsite and offsite surface runoff are expected to be accommodated by the proposed drainage system improvements. The project is not expected to significantly impact public services such as police, fire, and medical services. Impacts upon educational, recreational, and solid waste collection and disposal facilities and resources are considered minimal.

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 as a result of the project. In the long term, effects upon air quality and ambient noise levels should be minimal. The project is not anticipated to significantly affect 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 or Endangered Species or Their Habitats Would be Adversely Affected by the Proposed Action***

There are no rare, threatened or endangered species of flora, fauna, avifauna or their habitats on the subject property.

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

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related activities. It is anticipated that construction will be limited to daylight working hours. Water quality is not expected to be affected.

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

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 is not located within and would not affect environmentally sensitive areas. The project site is not subject to flooding or tsunami inundation. Soils of the project site are not erosion-prone. There are no

geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

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

The project site is not identified as a scenic vista or viewplane. The proposed project will not affect scenic corridors and coastal scenic and open space resources.

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

The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project will create an additional demand for electricity. However, this demand is not deemed substantive or excessive within the context of the region's overall energy consumption.

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

Chapter IX

Agencies Consulted During the Preparation of the Draft Environmental Assessment; Letters Received and Responses to Substantive Comments

IX. AGENCIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were consulted during the preparation of the Draft Environmental Assessment. Agency comments and responses to substantive comments are also included in this section.

1. Neal S. Fujiwara, District Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
210 Imi Kala Street, Suite 209
Wailuku, Hawaii 96793-2100

2. Linda Hihara-Endo, Acting Chief
Department of the Army
U.S. Army Engineer District, Honolulu
ATTN: Operation Division
Building T-1, Rm. 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. Timothy Johns, Director
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

5. Don Hibbard
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Building, Rm. 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

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

7. Clayton Ishikawa, Chief
County of Maui
Department of Fire Control
200 Dairy Road
Kahului, Hawaii 96732

8. Floyd Miyazono, Director
County of Maui
Department of Parks and Recreation
1580-C Kaahumanu Avenue
Wailuku, Hawaii 96793

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

10. Tom Phillips, Chief
County of Maui
Department of Police
55 Mahalani Street
Wailuku, Hawaii 96793

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

12. David Craddick, Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaii 96793

In addition to the foregoing agencies, Kapalua Land Company, Ltd. met with the Board of Directors of the Pineapple Hill at Kapalua Owners Association on January 28, 1999 to discuss the proposed project. Kapalua Land Company also presented the proposed project at the annual meeting of the Pineapple Hill at Kapalua Owners Association on April 23, 1999. Construction activities (the use of Crestview Road for construction vehicles when home construction begins at Site 19), increased traffic (Site 19 residential traffic on Crestview Road), and the use of the Association's recreational facilities (by Site 19 residents) were areas of concern that were discussed during this meeting. Kapalua Land Company indicated that it will continue to work closely with the Pineapple Hill at Kapalua Owners Association to address these concerns. It should also be noted that a meeting with the president of the Pineapple Hill at Kapalua Owners Association was held on May 24, 1999 and on August 4, 1999 to update him on the status of the proposed project.

Comments

JAMES "KIMO" APANA
MAYOR

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

April 28, 1999

Mr. Glenn Tadaki, Planner
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

RE: Kapalua Site 19; TMK: 4-02-004:024

Dear Mr. Tadaki,

Thank you for the opportunity to comment on the Kapalua Site 19 project's environmental impact statement.

The Department of Fire Control has no comment on the forthcoming environmental impact state, but wishes to reserve the right to comment on the subdivision plans review, when they are submitted to the Land Use and Code Administration for review.

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

Sincerely,

LEONARD F NIEMCZYK
Captain Fire Prevention Bureau

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE WAILUKU, HAWAII 96793

Mayor

FLOYD S. MIYAZONO
Director

ELIZABETH D. MENOR
Deputy Director

(808) 243-7230
FAX (808) 243-7934

April 28, 1999

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

Dear Mr. Tadaki:

SUBJECT: KAPALUA SITE 19; TMK 4-2-04:por. 24

We have reviewed the project summary for the above referenced matter and have no objections to the proposed project. We have met with the applicant to discuss alternatives to satisfy the park dedication requirements for this project.

Please feel free to contact me or Mr. Patrick Matsui, Chief of Parks Planning and Development, at 243-7387 should you have any other questions.

Sincerely,

Floyd Miyazono

FLOYD S. MIYAZONO
Director

c: Patrick Matsui, Chief of Planning and Development

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

REPLY TO
ATTENTION OF

April 30, 1999

Civil Works Technical Branch

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

Dear Mr. Tadaki:

Thank you for the opportunity to review and comment on the Kapalua Site 19 Project, Kapalua, Maui (TMK 4-2-4: por. 24). Due to a lack of information provided, a thorough evaluation could not be completed at this time. However, any work performed within the 100-year floodplain will have to adhere to the requirements of the Federal Emergency Management Agency. Additionally, the need for a Department of the Army permit could not be determined based on the information submitted to us. We will need to review the Environmental Assessment when it becomes available so that this information can be provided to you. Please refer to file number 990000295 in future correspondence.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at 438-8876.

Sincerely,

for Paul Mizue, P.E.
Acting Chief, Civil Works
Technical Branch

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

210 Imi Kala St.
Suite 209
Wailuku, HI
96793-2100

MAY 0 3 1999

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

April 30, 1999

Mr. Glenn Tadaki, Planner
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793-2100

Dear Mr. Tadaki,

SUBJECT: Kapalua Site 19; TMK: 4-2-004: por. 24

There is a sediment basin within the Napili 2-3 gulch which is adjacent to the subject parcel. This basin was constructed by Maui Pineapple Company, Ltd., and maintained by both Kapalua Land Company and Maui Pineapple Company. This basin is significant because it has trapped sediment which other wise would enter the County's Napili 2-3 basin constructed as part of the Honolua Watershed Project. Entry toward maintaining the basin is presently through the subject parcel. It is important that a service entry to provide for large trucks and equipment be available to and from the basin area.

Please call me at 244-3729 should you have any questions.

Sincerely,

Neal S. Fujiwara
District Conservationist

c. Mr. Wesley Nohara, Maui Pineapple Company, Ltd., Honolua

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

CHARLES H.P. HALL
DEPUTY CHIEF OF POLICE

May 10, 1999

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

Dear Mr. Tadaki:

SUBJECT: Kapalua Site 19; TMK 4-2-04:por. 24

Thank you for your letter dated April 22, 1999 giving us the opportunity to comment on the above subject.

We have reviewed the proposed summary and enclosed is our comments.

Very truly yours,

Assistant Chief Robert Tam Ho
for: THOMAS M. PHILLIPS
Chief of Police

Enclosure

xc: John E. Min, Planning Department

AC [signature] 5/13/99

TO : THOMAS PHILLIPS, CHIEF OF POLICE, MAUI COUNTY

VIA : GEORGE KAHOOHANOHANO, CAPTAIN, DISTRICT IV

FROM : ANSELM YAZAKI JR., POLICE OFFICER III, DISTRICT IV

SUBJECT : KAPALUA SITE 19; TMK 4-2-04: Por. 24

Sir this To-From is being submitted as requested concerning the request from Glenn TADAKI, planner for Munekiyo, Arakawa, & Hiraga Inc. Regarding the application from Kapalua Land Company to build a 31 lot residential subdivision on Kapalua Resort Property.

On 051299 at about 1100 hours, I reviewed the letter and maps of the area. I then located the area from the map at which time I surveyed the area and came to the following conclusion:

The traffic flow on Honoapiilani Highway within the north and south bound lanes is moderate, however most vehicles travel at a high rate of speed. Most driver's in the area do not flow the posted speed limit of 40 miles per hour. The north bound lane is a up hill grade and the south bound traffic is a down hill grade.

I would suggest a separate left turn lane for the north bound traffic and a right turn lane for the south bound traffic.

A study will be needed to ascertain a good and safe vehicle movement for the vehicles who is exiting from the new subdivision onto Honoapiilani Highway, due to the south bound traffic is a down hill grade. Making visibility close and unsafe for the exiting vehicle.

I would also suggest that during the planning stage of the subdivision, a person with knowledge of Crime Prevention Through Environmental Design (C.E.P.T.D.) be consulted. So the design of the subdivision will not benefit the criminals.

I submit the following for your approval.

NOTED BY:

[signature] 2000
5/10/99

Agree with concurs
Capt. G. Kahoohanohano
5/13/99

RESPECTFULLY SUBMITTED:

[signature]
Anselm YAZAKI Jr. 0317
051299 @ 1325 hours.

RECEIVED
'99 MAY 13 A9:31
MAUI POLICE DEPARTMENT

MAY 1 9 1999

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3122
Box 50088
Honolulu, Hawaii 96850

MAY 18 1999

In Reply Refer To: MR

Glenn Tadaki
Munekiyo, Arakawa & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, HI 96793

Re: Technical Assistance on the preparation of an Environmental Assessment for a 31-Unit Residential Sub-division Project, Kapalua, Maui, Hawaii

Dear Mr. Tadaki:

The U.S. Fish and Wildlife Service (Service) has reviewed the proposed project summary provided with your referenced request for technical assistance. The proposed project sponsor is the Kapalua Land Company, Ltd. The proposed subdivision, would occur in phases on 18.973 acres of land at the Kapalua Resort. The proposed development includes a 31-unit subdivision consisting of single family homesites and several associated developments including utility, water, and sewer lines, roadways on the site, drainage changes, and ornamental plantings. The Service offers the following comments for your consideration.

We have reviewed the information provided in the project summary and in our own files. To the best of our knowledge, no Federal endangered, threatened, or candidate species, significant wetlands, or other Federal trust resources occur at the immediate project site. The dark-rumped petrel (*Pterodroma phaeopygia sandwichensis)* is the only federally endangered or threatened species expected to occur in the vicinity of the proposed project site. Circumstantial observations and experimental evidence have shown that artificial lighting can disorient seabirds when flying between inland nesting areas and offshore feeding grounds. This disorientation is caused by excessively bright outdoor lighting and can result in seabird collisions with man-made structures such as light poles and wires. Injured seabirds that "fall-out" from collisions are highly vulnerable to predation by dogs, cats, and mongooses.

For your information, we have enclosed a copy of the Hawaii Division of Forestry and Wildlife's (DOFAW) brochure on what we recommend be done to minimize the effects of lighting on birds.

At a minimum, light poles should be limited to a maximum height of 25 feet since lights higher than this are more likely to cause seabird fall-out. Also, all project lighting should be directed downward and away from the shore, be shaded to prevent light from escaping horizontally, and be as low wattage as possible. It would also help if the lighting is of muted colors instead of bright white.

Potential ways to minimize the effects of above-ground wires on birds include burying wires whenever feasible, aligning wires horizontally rather than vertically, and attaching mylar flashing tape and/or large helicopter warning balls to wires to assist birds in locating the wires before striking them. We also recommend that you contact the DOFAW office in Maui for other recommendations.

In general, the Service recommends that the draft EA address potential impacts from the proposed project on the above species as well as other native Hawaiian plants and animals and their habitats and identify the Best Management Practices that will be incorporated into the project to minimize adverse impacts. For example, we recommend that clearing and grading activities be minimized and limited to the immediate project site and that adequate erosion control measures be incorporated to ensure that project-related sediments are not carried into nearby coastal waters by stormwater runoff.

We appreciate the opportunity to provide early technical assistance on the proposed project and look forward to receiving a copy of the draft EA when it is available. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Mike Richardson by telephone at (808) 541341 or by facsimile transmission at (808) 541-3470.

Sincerely,

Robert P. Smith
Pacific Islands Manager

Enclosure

cc: DOFAW, Hawaii
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii

CORRECTION

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

At a minimum, light poles should be limited to a maximum height of 25 feet since lights higher than this are more likely to cause seabird fall-out. Also, all project lighting should be directed downward and away from the shore, be shaded to prevent light from escaping horizontally, and be as low wattage as possible. It would also help if the lighting is of muted colors instead of bright white.

Potential ways to minimize the effects of above-ground wires on birds include burying wires whenever feasible, aligning wires horizontally rather than vertically, and attaching mylar flashing tape and/or large helicopter warning balls to wires to assist birds in locating the wires before striking them. We also recommend that you contact the DOFAW office in Maui for other recommendations.

In general, the Service recommends that the draft EA address potential impacts from the proposed project on the above species as well as other native Hawaiian plants and animals and their habitats and identify the Best Management Practices that will be incorporated into the project to minimize adverse impacts. For example, we recommend that clearing and grading activities be minimized and limited to the immediate project site and that adequate erosion control measures be incorporated to ensure that project-related sediments are not carried into nearby coastal waters by stormwater runoff.

We appreciate the opportunity to provide early technical assistance on the proposed project and look forward to receiving a copy of the draft EA when it is available. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Mike Richardson by telephone at (808) 541341 or by facsimile transmission at (808) 541-3470.

Sincerely,

Robert P. Smith
Pacific Islands Manager

Enclosure

cc: DOFAW, Hawaii
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 20, 1999

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

Dear Mr. Tadaki:

RE: Environmental Assessment Pre-Agency Consultation for Kapalua Site 19, TMK: 4-2-04:Por. 24, Kapalua, Maui, Hawaii

The Maui Planning Department (Department) has reviewed the project summary for the proposed 31-lot single-family residential subdivision at Kapalua and has no comments to offer at this time. We will have the opportunity to comment at the various permitting stages of development.

Thank you for your cooperation in this matter. If further clarification is required, please contact Ms. Ann T. Cua, Staff Planner, of this office at 243-7735.

Very truly yours,

JOHN E. MIN
Director of Planning

JEM:ATC:cmb
c: Clayton Yoshida, AICP, Deputy Director of Planning
Ann T. Cua, Staff Planner
Project File
General File
(s:\all\ann/sit19pre.ea)

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

MAY 26 1999

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

MAY 25 1999

Ref:PS:EH

Mr. Glenn Tadaki
Munekiyo Arakawa & Hiraga, Inc.
305 High Street
Suite 104
Wailuku, Maui, HI 96793

Dear Mr. Tadaki:

Subject: Project Summary for Kapalua Site 19:
31-Lot Residential Subdivision
TMK: 4-2-04: por. 24

We have reviewed the subject Project Description and offer the following comments for your consideration.

Engineering Branch:

We suggest that the proposed project be done according to Chapter 19.62 Flood Hazard Areas of the Maui County Code.

The extreme southwestern portion of the proposed project site, according to FEMA Community Panel Map No. 150003 0138 B, is located in Zone A2. This is an area within the 100-year flood plain, with base flood elevations and flood hazard factors determined. The remainder of the site is located in Zone C (No shading). This is an area of minimal flooding.

Thank you for the opportunity to review the subject Project Description. Please provide the DLNR with two copies of the Draft Environmental Assessment so that we can provide the Maui District Land Office with one copy for their review and comment.

Should you have any questions or require further assistance, please contact staff planner Ed Henry at (808) 587-0380.

Very truly yours,

TIMOTHY E. JOHNS
Chairperson

c.c. Engineering Branch
MDLO

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

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

JUN 0 3 1999

June 1, 1999

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

Dear Mr. Tadaki:

SUBJECT: ENVIRONMENTAL ASSESSMENT
KAPALUA SITE 19
TMK: (2) 4-2-004:024 (PORTION OF)

We reviewed the subject application and have the following comments.

1. The subdivision shall comply with the provisions of Title 18, Maui County Code, "Subdivisions."

2. A detailed final drainage report, and an erosion Best Management Practices (BMP) plan shall be submitted with the construction plans for review and approval prior to issuance of building or grading permits. The drainage report shall include hydrologic and hydraulic calculations and the schemes for disposal of runoff waters. It must comply with the provisions of the "Rules for 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.

3. The applicant shall obtain street name approvals from the Commission on Naming Streets, Parks, and Facilities and show street names on the map.

4. The existing streets providing access to the subdivision shall have a twenty (20) foot minimum pavement width.

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

Sincerely,

DAVID GOODE
Deputy Director of Public Works
and Waste Management

DG:msc/mt

S:\LUCA\CZM\KAPA19.WPD

BENJAMIN J. CAYETANO
GOVERNOR

JUN 1 0 1999

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

STP 8.9106

June 14, 1999

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

Dear Mr. Tadaki:

Subject: Kapalua Site 19
EIS Pre-Consultation
TMK: 4-2-04: por. 24

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

While our prior comments of September 8, 1998, STP 8.8796 (copy attached), were in response to the Kapalua Site 29 project for a SMA Use Permit, they are also applicable to the subject project. We have provided similar comments to two (2) other Kapalua Land Company projects.

For our purposes, piecemealing of the projects should be discouraged.

We appreciate the opportunity to provide comments.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

Attach.

c: Maui County Planning Department

STP 8.8796

September 8, 1998

Ms. Lisa M. Nuyen
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Ms. Nuyen:

Subject: Kapalua Site 29
Special Management Area Use Permit
Subject I. D.: SM1 980018, PD1 980002
TMK: 4-2-04: 26

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

In general, the developer should be responsible for mitigating the impacts attributable to his development, and contributing towards required roadway improvements.

The specific requirements for improvements however, would be tied into the findings of a Traffic Impact Analysis Report (TIAR) for Kapalua Land Company. The TIAR should reflect the entire Kapalua Land Company master plan and other major developments in the area; identify the impacts to the transportation facilities; and recommend required mitigation measures, specifying those improvements to be provided by the applicant.

While the subject project by itself is not anticipated to significantly impact to our State transportation facilities, we understand Kapalua Land Company has been required to prepare a complete TIAR for our review and approval. We have no objections to the continued processing and scheduling of public hearings for the subject application.

We appreciate the opportunity to provide comments.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Responses

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 13, 1999

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

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Fujiwara:

Thank you for your April 30, 1999 letter commenting on the subject project. In response to your comments, we would like to note that Kapalua Land Company has initiated coordination for the realignment of the existing access and maintenance route to the sediment basin in the gulch adjoining the project site. Conceptually, the access and service route would be relocated beyond the limits of the project site and would be utilized by the vehicles and equipment involved in the maintenance of the sediment basin.

Thank you for providing us with your comments. Please feel free to call me should you have any questions or require additional information.

Sincerely,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Rick Kiefer, Carlsmith, Ball, Wichman, Case & Ichiki
kapalua/site 19/nrcaltr.001

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 21, 1999

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

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Phillips:

Thank you for your May 10, 1999 letter transmitting comments on the proposed project. On behalf of Kapalua Land Company, Ltd., we would like to note that a traffic study which examines traffic conditions and includes appropriate mitigative measures will be included in the Draft Environmental Assessment (EA) for the proposed project.

A copy of the Draft EA will be provided for your review. Thank you again for providing us with your comments.

Sincerely,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Wayne Yoshioka, Parsons Brinkerhoff
kapalua/site19/mpdltr.001

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

MUNEKIYO, ARAKAWA & HIRAGA, INC.

May 21, 1999

Robert P. Smith, Pacific Islands Manager
U.S. Fish and Wildlife Service
Pacific Islands Ecoregion
Box 50088
Honolulu, Hawaii 96850

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Smith:

Thank you for your May 18, 1999 letter commenting on the subject project. On behalf of Kapalua Land Company, Ltd, we would like to note that the subdivision lighting criteria which you have cited has been provided to the project engineer for review. In this regard, project-related lighting will utilize appropriate design features to minimize impacts to migratory seabirds that may be traversing the area.

In addition, the proposed project will comply with the applicable provisions of the Maui County Code pertaining to grading, soil erosion, and sedimentation control.

A copy of the Draft EA will be provided for your review. Thank you again for providing us with your comments.

Sincerely,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
kapalua\site19\uslws.ltr

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

MUNEKIYO, ARAKAWA & HIRAGA, INC.

June 3, 1999

Timothy E. Johns, Chairperson
Department of Land and
Natural Resources
State of Hawaii
P.O. Box 621
Honolulu,Hawaii 96809

SUBJECT: Kapalua Site 19
31-Lot Residential Subdivision
TMK 4-2-04: por. 24

Dear Mr. Johns:

Thank your for your May 25, 1999 letter providing the Engineering Branch's comments on the proposed project. On behalf of Kapalua Land Company, Ltd., we would like to note the following.

A project site overlay of the Flood Insurance Rate Map (FIRM) for the area (Panel 150003/0138B) was prepared by the project's civil engineer and reveals that the entire project site is located in Flood Zone C, an area of minimal flooding. Refer to the attached. As indicated by the attached FIRM/project site overlay, no portion of the project site is located in Flood Zone A2. In this regard, the provisions of Chapter 19.62 of the Maui County Code pertaining to Flood Hazard areas are not considered applicable.

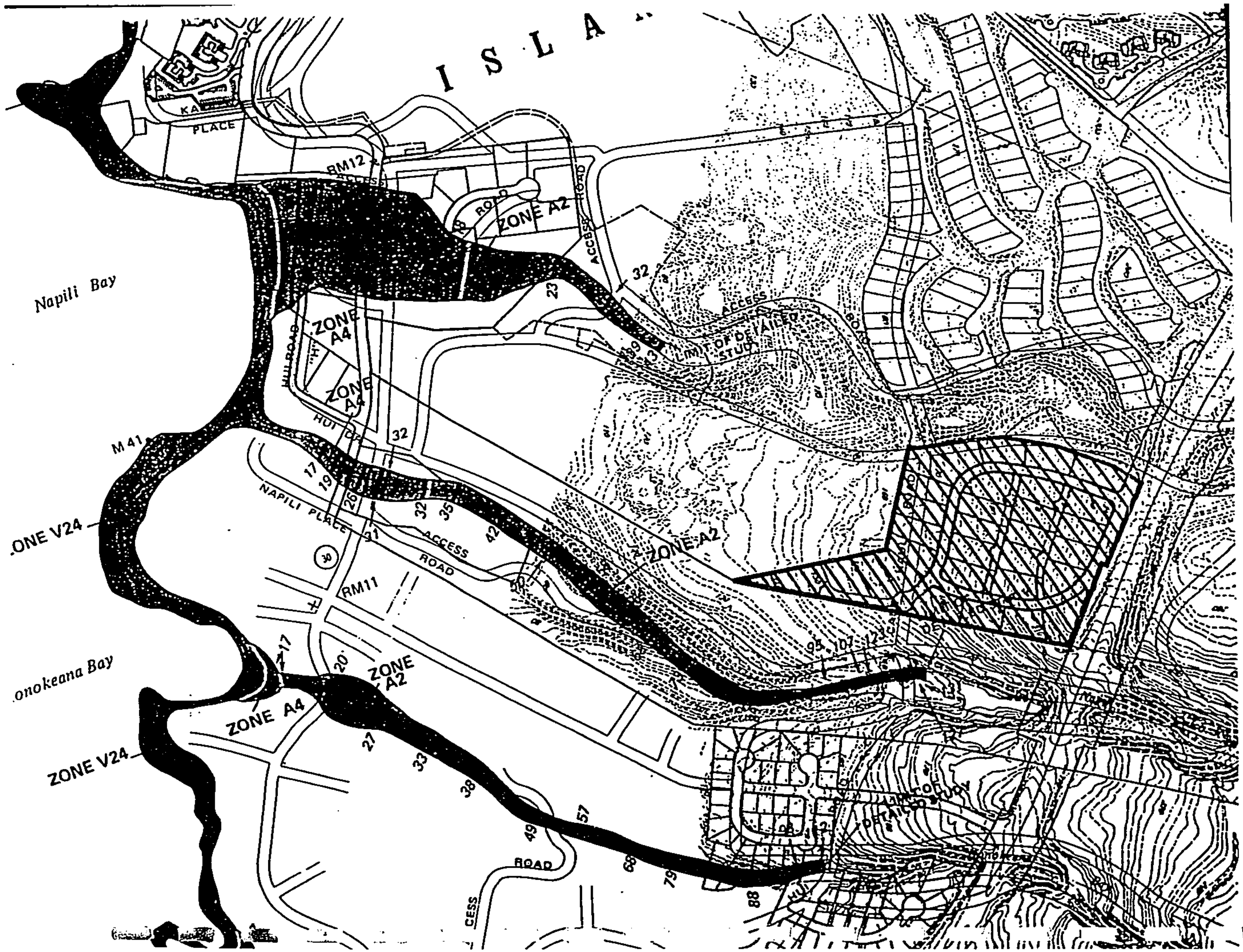
Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

Thank you again for providing comments on the proposed project. A copy of the project's Draft Environmental Assessment will be provided to you for review.

Very truly yours,

Glenn Tadaki, Planner

GT:to
Attachment
cc: Bob McNatt, Kapalua Land Company, Ltd. (w/attachment, via fax)
Warren Unemori, Warren S. Unemori Engineering, Inc. (w/out attachment, via fax)
Ann Cua, Planning Department, (w/attachment, via mail)
kapalua/site19/dirrltr.001


ISLA
Napili Bay
onokeana Bay
ZONE V24
ONE V24
ZONE A2
ZONE A4
ZONE A2
ZONE A4
ZONE A4
ZONE A2
ZONE A2
RM12
RM11
M 41
KA
PLACE
HUI ROAD
HUI DR
NAPILI PLACE
ACCESS ROAD
ACCESS ROAD
ACCESS ROAD
LIMIT OF DETAILED STUDY
ROAD

MUNEKIYO, ARAKAWA & HIRAGA, INC.

June 10, 1999

David Goode, Deputy Director
Department of Public Works
and Waste Management
County of Maui
200 South High Street
Wailuku, Hawaii 96793

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Goode:

Thank you for your June 1, 1999 letter commenting on the subject project. On behalf of Kapalua Land Company, Ltd., we would like to note the following.

1. The proposed subdivision will comply with the provisions of Chapter 18 of the Maui County Code pertaining to "Subdivisions".

2. In connection with the submittal of construction plans for the proposed subdivision, a detailed final drainage report and Best Management Practices (BMPs) for erosion control will be submitted to the Department of Public Works and Waste Management (DPWWM) for review and approval prior to the issuance of construction permits.

3. Street name approvals will be obtained from the Commission on Naming Streets, Parks, and Facilities and the names of the streets will be indicated on the subdivision's construction plans and final subdivision map.

4. Existing streets providing access to the proposed subdivision will have a minimum pavement width of 20 feet.

Thank you for providing us with your comments. Please feel free to call me should you have any questions or require additional information.

Very truly yours,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Ann Cua, Planning Department (via delivery)

kapalua/site19/dpwwm.ltr

MUNEKIYO, ARAKAWA & HIRAGA, INC.

July 6, 1999

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

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Hayashida:

Thank you for your June 14, 1999 letter commenting on the subject project. On behalf of Kapalua Land Company, Ltd., we would like to note that a Traffic Impact Analysis Report (TIAR) that reflects Kapalua Land Company's master plan, as well as impacts to transportation facilities and recommended mitigative measures and improvements, will be prepared in connection with the District Boundary Amendment application for Lahaina Project District No. 2 (Kapalua Mauka), which is anticipated to be filed within the next year.

A copy of the subject's Draft Environmental Assessment will be provided for your review. Thank you again for providing us with your comments.

Sincerely,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Wayne Yoshioka, Parsons Brinckerhoff
Ann Cua, Planning Department
kapalua/site19/dottr.001

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

Chapter X

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

X. LETTERS RECEIVED DURING THE DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC COMMENT PERIOD AND RESPONSES TO SUBSTANTIVE COMMENTS

Pursuant to the requirements of the environmental review process, letters received during the Draft Environmental Assessment public comment period, as well as responses to substantive comments, are included in this section.

Federal Agencies	*Date of Letter*	*Date of Response*
Natural Resources Conservation Service	7/14/99	8/9/99
U.S. Department of the Army, Corps of Engineers	7/1/99	7/15/99
State Agencies	***Date of Letter***	***Date of Response***
Department of Health - Maui	6/29/99	NRR
Department of Health - Honolulu	7/28/99	8/9/99
Department of Transportation	8/6/99	---
Department of Land and Natural Resources - Honolulu	7/19/99	NRR
Department of Accounting and General Services	6/29/99	NRR
Department of Hawaiian Home Lands	7/26/99	NRR
County Agencies	***Date of Letter***	***Date of Response***
Department of Public Works and Waste Management	7/21/99	NRR
Department of Parks and Recreation	7/7/99	NRR
Department of Fire Control	6/17/99	NRR
Department of Housing and Human Concerns	7/13/99	NRR
Others	***Date of Letter***	***Date of Response***
Maui Electric Company, Ltd.	6/24/99	NRR
NRR - No Response Required		

DRAFT ENVIRONMENTAL ASSESSMENT COMMENT LETTERS

JAMES KIMO APANA
MAYOR

CLAYTON T ISHIKAWA
CHIEF

FRANK E FERNANDEZ JR
DEPUTY CHIEF

'99 JUN 19 P2:40

COUNTY OF MAUI
DEPARTMENT OF FIRE CONTROL

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

June 17, 1999

Ms Ann T. Cua, Staff Planner
County of Maui, Department of Planning
250 South High Street
Wailuku, HI 96793

RE: Kapalua 19; TMK: 4-2-04:24; SM1 990009; CPA 990003;
CIZ 990008, PD1 990002 and PD2 990001

Dear Ms Cua,

Thank you for the opportunity to comment on the special management area, community plan amendment, change in zoning, and project district Phase I and II approvals for Kapalua 19.

The Department of Fire Control has no objection to granting the applications.

If you have any questions, you may contact me at 243-7566.

Sincerely,

LEONARD F NIEMCZYK
Captain, Fire Prevention Bureau

Maui Electric Company, Ltd. • 210 West Kamehameha Avenue • PO Box 398 • Kahului, Maui, HI 96733-6898 • (808) 871-84(

'99 JUN 28 :12 :22

June 24, 1999

Mrs. Ann T. Cua
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Subject: Change in Zoning Application for Kapalua Site 19
Kapalua, Maui, Hawaii
TMK: 4-2-04: portion of 24

Dear Mrs. Cua,

Thank you for the opportunity to review and comment on the subject project.

Maui Electric Company's distribution facilities are located in the vicinity of the proposed project area. As stated in Chapter III Paragraph C8, we will be able to extend our facilities to meet the power requirements of this proposed project. Therefore, we will not require any work to be done at this time.

However, at the time of development, we request that the customer contact us to review and comment on their project design prior to construction. In reference to the localized non-glare streetlights, this issue must be addressed at the time of the project submittal and the customer should be aware that our Company would provide our normal street light standard.

Should you have any further questions, please contact me at (808) 871-2366.

Sincerely,

Gregorysenn Kauhi
Distribution Engineering Supervisor

GK:gk

BENJAMIN J. CAYETANO
GOVERNOR

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

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

'99 JUN 29 P2:07

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

June 29, 1999

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

Dear Mr. Min:

Subject: Kapalua Site 19
TMK: (2) 4-2-04: por. 24
SM1 990009, CPA 990003, CIZ 990008, PD1 990002,
PD2 990001

Thank you for the opportunity to comment on the Use Permit applications. Comments from this office were transmitted to our Honolulu Office. A coordinated response is forthcoming.

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

Sincerely,

HERBERT S. MATSUBAYASHI
District Environmental Health Program Chief

c: Art Bauckham

BENJAMIN J. CAYETANO
GOVERNOR

RAYMOND H. SA[illegible]
COMPTROLLER

'99 JUL 30 2:09

FILE NO _____

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

June 29, 1999

MEMORANDUM

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

ATTN.: Mr. Ann T. Cua, Staff Planner

FROM: Randall M. Hashimoto, State Land Surveyor

SUBJECT: I.D. No. SM1 990009, CPA 990003, CIZ 990008,
PD1 990002, PD2 990001
TMK: 4-2-04:Por. 24
Project Name: Kapalua Site 19
Applicant: Kapalua Land Company, Ltd.

REMARKS:

The subject proposal has been reviewed and confirmed that no Government Survey Triangulation Stations and Benchmarks are affected. Survey has no objections to the proposed project.

for RANDALL M. HASHIMOTO
State Land Surveyor

JUL 0 5 1999

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

REPLY TO
ATTENTION OF

July 99, 1999

Civil Works Technical Branch

Ms. Ann T. Cua, Staff Planner
County of Maui
Department of Planning
250 South High Street
Wailuku, Maui, Hawaii 96793

Dear Ms. Cua:

Thank you for the opportunity to review and comment on the Special Management Area Application and Draft Environmental Assessment (DEA) for the Kapalua Site 19 Project, Kapalua, Maui (TMK 4-2-4: por. 24). 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. As stated in our previous letter dated April 30, 1999, there is not enough information in the report to determine whether or not a DA permit will be required. For further information, please contact Mr. William Lennan of our Regulatory Branch at (808) 438-9358 (extension 13) and refer to file number 990000410. A copy of the letter is enclosed for your information.

b. The flood hazard information provided on page 15 of the DEA is correct.

Sincerely,

James K. Hatashima
Acting Chief, Civil Works
Technical Branch

Enclosure

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE WAILUKU, HAWAII 96793

JAMES "KIMO" APANA
Mayor

FLOYD S. MIYAZONO
Director

ELIZABETH D. MENOR
Deputy Director

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

'99 JUL -9 A8:33

July 7, 1999

T O: John E. Min, Planning Director

F R O M: FLOYD S. MIYAZONO, Director

SUBJECT: **Kapalua Site 19**
TMK: 4-2-004:POR. 24
SM1 990009, CPA 990003, CIZ 990008, PD1 990002, PD2 990001

We have reviewed the above referenced application, and a memo dated May 18, 1999 was transmitted to Land Use and Codes Administration. The memo stated that we had no objections to a Letter of Credit for parks and playgrounds assessment ($58,380.00) and that we reserve approval of a nearby linear park until plans can be reviewed to assure adequate public access.

Thank you for the opportunity to review and comment on this matter. Please feel free to contact me or Patrick Matsui, Chief of Parks Planning and Development, at extension 7387 should you have any other questions.

c: Patrick Matsui, Chief-Planning and Development
Gerald Unabia, Parks Project Manager
Project Files

lah\jemin.mm2

DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
HOUSING DIVISION
COUNTY OF MAUI

JAMES "KIMO" APANA
Mayor

ALICE L. LEE
Director

PRISCILLA P. MIKELL
Deputy Director

'99 JUL 15 P12:29

200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • PHONE (808) 243-7751, (808) 243-7351 • FAX (808) 243-7829

July 13, 1999

TO: Mr. John Min
Director of Planning

FROM: Ms. Alice L. Lee
Director of Housing and Human Concerns

SUBJECT: Kapalua Site 19
Application For Community Plan Amendment
Application For Change In Zoning
Application For Project District Phase I and Phase II Approvals
Application For Special Management Area Use Permit
I.D. No. SM1 990009, CPA 990003, CIZ 990008, PD1 990002, PD2 990001
TMK: 4-2-04:POR. 21

The Department of Housing and Human Concerns is currently in the process of amending its affordable housing policy and we have no comments to offer at this time.

Please call Wayde Oshiro of our Housing Division at extension 7356 if you have any questions.

WTO:wo

xc: Housing Administrator
Project File

5172

USDA

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

210 Imi Kala St.
Suite 209
Wailuku, HI 96793

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

'99 JUL 16 P2:25

DATE: July 14, 1999

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

Dear Mr. Min,

SUBJECT: Kapalua Site 19; TMK: 4-2-004: por. 24
I.D. SM1 990009, CPA 990003, CIZ 990008, PD1 990002, PD2 990001

The existing sediment basin which will receive drainage runoff from the subdivision may need to be designed for proper sizing. Access to and from the basin for operation and maintenance need to be planned carefully.

Thank you for the opportunity to comment.

Sincerely,

Neal S. Fujiwara
District Conservationist

'99 JUL 20 P1:03

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

JUL 19 1999

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

Ref: PS:EH

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

Dear Mr. Min:

Subject: Applications for Community Plan Amendment, Change in Zoning, Project District Phase I and II Approvals, and Special Management Area Use Permit For Kapalua Site 19

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

Engineering Branch:

We confirm that the proposed project site, according to FEMA Community Panel Number 15003 0138 B (Revised June 1, 1981), is located in Zone C. This is an area determined to have minimal flooding.

The Panel Number and revised date should be included in Section 4- Flood and Tsunami Hazard on page 15.

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,

for TIMOTHY E. JOHNS
Chairperson

c.c. Engineering Branch
MDLO

please contact staff planner Ed Henry at 587-0380.

Very truly yours,

for TIMOTHY E. JOHNS
Chairperson

c.c. *Engineering Branch*
MDLO

JAMES "KIMO" APANA
Mayor

CHARLES JENCKS
Director

DAVID C. GOODE
Deputy Director

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

'99 JUL 22 A10:38

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

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 21, 1999

MEMO TO: JOHN E. MIN, DIRECTOR OF PLANNING

FROM: for CHARLES JENCKS, DIRECTOR OF PUBLIC WORKS AND WASTE MANAGEMENT

SUBJECT: SPECIAL MANAGEMENT AREA PERMIT APPLICATION, COMMUNITY PLAN AMENDMENT, CHANGE IN ZONING, PROJECT DISTRICT 1 AND PROJECT DISTRICT 2 APPROVALS
KAPALUA SITE 19
TMK: (2) 4-2-004:024 (PORTION OF)
SM1 99/0009, CP 99/0003, CIZ 99/0008,
PD1 99/0002, PD2 99/0001

We reviewed the subject application and have the following comments.

1. All road lots shall be improved to Maui County standards in compliance with Maui County Code Section 18.16.150.

2. A 20 foot radius minimum shall be provided at all intersections of the proposed subdivision.

3. A detailed final drainage report and an erosion control Best Management Practices (BMP) shall be submitted with the construction plans for review and approval prior to the issuance of the building and 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 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.

4. The subdivision shall comply with the provisions of Title 18, Maui County Code, "Subdivisions."

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

DG:msc/mt

S:\LUCA\CZM\kapa-19.wpd

54:9

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

'99 JUL 27 P12:19

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

July 26, 1999

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

Dear Mr. Min:

Subject: Kapalua Site 19, SM1 990009, CPA 990003, CIZ 990008, PD1 990002, PD2 990001, TMK 4-2-4:24 por., Kapalua, Maui, Dated May, 1999

Thank you for the opportunity to review the subject application. The Department of Hawaiian Home Lands has no comment to offer.

If you have any questions, please call Daniel Ornellas at 586-3836.

Aloha,

Raynard C. Soon, Chairman
Hawaiian Homes Commission

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

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
File:

July 28, 1999

99-130/epo

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

Dear Mr. Min:

Subject: SM1 990009, CPA 990003, CIZ 990008, PD1 990002, PD2 990001
Kapalua Site 19:31 Lot Single Family Residential Subdivision
Kapalua, Maui
TMK: 4-2-4: por. 24

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

Solid Waste

The Department of Health (DOH) is pleased to acknowledge the developer's commitment to develop a waste management plan in cooperation with Maui County's Solid Waste Division. The DOH urges the developer to extend the scope of the waste management plan beyond the clearing and grubbing phase of the project. Such a plan should take advantage of all reasonable waste reduction and recycling opportunities in the design, construction and operation of the proposed project. Examples of plan elements could include:

1. Specifically providing for recycling facilities in the project design to facilitate recycling activities during occupancy.

2. Use of recycled content building materials in project construction.

We have enclosed a few suggested waste minimization measures for implementation in the design and construction of new developments.

Please contact the Office of Solid Waste Management at 586-4240 if there are any questions concerning these comments.

Noise Concerns

1. Noise associated with the adjacent golf course, such as early morning mowing activities, may have adverse impacts on future residents. Adequate buffers should be considered for those holes bordering or closest to the residences.

2. Activities associated with the construction of the project must comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."

   a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the maximum permissible sound levels of the regulations as stated in Section 11-46-6(a).

   b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).

   c. The contractor must comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).

Should there be any questions on this matter, please call Mr. Jerry Haruno, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Wastewater

No concerns, as wastewater will be connected to the County sewer system.

Fugitive Dust Concerns

There is a significant potential for fugitive dust to be generated during all phases of construction and landscaping activities. The close proximity to existing residences in the area may exacerbate potential dust problems. Implementation of adequate dust control measures during all phases of the project is warranted. Construction activities must comply with the provisions of Chapter 11-60.1, Hawaii Administrative Rules, "Air Pollution Control," section 11-60.1-33 on Fugitive Dust.

99-130/epo

The contractor should provide adequate means to control dust from road areas and during the various phases of construction activities. This means include, but are not limited to:

a. planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing material transfer points and on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

b. providing an adequate water source at the site prior to start-up of construction activities;

c. landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;

d. controlling of dust from shoulders, project entrances, and access roads;

e. providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and

f. providing dust control for bare areas on individual lots, prior to lots being sold and eventually grassed by future owners.

If you have any questions regarding fugitive dust, please contact Mr. Timothy Carvalho of the Clean Air Branch at 586-4200.

Water Pollution

1. The applicant should contact the U. S. Army Corps of Engineers to identify whether a Federal permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "Any applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for each of the following activities which discharge into State waters:

   a. Discharge of storm water runoff associated with industrial activities;

b. Discharge of storm water runoff associated with construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five (5) acres of total land area;

c. Discharge of treated contaminated groundwater from leaking underground storage tank remedial activity;

d. Discharge of once through cooling water less than one million gallons per day (1 mgd);

e. Discharge of hydrotesting water;

f. Discharge associated with construction activity dewatering; and

g. Discharge of treated effluent from well-drilling activities.

3. The applicant may be required to apply for an Individual NPDES Permit if there is any type of process wastewater discharge from the project into State waters.

The application form(s) for those discharges which need to obtain a certification, coverage, and/or permit will be provided upon request.

If you have any questions, please call Ms. Joanna L. Seto, P.E., Engineering Section of the Clean Water Branch, at 586-4309.

Sincerely,

Virginia Pressler

GARY GILL
Deputy Director for
Environmental Health

Enclosure

c: OSWM
NR&IAQB
WWB
CAB
CWB
MDHO

5539

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

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

'99 AUG 11 P1:00

IN REPLY REFER TO:

STP 8.9178

August 6, 1999

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

Dear Mr. Min:

Subject: Kapalua Site 19 Applications for
Community Plan Amendment CPA 990003
Change in Zoning CIZ 990008
Project District Phase I and II Approvals PD1 990002/PD2 990001
Special Management Area Use Permit, SM1 990009
Kapalua, Maui, TMK: 4-2-04: Por. 24

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

Our prior comments for the EIS Pre-Consultation emphasized the need for a Traffic Impact Analysis Report that reflects the entire Kapalua Land Company master plan and other major developments in the area. We still have not received this report.

In the meantime, we offer the following comments specific to the subject project:

1. Appendix D, Traffic Impact Analysis Report (TIAR), should be revised to (1) reflect a 20-year projected future traffic; (2) include a sight distance report for the access to Honoapiilani Highway; and (3) evaluate the distance requirements along the access road from Honoapiilani Highway to the locked gate that will safely accommodate emergency, delivery and construction vehicles (one vehicle length is inadequate).

2. An enhanced valuation fee may be imposed for the change in use of the service access to Honoapiilani Highway. An administrative fee of $1,000 will be imposed to process the request for each change in access. The applicant should be advised to contact our Highways Division, Right-of-Way Branch at (808) 692-7325 for more information.

3. Although traffic is currently light on Honoapiilani Highway in the vicinity of the proposed access road, other factors, such as limited sight distance and the tendency of southbound drivers to exceed the 45-mph posted speed limit while going downhill, require traffic mitigation measures for safe access to the proposed project. The TIAR must evaluate the need for and recommend specific roadway mitigation measures, including, but not limited to, a right-turn southbound deceleration lane, a right-turn southbound acceleration lane, a left-turn northbound deceleration lane and a left-turn shelter/acceleration lane.

4. Statements regarding "appropriate centerline pavement striping" appear in Chapter 3, Section C.4 of the Draft Environmental Assessment (DEA) and in the TIAR, Appendix D, should be expanded to specify what is appropriate.

5. A more detailed drainage study is required. No additional storm water runoff will be permitted in the State highway right-of-way.

6. All required highway improvements must be planned, designed and constructed by the applicant at no cost to the State.

7. All construction plans within the State highway right-of-way must be submitted for our review and approval.

8. In the DEA, locations and descriptions of accesses, both existing and proposed, from both Pineapple Hill and Kapalua Site 19 to Honoapiilani Highway (State Route 30), should be clearly shown on the project location map, Figure 2, and described in the text. Streets and accesses referred to within the application should be shown and identified by name on the various maps.

We appreciate the opportunity to provide comments.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Attach.

S12

DIR 0447

STP 8.9106

June 14, 1999

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

Dear Mr. Tadaki:

Subject: Kapalua Site 19
EIS Pre-Consultation
TMK: 4-2-04: por. 24

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

While our prior comments of September 8, 1998, STP 8.8796 (copy attached), were in response to the Kapalua Site 29 project for a SMA Use Permit, they are also applicable to the subject project. We have provided similar comments to two (2) other Kapalua Land Company projects.

For our purposes, piecemealing of the projects should be discouraged.

We appreciate the opportunity to provide comments.

Very truly yours,

for KAZU HAYASHIDA
Director of Transportation

Attach.

EKT/JT:sy
c: Maui County Planning Department
bc: HWY-P, STP

STP 8.8796

September 8, 1998

Ms. Lisa M. Nuyen
Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Dear Ms. Nuyen:

Subject: Kapalua Site 29
Special Management Area Use Permit
Subject I. D.: SM1 980018, PD1 980002
TMK: 4-2-04: 26

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

In general, the developer should be responsible for mitigating the impacts attributable to his development, and contributing towards required roadway improvements.

The specific requirements for improvements however, would be tied into the findings of a Traffic Impact Analysis Report (TIAR) for Kapalua Land Company. The TIAR should reflect the entire Kapalua Land Company master plan and other major developments in the area; identify the impacts to the transportation facilities; and recommend required mitigation measures, specifying those improvements to be provided by the applicant.

While the subject project by itself is not anticipated to significantly impact to our State transportation facilities, we understand Kapalua Land Company has been required to prepare a complete TIAR for our review and approval. We have no objections to the continued processing and scheduling of public hearings for the subject application.

We appreciate the opportunity to provide comments.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

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

IN REPLY REFER TO:

STP 8.9241

'99 SEP 16 P1:42

DEPT OF PLANNING
COUNTY OF MAUI
RECEIVED

September 13, 1999

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

Dear Mr. Min:

Subject: Kapalua Site 19 Applications for
Community Plan Amendment CPA 990003
Change in Zoning CIZ 990008
Project District Phase I and II Approvals PD1 990002/PD2 990001
Special Management Area Use Permit, SM1 990009
Kapalua, Maui, TMK: 4-2-04: Por. 24

This is to follow-up our comments of August 6, 1999, STP 8.9178 (copy attached). The applicant's traffic consultant is currently coordinating with us to resolve our concerns. As such, we would have no objection to the continued processing and scheduling of public hearings for the subject applications.

However, we are still awaiting the submittal of the Traffic Impact Analysis Report (TIAR) for the entire Kapalua Land Company master plan. The report is needed to determine whether the transportation needs are being adequately addressed.

We appreciate the opportunity to provide comments.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Attach.

BENJAMIN J. CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

'99 AUG 11 P1:00

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

IN REPLY REFER TO:

STP 8.9178

August.6, 1999

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

Dear Mr. Min:

Subject: Kapalua Site 19 Applications for
Community Plan Amendment CPA 990003
Change in Zoning CIZ 990008
Project District Phase I and II Approvals PD1 990002/PD2 990001
Special Management Area Use Permit, SM1 990009
Kapalua, Maui, TMK: 4-2-04: Por. 24

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

Our prior comments for the EIS Pre-Consultation emphasized the need for a Traffic Impact Analysis Report that reflects the entire Kapalua Land Company master plan and other major developments in the area. We still have not received this report.

In the meantime, we offer the following comments specific to the subject project:

1. Appendix D, Traffic Impact Analysis Report (TIAR), should be revised to (1) reflect a 20-year projected future traffic; (2) include a sight distance report for the access to Honoapiilani Highway; and (3) evaluate the distance requirements along the access road from Honoapiilani Highway to the locked gate that will safely accommodate emergency, delivery and construction vehicles (one vehicle length is inadequate).

2. An enhanced valuation fee may be imposed for the change in use of the service access to Honoapiilani Highway. An administrative fee of $1,000 will be imposed to process the request for each change in access. The applicant should be advised to contact our Highways Division, Right-of-Way Branch at (808) 692-7325 for more information.

3. Although traffic is currently light on Honoapiilani Highway in the vicinity of the proposed access road, other factors, such as limited sight distance and the tendency of southbound drivers to exceed the 45-mph posted speed limit while going downhill, require traffic mitigation measures for safe access to the proposed project. The TIAR must evaluate the need for and recommend specific roadway mitigation measures, including, but not limited to, a right-turn southbound deceleration lane, a right-turn southbound acceleration lane, a left-turn northbound deceleration lane and a left-turn shelter/acceleration lane.

4. Statements regarding "appropriate centerline pavement striping" appear in Chapter 3, Section C.4 of the Draft Environmental Assessment (DEA) and in the TIAR, Appendix D, should be expanded to specify what is appropriate.

5. A more detailed drainage study is required. No additional storm water runoff will be permitted in the State highway right-of-way.

6. All required highway improvements must be planned, designed and constructed by the applicant at no cost to the State.

7. All construction plans within the State highway right-of-way must be submitted for our review and approval.

8. In the DEA, locations and descriptions of accesses, both existing and proposed, from both Pineapple Hill and Kapalua Site 19 to Honoapiilani Highway (State Route 30), should be clearly shown on the project location map, Figure 2, and described in the text. Streets and accesses referred to within the application should be shown and identified by name on the various maps.

We appreciate the opportunity to provide comments.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Attach.

DRAFT ENVIRONMENTAL ASSESSMENT RESPONSE LETTERS

MUNEKIYO, ARAKAWA & HIRAGA, INC.

July 15, 1999

James K. Hatashima, Acting Chief
Civil Works Technical Branch
U.S. Army Engineer District - Honolulu
Fort Shafter, Hawaii 96858-5440

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Hatashima:

Thank you for your July 1, 1999 letter to the Planning Department providing comments on the subject project. On behalf of Kapalua Land Company, Ltd., this letter is provided as a follow-up to my July 13th conversation with Bill Lennan of your Regulatory Branch concerning Department of the Army permit requirements for the project.

As we discussed, the U.S. Geological Survey (U.S.G.S.) map of the Napili Quad, identifies the two (2) unnamed gulches in the vicinity of the project site as Napili 2-3 Gulch and Napili 4-5 Gulch. Napili 2-3 Gulch lies to the northeast of the project site and separates the site from the Pineapple Hill Subdivision, while Napili 4-5 Gulch lies to the southwest and separates the site from the Honokeana Subdivision.

The U.S.G.S. map also indicates that Napili 4-5 Gulch is a blue-line drainageway, while Napili 2-3 Gulch is not. An existing detention basin is located within Napili 2-3 Gulch near the northwest corner of the project site. A sediment basin built in connection with the Natural Resource Conservation Service's (NRCS) Honolua Watershed Project is located within Napili 4-5 Gulch, about 300 feet mauka of Lower Honoapiilani Road.

Insofar as post-development surface runoff is concerned, the majority of the runoff from the subdivision will be collected by catch basins and conveyed by an underground drainage system to a drainage outlet located within the existing detention basin in Napili 2-3 Gulch which has adequate capacity to retain the additional runoff generated. The remaining runoff, from lots along the Kapalua Resort's Bay Course and lots on the westerly end of the project site, will continue to sheet flow onto the golf course as it is presently doing. No surface flows will be discharged into Napili 4-5 Gulch.

Planning • Environmental Studies • Project Management
305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Phone: (808) 244-2015 • Fax: (808) 244-8729

Based on our discussion, it was determined that a Department of the Army permit will not be needed for the proposed project. Please feel free to call me should you have any questions regarding this letter.

Very truly yours

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Ann Cua, Planning Department
kapalua/site19/armyltr.001

kapalua/site19/armyltr.001

MUNEKIYO, ARAKAWA & HIRAGA, INC.

August 9, 1999

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

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Fujiwara:

Thank you for your July 14, 1999 letter commenting on the subject project. In response to your comments, we would like to note that Kapalua Land Company has initiated coordination for the realignment of the existing access and maintenance route to the sediment basin in the gulch adjoining the project site. Conceptually, the access and service route would be relocated beyond the limits of the project site and would be utilized by the vehicles and equipment involved in the maintenance of the sediment basin.

Thank you for providing us with your comments. Please feel free to call me should you have any questions or require additional information.

Sincerely,

Glenn Tadaki, Planner

GT:to

cc; Bob McNatt and Karen Seddon, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Ann Cua, Department of Planning (via delivery)

kapalua/site19/nrcsltr.002

305 High Street, Suite 104 • Wailuku, Hawaii 96793 • ph: (808)244-2015 • fax: (808)244-8729 • email: mahinc@aloha.net

MUNEKIYO, ARAKAWA & HIRAGA, INC.

August 9, 1999

Gary Gill, Deputy Director
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

SUBJECT: Kapalua Site 19
TMK 4-2-04: por. 24

Dear Mr. Gill:

Thank you for your July 28, 1999 letter providing comments on the project from your agency's various branches. On behalf of Kapalua Land Company, Ltd., we would like to note the following.

Waste reduction and recycling opportunities will be considered in the design, construction, and operation of the project. The project will also comply with applicable Department of Health regulations pertaining to dust control, water pollution, and noise from construction activities. In addition, coordination with the U.S. Army Corps of Engineers has indicated that a Department of the Army permit will not be required for this project.

Thank you again for providing us with you comments.

Sincerely,

Glenn Tadaki, Planner

GT:to
cc: Bob McNatt and Karen Seddon, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Ann Cua, Planning Department (via delivery)
kapalua/site19/dohltr.001

305 High Street, Suite 104 • Wailuku, Hawaii 96793 • ph: (808)244-2015 • fax: (808)244-8729 • email: mahinc@aloha.net

MUNEKIYO, ARAKAWA & HIRAGA, INC.

September 8, 1999

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

SUBJECT: STP 8.9178 Relating to Kapalua Site 19 (CPA 990003, CIZ 990008, PD1 990002/PD2 990001, and SM1 990009)

Dear Mr. Hayashida:

We have received from the Maui County Planning Department, a copy of your letter dated August 6, 1999 regarding the subject matter. We offer the following responses for your review and consideration.

1. *Comments relating to TIAR*

a. *20-Year Planning Horizon*

Site 19 is part of Lahaina Project District 1 (Kapalua), which is an approved master planned development. As such, this project completes the build out of the overall plan. Site 19 is proposed to contain only 31 residential units focused toward the recreational home market. Its maximum peak hour traffic generated is 12 vehicles per hour (6 vph in and 6 vph out) during an AM mid-morning peak. Given the small scale of Site 19 and the fact that it is a part of the approved Project District 1 master planned development, we believe it is appropriate to project future traffic for the year of anticipated build out which is the Year 2001.

Longer range traffic forecasts will be produced as part of the upcoming Lahaina Project District 2 (Kapalua Mauka) development plan. This area, mauka of Honoapiilani Highway, is proposed for multi-use development and its traffic analysis will be coordinated with the West Maui Traffic Noise and Safety Evaluation Study currently being conducted for the West Maui Traffic Safety Coalition.

planning environment

305 High Street, Suite 104 • Wailuku, Hawaii 96793 • ph: (808)244-2015 • fax: (808)244-8729 • email: mahinc@aloha.net

b. ***Sight Distance***

This is an existing State Department of Transportation (SDOT) approved access. The project's civil engineer is conducting a sight distance study and preliminary indications are that sight distance is acceptable. This sight distance study will be submitted in connection with the construction plans review for the project.

c. ***Distance Requirements Along Access Road from Honoapiilani Highway***

The existing service access is currently gated and locked. The proposal is to allow Site 19 and existing Pineapple Hill residents to utilize this gated access as well. An entry device would allow only residents to access these small developments. Because residents would have to pause to actuate the entry device, it was recommended in the traffic impact analysis report to provide storage for at least one vehicle. We agree with SDOT that this distance should accommodate emergency, delivery, and construction vehicles. The existing gate is located approximately 70 feet from the outside edge of the concrete drainage located west of Honoapiilani Highway. This distance can accommodate almost three passenger vehicles and is more than enough to accommodate emergency, delivery, and construction vehicles.

2. ***Enhanced Valuation Fee***

The proposed access to Honoapiilani Highway was initially granted without restrictions. Historically, this access has been used by residents of the Kapalua Resort. In this context, the applicant is proposing to re-implement this access point for resident use. We will be happy to work with the Right-of-Way Branch to clarify the use status of the Honoapiilani Highway access point to Site 19.

3. ***Traffic Mitigation Measures***

Field survey of the existing intersection by the project's civil engineer revealed the following:

- there is an existing northbound left-turn deceleration lane.

- there is sufficient roadway width to install a southbound right-turn deceleration lane and a southbound right-turn acceleration lane by restriping Honoapiilani Highway.
- a left-turn shelter/acceleration lane for traffic turning out of the Site 19 access is not needed given the low traffic volumes forecasted for this movement and the existence of two northbound lanes on Honoapiilani Highway at this location. However, there is room in the existing painted median to provide it if SDOT so desires.

The details of the speed-change lanes will be finalized with SDOT during design.

4. ***Specify Centerline Striping***

Appropriate centerline striping for the access would typically be a double yellow centerline leading up the access to the gate. The details of this striping will be finalized at time of design.

5. ***Drainage Study Requirement***

The proposed development will not contribute additional storm runoff onto Honoapiilani Highway. The subject property is located down-gradient from Honoapiilani Highway.

6. ***Improvements at No Cost to the State***

Any improvements which may be required on Honoapiilani Highway will be planned, designed and constructed by the applicant at no cost to the State.

7. ***Construction Plans Review***

Plans for construction within the State right-of-way will be submitted to the Department of Transportation for review and approval.

8. ***References to Access Points in Draft EA***

Text and maps contained in the EA will be revised to indicate and clarify street and access locations.

We look forward to working with your staff as the project progresses to the design stage. In the mean time, if there are any questions regarding the proposed action, please do not hesitate to call.

Very truly yours,

Michael T. Munekiyo, A.I.C.P.
Project Manager

MTM:to
cc: Bob McNatt, Kapalua Land Company, Ltd.
Warren Unemori, Warren S. Unemori Engineering, Inc.
Wayne Yoshioka, Parsons Brinkerhoff
Ann Cua, Planning Department (via delivery)

kapalua/site19/doltr.002

Chapter XI

List of Permits and Approvals

XI. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required prior to the implementation of the project.

State of Hawaii

1. National Pollutant Discharge Elimination System (NPDES) Permit

County of Maui

1. Community Plan Amendment
2. Change in Zoning
3. Project District Phase I Approval
4. Project District Phase II Approval
5. Special Management Area Use Permit
6. Construction Permits (e.g., grubbing, grading, driveway, electrical, plumbing)

References

References

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

Telephone conversation with County of Maui Fire Department employee, Cindy Kagoshima, February 1996.

Telephone conversation with County of Maui Police Department employee, Greg Takahashi, February 1996.

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

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

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

Maui News article, March 19, 1999.

Michael T. Munekiyo Consulting, Inc., Draft Supplemental Environmental Impact Statement - Honoapiilani Highway (FAP Route 30) Puamana to Honokowai, January 1994.

Munekiyo & Arakawa, Inc., Applications for Special Management Area Permit and Shoreline Setback Variance- Lot 45 Subdivision, August 1994.

Munekiyo, Arakawa & Hiraga, Inc., Application for Change in Zoning - Wainee Office Building, December 1998.

Munekiyo, Arakawa & Hiraga, Inc., Application for Special Management Area Use Permit - Kaanapali Ocean Resort, March 1997.

Munekiyo, Arakawa & Hiraga, Inc., Applications for Special Management Area Use Permit and Phase I Planned Development Approval - Kapalua Site 29, July 1998.

Munekiyo, Arakawa & Hiraga, Inc., Final Environmental Assessment - Honoapiilani Highway Widening (Kaanapali Parkway to Honokowai Stream), April 1998.

Munekiyo, Arakawa & Hiraga, Inc., Final Environmental Assessment - Hyatt Regency Maui Spa and Fitness Facility, December 1998.

Munekiyo, Arakawa & Hiraga, Inc., Hale Mahaolu Eono - Market Assessment, January 1999.

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

University of Hawaii, Department of Geography, Atlas of Hawaii, Second Edition, 1983.

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

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

Appendices

Appendix A

Summary Letter Report for an Archaeological Inventory Survey

XAMANEK RESEARCHES
P.O. BOX 131
PUKALANI, MAUI, HAWAII 96788
Phone/FAX: (808) 572-8900
Phone/FAX: (808) 572-6118

Robert McNatt, Vice President
Kapalua Land Company, Ltd.
1000 Kapalua Drive
Kapalua, Maui HI 96761

Attention: Robert McNatt

30 April 1999

Subject: Field work summary letter report for an archaeological inventory survey conducted on a parcel of land, Kapalua Site 19, in Honolua *ahupua'a*, Lahaina District, Island of Maui (TMK: 4-2-04: por 24). Note: draft inventory survey report pending.

Xamanek Researches carried out an archaeological inventory survey on a c. 20 acre portion of land known as Kapalua Site 19, located in Honolua *ahupua'a*, Lahaina District, Maui, in late April 1999 (Figure 1). This property has been and is currently planted in pineapple. The subject parcel lies adjacent to and *makai* (northwest) of Honoapi'ilani Highway. The project area is bounded by leased (from the State) land to the southwest, the Kapalua Bay Golf Course to the northwest, and an apparently unnamed gulch to the north (Figure 2). Development plans for the study area include the construction of 31 custom house lots and infrastructure.

The project area ranges from a high of c. 240 ft. AMSL to a low of 136 ft. AMSL. The surveyed area lies relatively near the coast and receives c. 30 – 40 inches of annual precipitation. Observed vegetation on the property consisted of cultivated pineapple plants (first crop harvested before survey), and alien grasses and annual weeds. The nearby gulch contained various alien plant species including Formosan *koa* trees, century plants, grasses, and annual weeds. In addition, isolated *kukui* (*Aleurites moluccana*) nut trees and a few *'ilima (Sida fallax)* shrubs were noted in the gulch. These were the only indigenous plants observed near the overall project area.

Our archaeological inventory survey was carried out in 2 phases. A pedestrian inspection of the pineapple field comprised the bulk of the survey. All field access roads and the adjacent right-of-way along Honoapi'ilani Highway were visually inspected. During the course of the walkover it became clear that the project area had been extensively impacted by cultivation. Exposed subsoil and/or weathered bedrock were clearly visible in many of the access roads. In addition, weathered bedrock pieces were clearly visible in portions of the pineapple fields. The heavily eroded soils were inspected and probed in 2 instances. It appears highly probable that any cultural deposits

that may have once been in the relatively thin soil (i.e. less than 20 cm. thick) have been completely impacted by cultivation. While the pineapple field area has been heavily altered by agricultural activities, the adjacent gulch to the north has been less affected by earthmoving activities. We noted a possible rock alignment c. 20 m. from the project boundary and expanded our surface inspection to include the portion of the gulch that contained what appeared to be a rock wall.

Inspection of this possible alignment confirmed that it was, indeed, a rock wall. It is important to note, however, that this site does not lie on the project area. However, it is visible from the project area. Consequently, this site was inspected and recorded for informational purposes.

Site 50-50-01-4756

This site is in generally fair condition and may represent a cattle control wall. It ranges from 0.6 to 1.2 m. in height by up to 0.7 m. in width. It extends for c. 180 m. along the southern bank of the gulch. It appears, however, to have been impacted in several areas by bulldozer push from the nearby project area during past agricultural operations. In addition, construction activities associated with a drainage culvert on the eastern side of the gulch may also have impacted the Site 4756 wall. This site qualifies for significance under Criterion "d" of the Federal and State historic preservation guidelines. No further archaeological work is recommended for this site at this time. However, additional work will need to take place if development plans call for the alteration of the gulch at any time in the future.

Summary

No significant cultural resources were located on the subject parcel during our archaeological inventory survey. Consequently, no further archaeological work is recommended for the parcel known as Site 19 at this time. However, it is important to point out that Site 4756 is located near the project area. Consequently, care should be used during construction activities in order to not impact the relatively nearby Site 4756 wall.

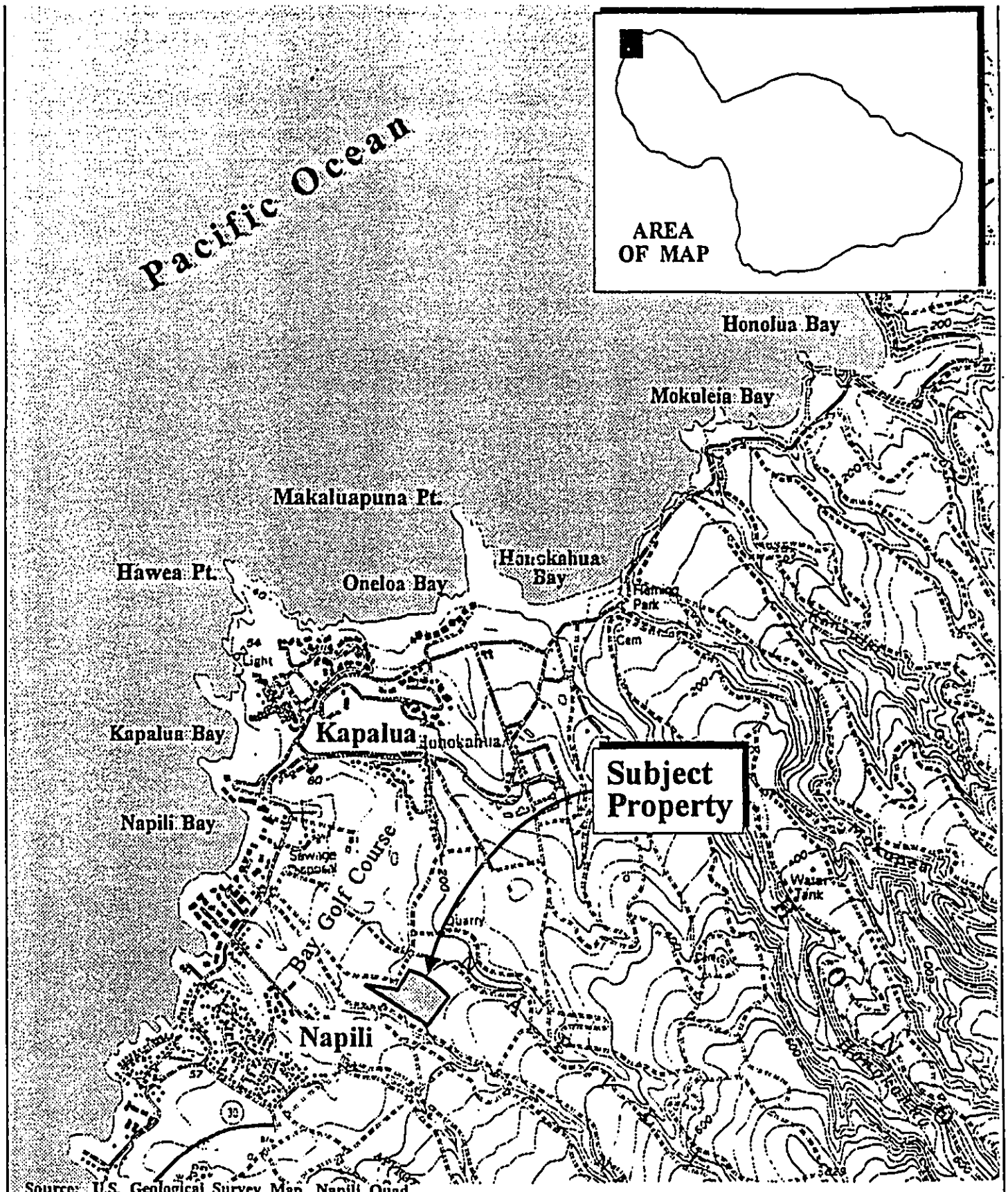
Please contact us if you require any information or have any questions about this letter report. As noted above, our draft inventory survey report will be forthcoming.

Sincerely,

Erik M. Fredericksen

Erik M. Fredericksen

c. Glenn Tadaki, Planner, Munekiyo, Arakawa & Hiraga, Inc.



Kapalua Site 19

Regional Location Map

MUNEKIYO ARAKAWA & HIRAGA, INC.

1000 0 2000 4000 Feet

Prepared for: Kapalua Land Company, Ltd.

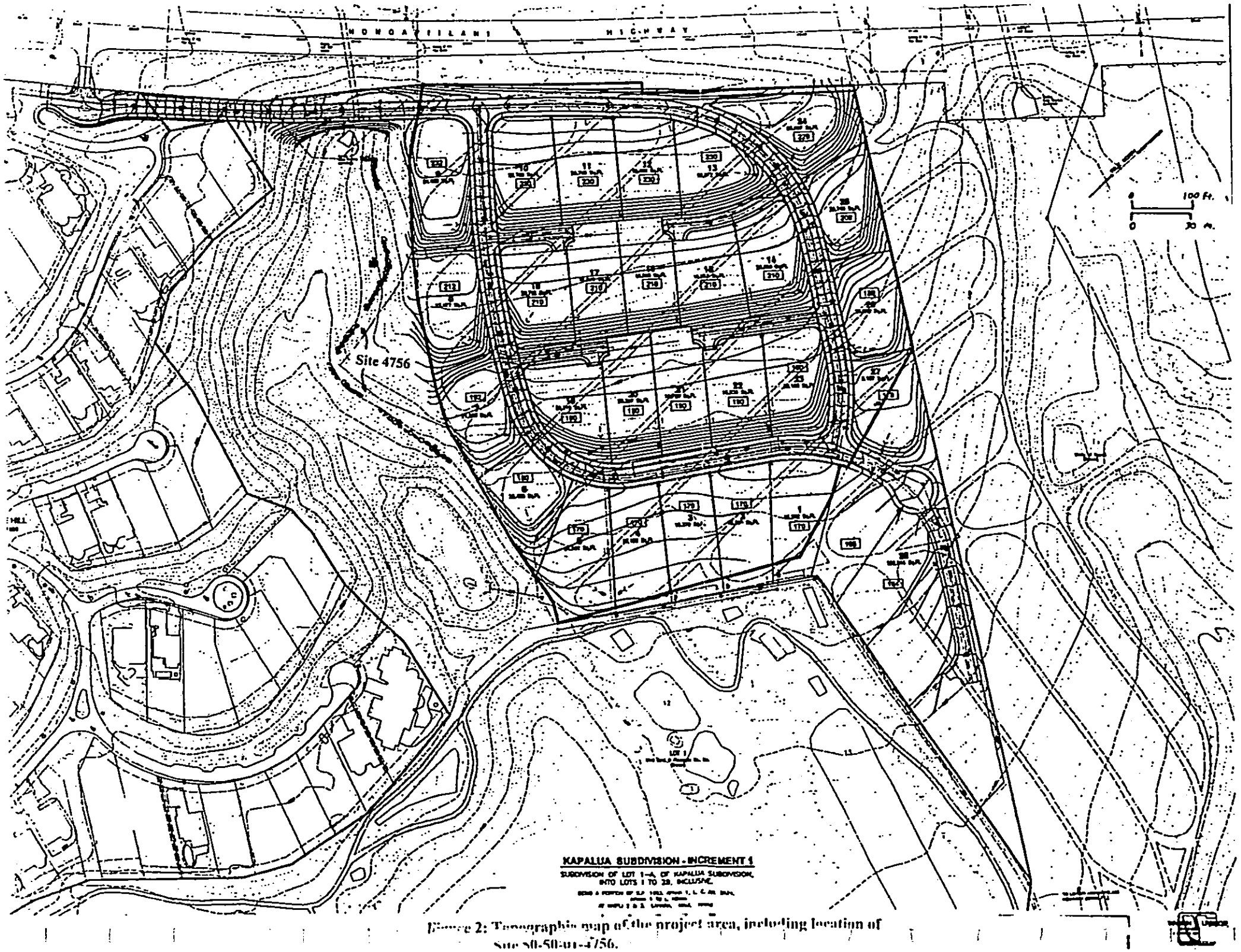


Figure 2: Topographic map of the project area, including location of Site 80-50-01-4756.

Appendix A-1

State Historic Preservation Division Letter Dated June 17, 1999

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

JUN 2 5 1999

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

DEPUTIES
JANET E. KAWELO

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

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

June 17, 1999

Mr. Berte Ratte
Department of Public Works
Land Use and Codes Administration
250 South High Street
Wailuku, Hawaii 96793

LOG NO: 23568
DOC NO: 9906BR04

Dear Mr. Ratte:

SUBJECT: **Historic Preservation Review of the "Kapalua Site 19" Subdivision, Kapalua, Maui**
Honkahua Ahupua'a, Lahaina District, Maui.
TMK 4-2-04: por. 24

This letter reviews a proposed subdivision at the "Kapalua Site 19" located in the Kapalua resort on the Island of Maui. Kapalua Land Company, Ltd., is proposing to develop a 31-lot residential subdivision on 18.9 acres of land in the resort. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division (SHPD) library; and a field inspection of the subject parcel on June 2, 1999 by Brian Ramos (SHPD Maui Island Archaeologist).

The general area seems likely to have once been the location of pre-contact dry land farms, perhaps with scattered houses. A pervious archaeological inventory survey was conducted by Xamanek researches, on a mauka portion of this parcel. The report identified 3 archaeological sites, all post contact in age. This portion of the subject parcel, however, has been subjected to considerable alteration due to modern agriculture and the project site is currently under pineapple cultivation, so it is unlikely that significant historic sites remain.

We therefore believe the proposed construction will have "no effect" on significant historic sites.

As a contingency, in the event that unrecorded historic remains (i.e. firepits, artifacts, or human skeletal remains) are inadvertently uncovered during any construction on the property, all work should cease in the vicinity and the contractor should immediately contact the State Historic Preservation Division.

If you have any questions please contact Brian Ramos, the Maui Island Archaeologist at 243-5169.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

BR:jen

c. Glenn Tadaki, 305 High Street, Suite 104, Wailuku, Hawaii 96793

Appendix B

Preliminary Engineering Report

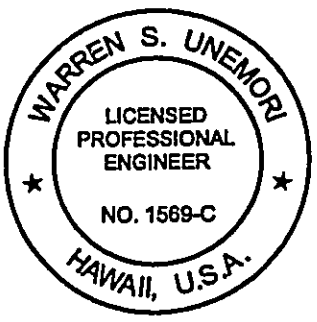
Preliminary Engineering Report for

Site 19 at Kapalua

Kapalua, Maui, Hawaii
TMK: (2) 4-2-04: portion of 24

Prepared for:

Kapalua Land Company, Ltd.
1000 Kapalua Drive
Kapalua, Maui, HI 96761



WARREN S. UNEMORI ENGINEERING, INC.
Civil and Structural Engineers - Land Surveyors
Wells Street Professional Center - Suite 403
2145 Wells Street
Wailuku, Maui, Hawaii 96793
May, 1999

TABLE OF CONTENTS

PRELIMINARY ENGINEERING REPORT
FOR
SITE 19 AT KAPALUA
TMK 4-2-04 PORTION OF 24

1.0 INTRODUCTION

This report provides a brief description of the project site and available infrastructure. It also evaluates adequacy of existing infrastructure and discusses infrastructural improvements that may be needed to support the project.

2.0 LOCATION AND TOPOGRAPHY OF PROJECT SITE

Site 19 is located at the most southerly tip of Project District 1 (PD-1) in Kapalua. It is bordered by the fairways 12 and 13 of the Bay Course to the northwest and Honoapiilani Highway on the southeasterly side. An unnamed gulch containing a sedimentation basin separates the site from Pineapple Hill. State land on the southwesterly side containing a pineapple field and a second gully serves as an open space between the project site and the residential homes in the Honokeana Subdivision.

The land slopes from an elevation of 240 feet northwest of Honoapiilani Highway to 135 feet at the makai end of the site resulting in a cross slope of 6 to 7 percent.

3.0 EXISTING INFRASTRUCTURE

3.1 Water

Kapalua Resort is served by a dual water system. Both systems are owned and operated by Kapalua Water Company.

The source of their potable water are two deep wells located between elevations 768 and 796 feet above Mean Sea Level (MSL), approximately 9,600 feet southeast of Site 19 project site.

Water is pumped from these deep wells into a 16,000 gallon glass-lined steel control tank at elevation 820 feet. It is then transmitted by gravity into a 1.0 million gallon (MG) reinforced concrete storage reservoir at elevation 428 feet through a 16-inch line. From this 1.0 MG storage reservoir, water is conveyed to Pineapple Hill by means of a 16-inch transmission line on Office Road and Kapalua Drive. Pineapple Hill is fed by a 12-inch line from the 16-inch transmission line on Kapalua Drive. The distribution system within Pineapple Hill is comprised of 8, 6 and 4-inch lines.

Non-potable irrigation water for Kapalua Resort is provided by Honokohau Ditch. Water from this ditch is piped across Honokohau Gulch to a 4.5 (MG) open reservoir at elevation 660 feet in Project District 2 (Kapalua-Mauka) by means of 16-inch transmission line. Water is delivered to Kapalua Resort below Honoapiilani Highway by a series of 16, 12 and 8-inch lines in Office Road, Village Road and Lower Honoapiilani Road.

3.2 Sewer System

The sewer system within Kapalua Resort is owned, operated and maintained by Kapalua Land Company. Wastewater from Kapalua Resort is collected and directed into the County's sewer pump station no. 6 located in TMK 4-2-04:25, south of Kapalua Bay. From this point a series of County pump stations, force mains and gravity collectors on Lower Honoapiilani Road transports the wastewater to the Lahaina

Wastewater Reclamation Facility located north of Kaanapali, mauka of the Honoapiilani Highway/Lower Honoapiilani Road intersection for processing and disposal.

3.3 Drainage

The project site is currently being used for pineapple cultivation. Runoff from the site sheet flows in a southeasterly to northwesterly direction onto fairways 12 and 13 of the Bay Course. It ultimately drains into a retention basin adjacent to fairway no. 16. Current peak runoff from the pineapple field in Site 19 for a 50-year, 1-hour storm is estimated to be 29 cubic feet per second (cfs).

3.4 Roadway

Honoapiilani Highway is the main traffic artery that links Kapalua to Lahaina and the rest of Maui. Honoapiilani Highway is a limited access highway. Present access to the project site for agricultural purposes is unimproved and is over the adjoining State land which is being leased from the State by Maui Land & Pineapple Company. This permitted access point on Honoapiilani Highway, located approximately 100 feet southwest of the southerly corner of the Site 19 project site, is primarily for the use of the adjoining State land only. Lower Honoapiilani Road is located approximately 2000 feet northwest of Site 19. The Kapalua Bay Course separates Site 19 from Lower Honoapiilani Road. Based on existing traffic volumes on Honoapiilani Highway through Kapalua and trip generation rates for residential subdivision projects the proposed 31 lot subdivision is not expected to adversely impact the existing traffic conditions in and around Kapalua.

3.5 Electrical, Telephone and CATV Systems

Existing distribution systems for electrical, telephone and cable television (CATV) adjacent to the project site are the overhead distribution system on Lower Honoapiilani Road and the underground distribution system at Pineapple Hill.

4.0 GRADING PLAN

The proposed subdivision will consist of 31 residential lots with lots ranging in size from approximately 19,000 to 25,000 square feet. The site will be graded into four tiers with a grade differential of approximately 20 feet between tiers to retain and enhance the view plane of the lots. Ample side yard building setbacks will also be prescribed to create view corridors between buildings.

All slopes will be landscaped for erosion control. Drainage stubouts with catch basins will be extended to the top of fill slopes in each lot to intercept lot runoff and curtail slope erosion.

5. PROPOSED INFRASTRUCTURAL IMPROVEMENTS

5.1 Water System

Potable water for the project will be extended from the south end of the distribution system in Pineapple Hill near its entrance from Honoapiilani Highway. The distribution system will be sized to meet the fire flow requirements of the project. To maintain adequate water pressure at Pineapple Hill, a new 12-inch potable line will be installed between Office Road and Pineapple Hill along Simpson Way as called for in the water master plan for Kapalua Resort. This new line will

provide a more direct route for water to Pineapple Hill from the 1.0 MG storage tank above Honoapiilani Highway and should help to maintain a more constant pressure in the system.

According to potable water consumption records for Kapalua Resort, the average daily water demand for single family residential lots is 450 gpd. Therefore the 31 lot single family project is expected to increase overall consumption by 13,950 gallons per day (gpd). The existing well source and storage system are adequate to satisfy this additional requirement.

A non-potable water system will also be installed for the project. In keeping with Kapalua's non-potable water master plan dated July 1997, a new irrigation line will be installed from the 16 inch line on Office Road and extended along the northwesterly side of Honoapiilani Highway within Site 18 of PD-1 and along the proposed access road for Site 19 to fairway no. 12 of Kapalua's Bay Course. The cost of this offsite line extension will be shared with Kapalua Golf since this line will be resolving their irrigation needs for the Bay Course. The non-potable irrigation water demand for Site 19 is expected to be around 20,000 gpd. The existing ditch source and storage reservoir can readily fulfill this additional demand.

5.2 Sewer System

The proposed 31 lot residential development is expected to generate 10,850 gpd of wastewater when fully developed.

Since the project site is not currently sewered, approximately 2000 feet of offsite sewer line will be installed along the west edge of

the Bay Course to connect the onsite sewer system to the County gravity system on Lower Honoapiilani Road.

According to the County's Wastewater Division the County's transmission and wastewater facility have ample excess capacity to handle the projected additional wastewater flow from the project. In addition KLC/MLP has pre-purchased capacity in the existing transmission and wastewater reclamation facility for this project.

5.3 Drainage System

Peak post-development runoff from the project site for a 50-year, 1-hour intensity storm is expected to total 61.3 cfs.

Post development runoff from the subdivision streets and lots will be collected by catch basins and conveyed to the existing detention basin located in the gulch between Pineapple Hill and the project site. As an erosion mitigation measure catch basins will be provided at each terraced lot to intercept runoff from the roof tops and yard and keep it from sheet flowing over the slopes of the embankment. Building guidelines will also require all downspouts to be connected to the onsite drainage stubout and catch basin provided. Runoff from lots along the golf course and lots on the westerly end of the project site will be allowed to sheet flow onto the golf course directly as it is doing currently. Approximately 46.6 cfs will be intercepted and directed into the existing detention basin located northeast of the project site. Our calculations indicate that the existing detention basin has adequate capacity to retain the additional runoff generated.

5.4 Roadway

The main entry to the project site from Honoapiilani Highway will be from the existing access-permitted point now being utilized by Pineapple Hill for their service entrance.

A new fully improved road will be constructed parallel to Honoapiilani Highway across the adjoining gulch to provide access to the project site. Road improvements will consist of a 24 feet wide paved road, curb and gutter on both sides, and a four feet wide sidewalk on one side. Catch basins and storm drain system will also be installed to convey runoff from the road into the adjoining gully. All interior subdivision streets and driveways will be constructed to County standards.

5.5 Electrical, Telephone, and CATV Systems

Electrical, telephone and CATV distribution systems for the project will be extended underground to each building site from Pineapple Hill or from Lower Honoapiilani Road. The distribution system will be installed along the interior roads and driveways. Localized non-glare street lights will be used wherever practical.

6.0 CONCLUSION

Based on the foregoing it is reasonable to conclude that any project related impact can and will be readily mitigated with the installation of appropriate improvements such as those being proposed.

Appendix C

Preliminary Drainage Report

Established 1969

PRELIMINARY DRAINAGE REPORT FOR

SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii
TMK: (2) 4-2-04: Portion of 24

Prepared For: Kapalua Land Company, Ltd
1000 Kapalua Drive
Kapalua, Maui, Hawaii 96761

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5485-C
HAWAII, U.S.A.

April, 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

N:\coreldata\eancdr\98074dr0.cdr

TABLE OF CONTENTS

EXHIBITS:

APPENDICES:

Preliminary Drainage Report
for
SITE 19 AT KAPALUA
Kapalua, Lahaina, Maui, Hawaii

I. INTRODUCTION:

The purpose of this report is to evaluate the existing site drainage conditions and to develop a preliminary grading and drainage plan for the proposed 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 an existing gully and retention basin to the northeast, pineapple fields to the southwest, Honoapiilani Highway to the southeast and Kapalua Bay Golf Course to the northwest. (See Exhibit 1). The project site encompasses an area of approximately 19 acres.

B. Project Description:

The proposed plan for Site 19 is to develop the project site into 31 single-family residential lots ranging from approximately 19,000 to 25,000 square feet. Site improvements will include, but not be limited to asphalt-paved roadways with concrete sidewalks, curb and gutters and landscaping. Underground utility improvements will consist of underground drainage, sewer, and water distribution systems along with electrical, telephone, and cable distribution systems.

III. EXISTING CONDITIONS:

A. Topography and Soil Conditions:

The project site is presently being used to cultivate pineapple. The existing ground slopes in a southeasterly to northwesterly direction from an elevation of (+) 240 ± feet M.S.L. to (+) 135 ± feet M.S.L. with an average slope of approximately 6.0 to 7.0%±.

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 Kahana Silty Clay (KbB, 2 to 7 percent slopes), Kahana Silty Clay (KbC, 7 to 15 percent slopes) and Rough Broken Land (rRR) (see Exhibit 2).

The Kahana Silty Clay, 2 to 7 percent slopes (KbB) is characterized as having slow runoff and the erosion hazard is slight. The Kahana Silty Clay, 7 to 15 percent slopes (KbC) is characterized as having slow to medium runoff, the erosion hazard is slight to moderate and permeability is moderately rapid. The natural vegetation on this type of soil include but is not limited to guava, klu, lantana, Natal redtop, koa haole and yellow foxtail.

Rough Broken and Stony Land (rRS) consists of very steep, stony gulches and is characterized as having rapid runoff and geologic erosion is rapid. The natural vegetation on this type of soil include but is not limited to lantana, klu, feather fingergrass, bermudagrass, and ilima.

B. Drainage:

According to our calculations, approximately 28.9 cfs of onsite surface runoff is generated by the project site during a 50-year recurrence interval 1-hour duration storm. (See Appendix A).

The existing onsite surface runoff generally sheet flows through the project site in a southeasterly to northwesterly direction and into the adjoining properties.

Presently, approximately 9.6 cfs of onsite surface runoff sheet flows off the project site into pineapple fields located to the southwest of the project site.

Our calculations indicate that approximately 18.8 cfs of onsite surface runoff presently sheet flows off the project site onto the fairways 12 and 13 of the Bay Course. The surface runoff ultimately drains into a retention basin adjacent to fairway no. 16 of the Bay Course.

The remaining 1.4 cfs of onsite surface runoff sheet flows of the project site into an unnamed gully, which ends up in a detention basin located west of Pineapple Hill Subdivision and northeast of the project site. The existing detention basin has a 84 inch C.M.P. outlet structure, which outlets into a second retention basin within the Bay Course located approximately, 1,000 feet upstream of Lower Honoapiilani Road.

C. Flood and Tsunami Zone:

According to Panel Numbers 150003 0138 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).

IV. DRAINAGE PLAN:

A. General:

Based on our calculations, the post development onsite surface runoff volume generated from the Site 19 project is expected to be approximately 61.3 cfs. Accordingly, there will be a net increase due to the proposed development of approximately 31.5 cfs (see Appendix A).

The design criteria that will be utilized for the design of the drainage system for the proposed development will include minimal alterations to the natural drainage pattern of both the offsite and onsite surface runoff volumes.

The majority of the onsite surface runoff generated by the proposed development will be intercepted by numerous new curb-inlet type catch basins which will be installed within the proposed subdivision roadways. The onsite surface runoff volume intercepted by the new curb-inlet type catch basins will be conveyed by means of a new underground drainage system located within the subdivision roadways and designated easements to a drainage outlet located within the existing drainage detention basin. Based on our calculations, the existing drainage detention basin has adequate capacity to accommodate all of the intercepted surface runoff generated by the project site.

According to our calculations, after development of the project site approximately 7.4 cfs of onsite surface runoff will continue to sheet flow as it is presently doing into the pineapple fields southwest of the project site. There will be a net decrease of approximately 2.2 cfs of onsite surface runoff sheet flowing into the pineapple fields due to the proposed development.

Our calculations indicate that after development, approximately 7.3 cfs of onsite surface runoff will be allowed to sheet flow onto the fairways 12 and 13 of the Bay Course. This will be a decrease of approximately 11.5 cfs of onsite surface runoff that will be sheet flowing onto the golf course after development.

B. Hydrology Calculations:

The hydrologic calculations are based on the "Storm Drainage Standards", and the "Rainfall Frequency Atlas of the Hawaiian Islands", Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau.

Rational Formula Used: $Q = CIA$

Where Q = rate of flow (cfs)
A = area (acres)
I = rainfall intensity for a duration equal to the time of concentration (in./hr.)
C = runoff coefficient

The hydrologic calculations for drainage areas greater than 100 acres are based on procedures developed by the U.S. Department of Agriculture, Soil Conservation Service (SCS). This procedure is described in detail in the SCS National Engineering Handbook, Section 4, Hydrology (NEH-4). Hydrologic calculations were computed by utilizing the "SCS Computer Program for Project Formulation, Hydrology (TR-20)", which is based on the procedures outlined in NEH-4. See Appendix A for Hydrologic Calculations.

C. Conclusion:

Based on our calculations, there will be a net increase of approximately 31.5 cfs in total onsite surface runoff volume due to the proposed development of the Site 19 at Kapalua (See Appendix A).

However, the majority of the onsite surface runoff volume generated by the proposed development will be intercepted by new curb-inlet type catch basins which will be installed as part of the subdivision improvements. A new underground drainage system will convey the intercepted surface runoff volume into a drainage outlet located within the existing detention basin which has adequate capacity to accommodate the surface runoff generated by the subject project.

Based on our calculations, the remaining onsite surface runoff volumes presently discharging into the adjoining downstream properties will be reduced as a result of the subject development.

Since the majority of the onsite surface runoff volume generated by the proposed development will be conveyed to an adequate existing drainage detention basin and the remaining onsite surface runoff volumes discharging into the adjoining downstream properties will be reduced as a result of the proposed development, it is our professional opinion that the proposed subdivision development of Site 19 will not adversely affect the adjoining properties.

Report By: Eric Nakagawa
Eric A. Nakagawa

Reviewed by: Reed M. Ariyoshi
Reed M. Ariyoshi, P.E.

x:\wp51data\eanwp\98\98074000.rpt (wpwin61)

V. REFERENCES

1. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* August 1972. United States Department of Agriculture, Soil Conservation Service.

2. *Flood Insurance Rate Map, Maui County, Hawaii.* Community-Panel Number 150003 0138B. Revised June 1, 1981. Federal Emergency Management Agency, Federal Insurance Administration.

3. *Drainage Master Plan for the County of Maui, State of Hawaii.* October 1971. R.M. Towill Corporation.

4. *Rainfall Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43.* 1962. U.S. Department of Commerce, Weather Bureau.

5. *Rules for the Design of Storm Drainage Facilities in the County of Maui., Title MC-15, Chapter 4.* 1995. Department of Public Works and Waste Management, County of Maui.

EXHIBITS

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

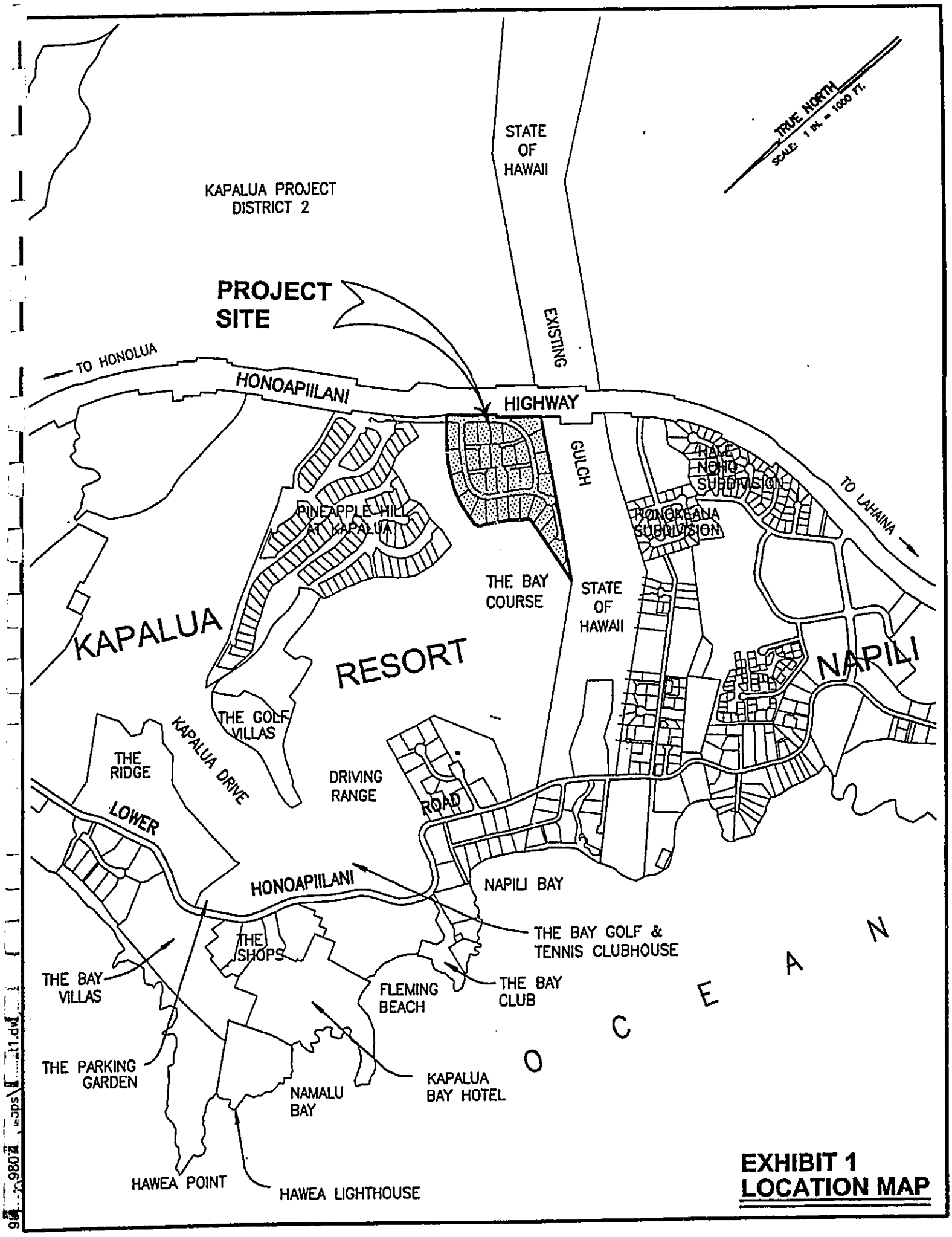


EXHIBIT 1
LOCATION MAP

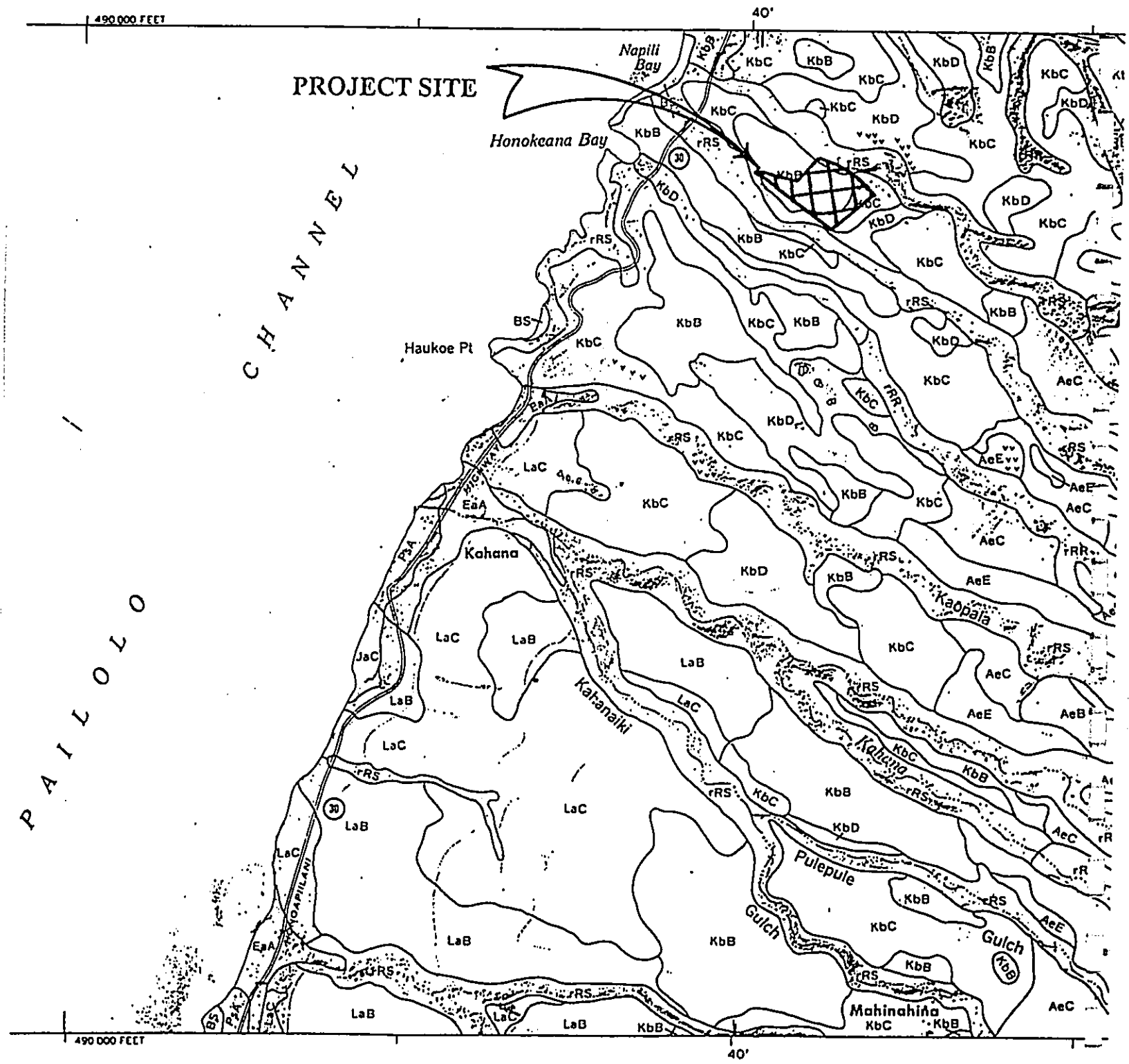


EXHIBIT 2
SOIL SURVEY MAI

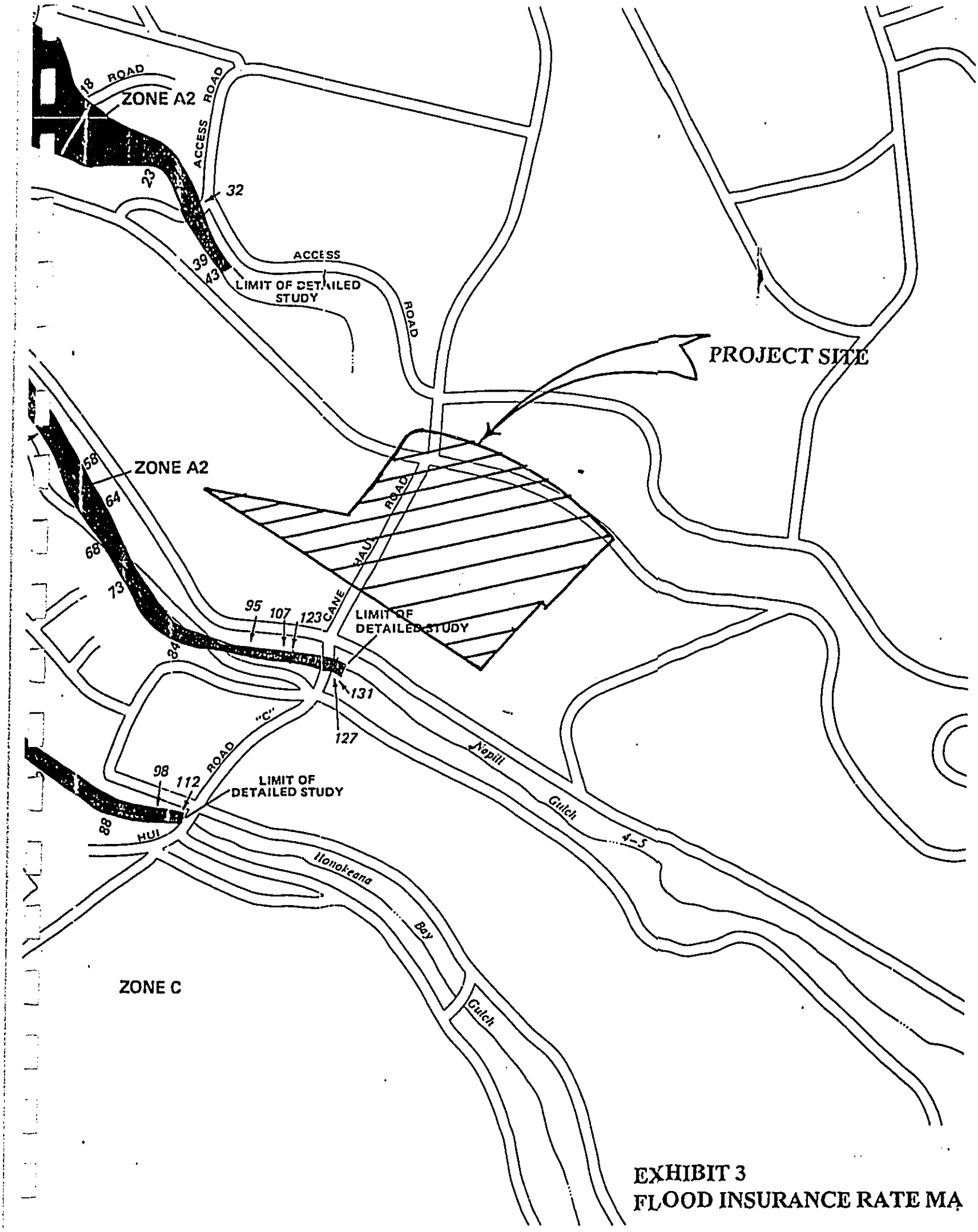


EXHIBIT 3
FLOOD INSURANCE RATE MA

APPENDIX A

HYDROLOGIC CALCULATIONS

APPENDIX A-1

Pre-Development Surface Runoff (50 Year-1 Hour)

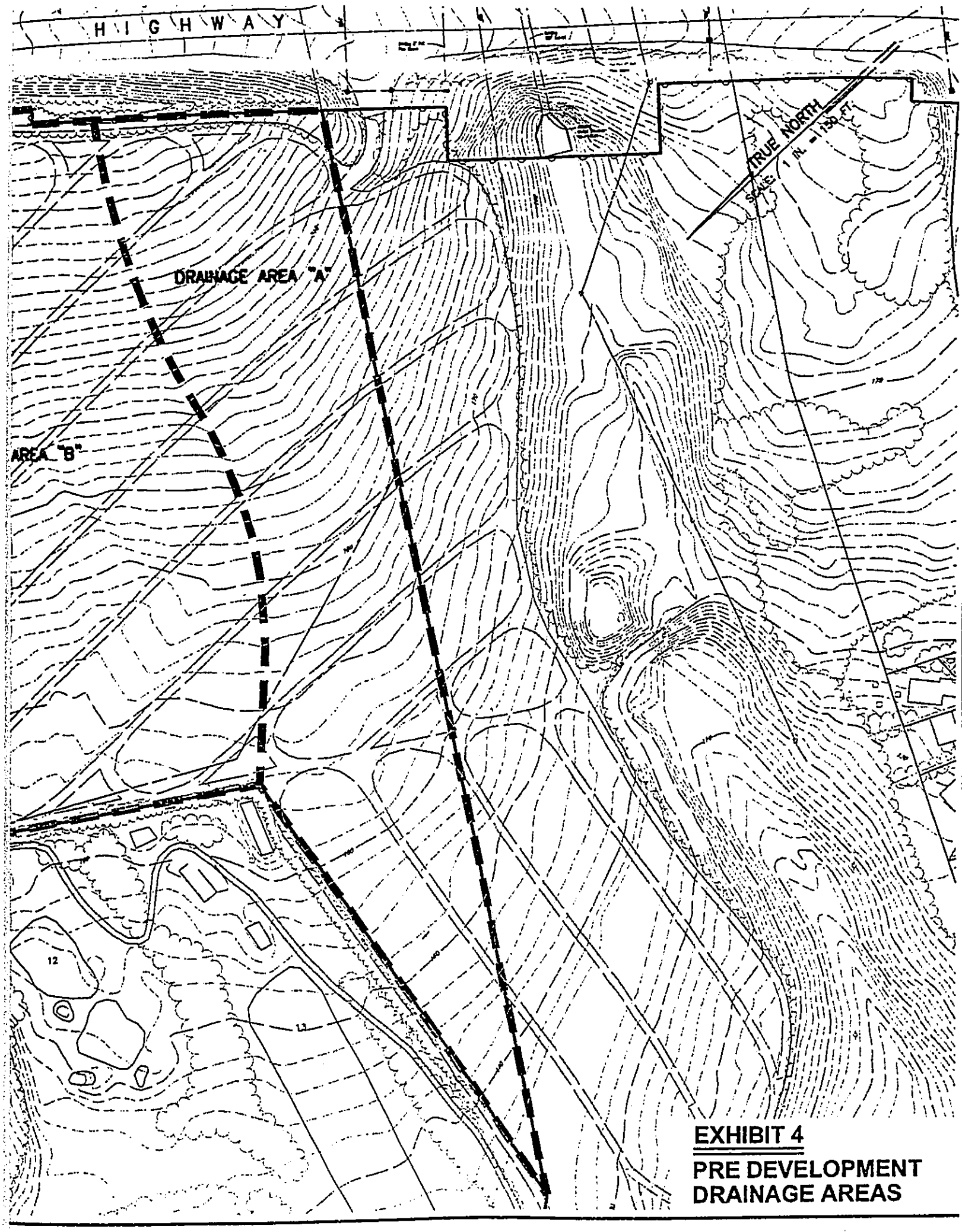
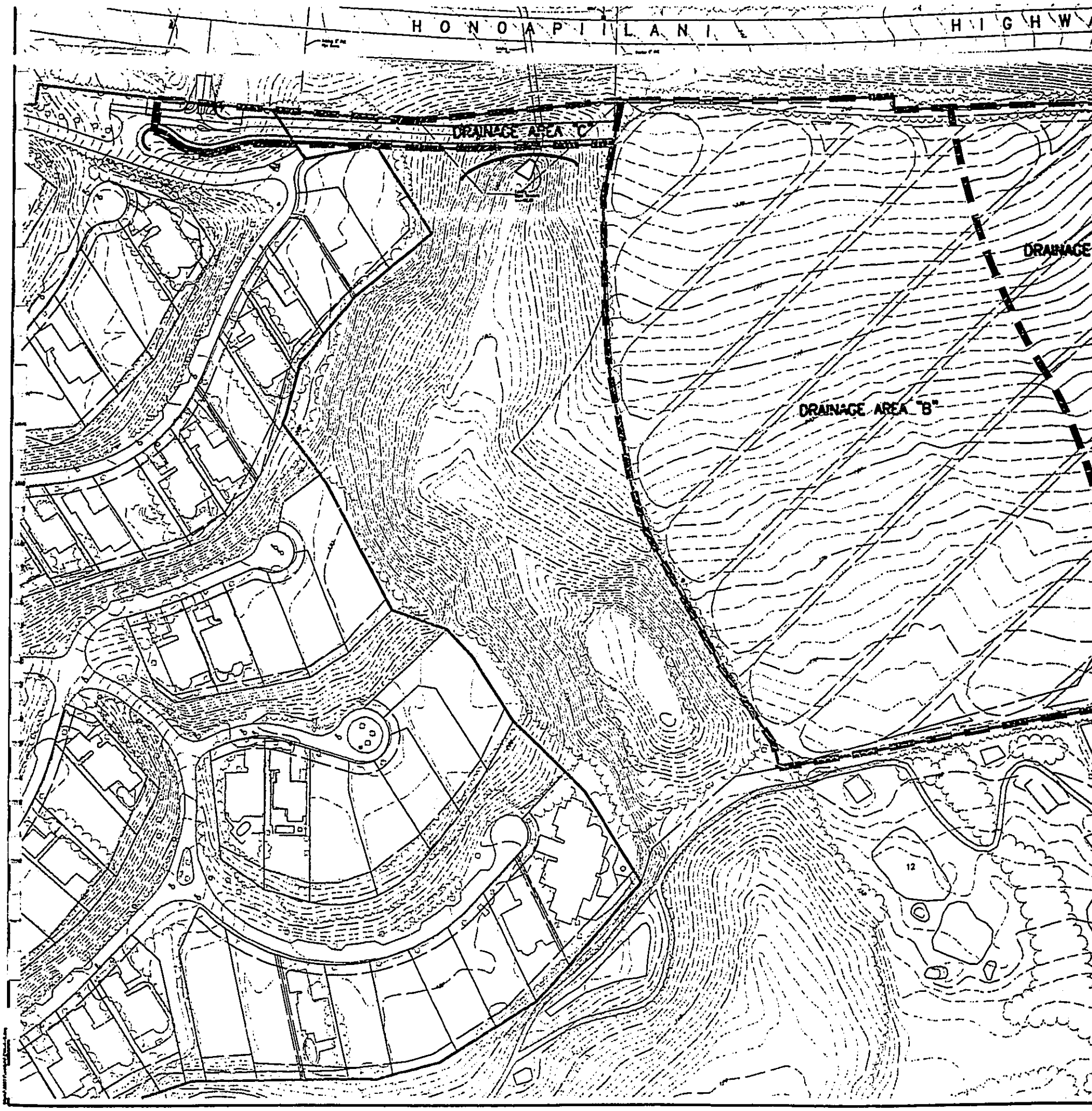


EXHIBIT 4

PRE DEVELOPMENT DRAINAGE AREAS


H O N O A P I I L A N I
H I G H W
DRAINAGE AREA "C"
DRAINAGE
DRAINAGE AREA "B"
12

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Pre-Development Surface Runoff Volume

Drainage Area "A"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	1470.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	105.00 ft.
		HYDRAULIC SLOPE:	0.071 ft./ft.
WEIGHTED RUNOFF			
COEFFICIENT, C:	0.30	TIME OF CONCENTRATION:	22.0 min.
INTENSITY, I:	4.80 inches		
AREA, A:	6.70 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 9.65 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street · Suite 403
Wailuku, Maui, Hawaii 96793

BY: · ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.300
VEGETAL COVER:	Poor (<10%)	0.05	>>> AREA = 6.700 acres
DEVELOPMENT:	Agricultural	0.15	

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Pre-Development Surface Runoff Volume

Drainage Area "B"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	1050.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	90.00 ft.
		HYDRAULIC SLOPE:	0.086 ft./ft.
WEIGHTED RUNOFF COEFFICIENT, C:	0.30	TIME OF CONCENTRATION:	18.5 min.
INTENSITY, I:	5.10 inches		
AREA, A:	12.30 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 18.82 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ' ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.300
VEGETAL COVER:	Poor (<10%)	0.05	>>> AREA = 12.300 acres
DEVELOPMENT:	Agricultural	0.15	

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Pre-Development Surface Runoff Volume

Drainage Area "C"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	470.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	72.00 ft.
		HYDRAULIC SLOPE:	0.153 ft./ft.
WEIGHTED RUNOFF			
COEFFICIENT, C:	0.30	TIME OF CONCENTRATION:	12.0 min.
INTENSITY, I:	5.90 inches		
AREA, A:	0.80 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 1.42 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ' ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.300
VEGETAL COVER:	Poor (<10%)	0.05	>>> AREA = 0.800 acres
DEVELOPMENT:	Agricultural	0.15	

APPENDIX A-2

Post-Development Surface Runoff (50 Year-1 Hour)

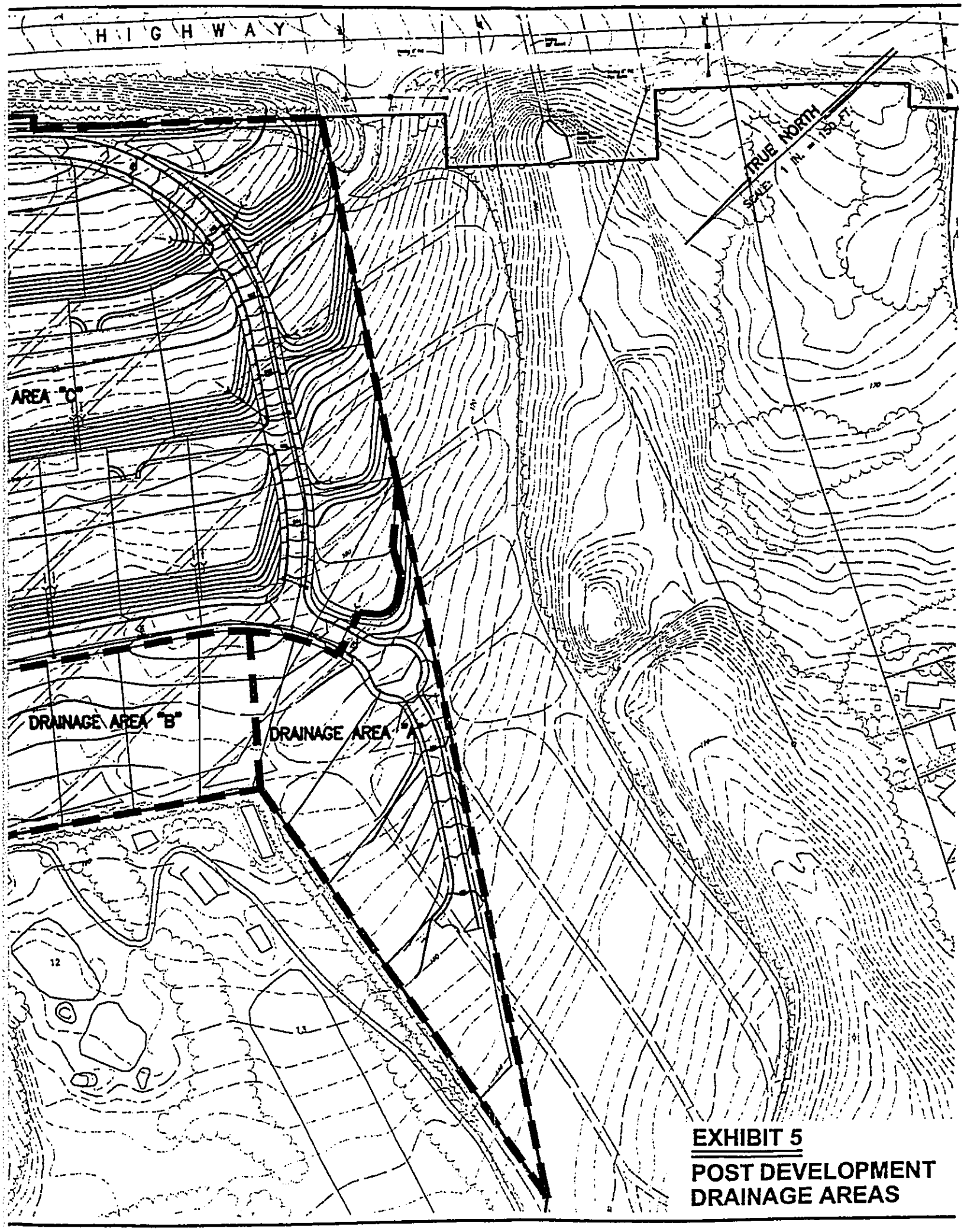


EXHIBIT 5

POST DEVELOPMENT DRAINAGE AREAS


HONOAPIILANI
HIGH
DRAINAGE AREA "C"
DRAINAGE AREA "B"
12

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Post-Development Surface Runoff Volume

Drainage Area "A"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	825.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	39.00 ft.
		HYDRAULIC SLOPE:	0.047 ft./ft.
WEIGHTED RUNOFF COEFFICIENT, C:	0.53	TIME OF CONCENTRATION:	22.0 min.
INTENSITY, I:	4.80 inches		
AREA, A:	2.90 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 7.38 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.530
VEGETAL COVER:	Good (10-50%)	0.03	>>> AREA = 2.900 acres
DEVELOPMENT:	Residential	0.40	

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Post-Development Surface Runoff Volume

Drainage Area "B"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	250.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	15.00 ft.
		HYDRAULIC SLOPE:	0.060 ft./ft.
WEIGHTED RUNOFF COEFFICIENT, C:	0.53	TIME OF CONCENTRATION:	15.0 min.
INTENSITY, I:	5.50 inches		
AREA, A:	2.50 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 7.29 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.530
VEGETAL COVER:	Good (10-50%)	0.03	>>> AREA = 2.500 acres
DEVELOPMENT:	Residential	0.40	

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ean
DATE: April 28, 1999

HYDROLOGIC STUDY
FOR
SITE 19 AT KAPALUA

Kapalua, Lahaina, Maui, Hawaii

Post-Development Surface Runoff Volume

Drainage Area "C"

RECURRENCE INTERVAL:	50 years	HYDRAULIC LENGTH:	1620.0 ft.
ONE-HOUR RAINFALL:	3.00 inches	ELEV'N. DIFFERENTIAL:	72.00 ft.
		HYDRAULIC SLOPE:	0.044 ft./ft.
WEIGHTED RUNOFF COEFFICIENT, C:	0.53	TIME OF CONCENTRATION:	10.5 min.
INTENSITY, I:	6.10 inches		
AREA, A:	14.40 acres	SUB BASINS CONSIDERED:	1

Q = C*I*A = 46.56 cfs

COMMENTS:

W.S. UNEMORI ENGINEERING, INC.
2145 Wells Street Suite 403
Wailuku, Maui, Hawaii 96793

BY: ' ean
DATE: April 28, 1999

SITE 19 AT KAPALUA
[continued]

TABULATION OF RUNOFF COEFFICIENTS & AREAS:

SUB-BASIN 1 OF 1 :

INFILTRATION:	Medium	0.07	
RELIEF:	Rolling (5-15%)	0.03	>>> COMPOSITE C = 0.530
VEGETAL COVER:	Good (10-50%)	0.03	>>> AREA = 14.400 acres
DEVELOPMENT:	Residential	0.40	

APPENDIX B

ANALYSIS OF EXISTING DETENTION BASIN

POND-2 Version: 5.21 S/N:
EXECUTED: 04-28-1999 15:42:29

Inflow Hydrograph: 98074000.HYD
Rating Table file: 98074000.PND

----INITIAL CONDITIONS----
Elevation = 130.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
130.00	0.0	0.000
132.00	85.1	0.110
134.00	120.4	0.440
136.00	147.4	0.927
138.00	170.2	1.602
140.00	203.5	2.460
142.00	277.1	3.467
144.00	372.7	4.632
146.00	485.1	5.962
148.00	611.6	7.466
150.00	750.5	9.155
152.00	900.8	11.041
154.00	1061.4	13.141

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
26.7	111.8
106.5	226.9
224.3	371.7
387.7	557.9
595.3	798.8
839.1	1116.2
1121.0	1493.7
1442.8	1927.9
1806.8	2418.4
2215.5	2966.0
2672.0	3572.8
3180.1	4241.5

Time increment (t) = 0.100 hrs.

POND-2 Version: 5.21 S/N:
EXECUTED: 04-28-1999 15:42:29

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
3.000	0.00	-----	0.0	0.0	0.00	130.00
3.100	0.00	0.0	0.0	0.0	0.00	130.00
3.200	0.00	0.0	0.0	0.0	0.00	130.00
3.300	0.00	0.0	0.0	0.0	0.00	130.00
3.400	0.01	0.0	-0.0	0.0	0.01	130.00
3.500	0.02	0.0	-0.0	0.0	0.02	130.00
3.600	0.06	0.1	-0.0	0.1	0.05	130.00
3.700	0.13	0.2	-0.1	0.2	0.12	130.00
3.800	0.26	0.4	-0.2	0.3	0.24	130.01
3.900	0.47	0.7	-0.3	0.6	0.43	130.01
4.000	0.76	1.2	-0.5	0.9	0.71	130.02
4.100	1.16	1.9	-0.7	1.4	1.09	130.03
4.200	1.67	2.8	-1.1	2.1	1.58	130.04
4.300	2.29	4.0	-1.5	2.9	2.19	130.05
4.400	3.01	5.3	-2.0	3.8	2.89	130.07
4.500	3.83	6.8	-2.5	4.9	3.70	130.09
4.600	4.74	8.6	-3.2	6.0	4.59	130.11
4.700	5.72	10.5	-3.8	7.3	5.56	130.13
4.800	6.78	12.5	-4.5	8.7	6.61	130.16
4.900	7.90	14.7	-5.3	10.1	7.72	130.18
5.000	9.08	17.0	-6.1	11.7	8.89	130.21
5.100	10.31	19.4	-6.9	13.3	10.12	130.24
5.200	11.61	21.9	-7.8	15.0	11.40	130.27
5.300	12.96	24.6	-8.8	16.7	12.75	130.30
5.400	14.35	27.3	-9.7	18.6	14.13	130.33
5.500	15.80	30.2	-10.7	20.4	15.57	130.37
5.600	17.31	33.1	-11.7	22.4	17.07	130.40
5.700	18.86	36.2	-12.8	24.4	18.62	130.44
5.800	20.46	39.3	-13.9	26.5	20.21	130.47
5.900	22.11	42.6	-15.0	28.7	21.85	130.51
6.000	23.79	45.9	-16.2	30.9	23.53	130.55
6.100	25.51	49.3	-17.3	33.1	25.24	130.59
6.200	27.25	52.8	-18.5	35.4	26.98	130.63
6.300	29.01	56.3	-19.7	37.7	28.73	130.68
6.400	30.76	59.8	-20.9	40.0	30.49	130.72
6.500	32.50	63.3	-22.1	42.3	32.23	130.76
6.600	34.24	66.7	-23.3	44.6	33.97	130.80
6.700	35.98	70.2	-24.5	46.9	35.71	130.84
6.800	37.75	73.7	-25.7	49.2	37.47	130.88
6.900	39.56	77.3	-27.0	51.6	39.27	130.92
7.000	41.43	81.0	-28.3	54.0	41.13	130.97
7.100	43.39	84.8	-29.6	56.6	43.08	131.01
7.200	45.47	88.9	-31.0	59.3	45.14	131.06
7.300	47.66	93.1	-32.5	62.1	47.31	131.11
7.400	49.96	97.6	-34.1	65.1	49.59	131.17

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
7.500	52.37	102.3	-35.7	68.3	51.99	131.22
7.600	54.92	107.3	-37.4	71.6	54.51	131.28
7.700	57.59	112.5	-39.3	75.1	57.17	131.34
7.800	60.37	118.0	-41.2	78.7	59.93	131.41
7.900	63.24	123.6	-43.1	82.4	62.79	131.48
8.000	66.20	129.4	-45.1	86.3	65.73	131.54
8.100	69.30	135.5	-47.3	90.4	68.81	131.62
8.200	72.58	141.9	-49.5	94.6	72.06	131.69
8.300	76.07	148.7	-51.9	99.2	75.51	131.77
8.400	79.78	155.9	-54.4	104.0	79.19	131.86
8.500	83.80	163.6	-57.1	109.2	83.15	131.95
8.600	88.25	172.1	-57.2	114.9	86.08	132.06
8.700	93.24	181.5	-53.6	124.3	88.94	132.22
8.800	98.81	192.1	-48.1	138.4	93.28	132.46
8.900	105.00	203.8	-41.4	155.7	98.57	132.76
9.000	111.96	217.0	-33.8	175.5	104.65	133.11
9.100	119.88	231.8	-25.1	198.1	111.56	133.50
9.200	128.84	248.7	-15.1	223.7	119.41	133.94
9.300	138.84	267.7	2.2	252.5	125.18	134.35
9.400	149.87	288.7	26.2	290.9	132.33	134.88
9.500	162.59	312.5	56.2	338.7	141.24	135.54
9.600	179.29	341.9	96.8	398.1	150.63	136.28
9.700	202.94	382.2	158.0	479.0	160.54	137.15
9.800	236.04	439.0	245.7	596.9	175.60	138.32
9.900	281.45	517.5	366.1	763.2	198.58	139.70
10.000	342.12	623.6	494.1	989.6	247.75	141.20
10.100	417.38	759.5	629.8	1253.6	311.90	142.73
10.200	501.90	919.3	775.0	1549.1	387.04	144.26
10.300	589.00	1090.9	927.8	1865.9	469.06	145.71
10.400	670.86	1259.9	1083.5	2187.7	552.09	147.06
10.500	739.52	1410.4	1232.4	2493.9	630.74	148.28
10.600	788.93	1528.5	1363.9	2760.9	698.46	149.25
10.700	817.33	1606.3	1467.1	2970.2	751.54	150.01
10.800	827.09	1644.4	1538.4	3111.5	786.55	150.48
10.900	820.72	1647.8	1576.1	3186.2	805.06	150.73
11.000	799.17	1619.9	1581.1	3196.0	807.48	150.76
11.100	764.04	1563.2	1555.0	3144.3	794.66	150.59
11.200	721.40	1485.4	1502.5	3040.4	768.93	150.25
11.300	675.01	1396.4	1432.0	2898.9	733.49	149.76
11.400	627.96	1303.0	1351.2	2734.9	691.89	149.16
11.500	583.74	1211.7	1266.4	2562.9	648.24	148.53
11.600	544.07	1127.8	1183.5	2394.2	605.35	147.90
11.700	508.17	1052.2	1106.8	2235.7	564.49	147.26
11.800	474.97	983.1	1036.1	2089.9	526.88	146.66
11.900	444.67	919.6	971.2	1955.8	492.29	146.11
12.000	417.33	862.0	912.0	1833.2	460.59	145.56

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
12.100	392.75	810.1	858.5	1722.1	431.83	145.05
12.200	370.77	763.5	810.2	1622.0	405.90	144.59
12.300	351.10	721.9	766.8	1532.0	382.62	144.18
12.400	333.40	684.5	727.4	1451.3	361.96	143.78
12.500	317.50	650.9	691.4	1378.3	343.47	143.39
12.600	303.27	620.8	658.7	1312.1	326.71	143.04
12.700	290.50	593.8	629.3	1252.5	311.61	142.72
12.800	278.99	569.5	602.7	1198.7	298.00	142.44
12.900	268.62	547.6	578.9	1150.3	285.75	142.18
13.000	259.26	527.9	556.9	1106.7	274.90	141.94
13.100	250.75	510.0	535.6	1066.9	265.68	141.69
13.200	242.97	493.7	515.4	1029.3	256.95	141.45
13.300	235.83	478.8	496.6	994.2	248.81	141.23
13.400	229.25	465.1	479.1	961.7	241.27	141.03
13.500	223.17	452.4	463.0	931.6	234.28	140.84
13.600	217.52	440.7	448.0	903.7	227.82	140.66
13.700	212.25	429.8	434.2	877.8	221.82	140.50
13.800	207.25	419.5	421.2	853.7	216.22	140.35
13.900	202.51	409.8	409.1	831.0	210.96	140.20
14.000	197.99	400.5	397.6	809.6	205.99	140.07
14.100	193.59	391.6	384.8	789.1	202.17	139.92
14.200	189.30	382.9	369.3	767.7	199.20	139.74
14.300	185.14	374.4	352.0	743.7	195.89	139.54
14.400	181.17	366.3	333.5	718.3	192.37	139.33
14.500	177.47	358.6	314.7	692.2	188.76	139.11
14.600	174.02	351.5	295.8	666.1	185.16	138.90
14.700	170.85	344.9	277.4	640.7	181.64	138.69
14.800	167.92	338.8	259.7	616.2	178.25	138.48
14.900	165.22	333.1	242.8	592.8	175.02	138.29
15.000	162.69	327.9	226.7	570.7	171.96	138.11
15.100	160.32	323.0	211.3	549.7	169.20	137.91
15.200	158.11	318.4	196.3	529.8	166.76	137.70
15.300	156.07	314.2	181.7	510.4	164.39	137.49
15.400	154.22	310.3	167.7	492.0	162.12	137.29
15.500	152.54	306.8	154.5	474.5	159.98	137.10
15.600	151.03	303.6	142.1	458.1	157.98	136.93
15.700	149.67	300.7	130.6	442.8	156.11	136.76
15.800	148.42	298.1	119.9	428.7	154.38	136.61
15.900	147.24	295.7	110.0	415.6	152.77	136.47
16.000	146.09	293.3	100.8	403.4	151.28	136.34
16.100	144.94	291.0	92.1	391.8	149.87	136.22
16.200	143.76	288.7	83.8	380.8	148.52	136.10
16.300	142.54	286.3	75.9	370.1	147.10	135.98
16.400	141.28	283.8	69.4	359.7	145.16	135.83
16.500	139.95	281.2	63.7	350.6	143.47	135.71
16.600	138.55	278.5	58.4	342.2	141.89	135.59

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
16.700	137.09	275.6	53.3	334.0	140.37	135.48
16.800	135.58	272.7	48.2	325.9	138.87	135.37
16.900	134.04	269.6	43.1	317.8	137.35	135.26
17.000	132.49	266.5	38.0	309.6	135.83	135.14
17.100	130.93	263.4	32.8	301.4	134.29	135.03
17.200	129.38	260.3	27.6	293.1	132.75	134.91
17.300	127.88	257.3	22.5	284.9	131.21	134.80
17.400	126.46	254.3	17.4	276.8	129.71	134.69
17.500	125.14	251.6	12.5	269.0	128.25	134.58
17.600	123.94	249.1	7.8	261.6	126.87	134.48
17.700	122.82	246.8	3.5	254.6	125.57	134.38
17.800	121.76	244.6	-0.6	248.1	124.34	134.29
17.900	120.74	242.5	-4.5	241.9	123.19	134.21
18.000	119.72	240.5	-8.2	235.9	122.09	134.12
18.100	118.68	238.4	-11.8	230.2	121.01	134.05
18.200	117.57	236.3	-14.9	224.4	119.63	133.96
18.300	116.41	234.0	-16.9	219.1	118.01	133.86
18.400	115.18	231.6	-18.6	214.7	116.65	133.79
18.500	113.89	229.1	-20.3	210.4	115.35	133.71
18.600	112.55	226.4	-21.9	206.2	114.05	133.64
18.700	111.24	223.8	-23.6	201.9	112.73	133.57
18.800	110.01	221.3	-25.2	197.7	111.44	133.49
18.900	108.92	218.9	-26.7	193.7	110.23	133.42
19.000	108.04	217.0	-28.1	190.2	109.16	133.36
19.100	107.38	215.4	-29.2	187.3	108.27	133.31
19.200	106.90	214.3	-30.1	185.1	107.58	133.27
19.300	106.55	213.5	-30.7	183.4	107.05	133.24
19.400	106.25	212.8	-31.2	182.1	106.65	133.22
19.500	105.95	212.2	-31.7	181.0	106.31	133.20
19.600	105.59	211.5	-32.1	179.9	105.98	133.18
19.700	105.13	210.7	-32.6	178.6	105.60	133.16
19.800	104.56	209.7	-33.2	177.1	105.14	133.14
19.900	103.85	208.4	-33.9	175.3	104.57	133.10
20.000	103.00	206.9	-34.8	173.0	103.87	133.06
20.100	102.00	205.0	-35.8	170.2	103.03	133.02
20.200	100.91	202.9	-37.0	167.1	102.06	132.96
20.300	99.79	200.7	-38.4	163.7	101.01	132.90
20.400	98.69	198.5	-39.7	160.1	99.93	132.84
20.500	97.64	196.3	-41.1	156.6	98.85	132.78
20.600	96.68	194.3	-42.4	153.2	97.81	132.72
20.700	95.82	192.5	-43.6	150.1	96.85	132.67
20.800	95.05	190.9	-44.7	147.3	95.98	132.62
20.900	94.37	189.4	-45.7	144.7	95.20	132.57
21.000	93.81	188.2	-46.6	142.5	94.52	132.53
21.100	93.34	187.2	-47.3	140.6	93.94	132.50
21.200	92.95	186.3	-47.9	139.0	93.45	132.47

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
21.300	92.63	185.6	-48.4	137.7	93.05	132.45
21.400	92.36	185.0	-48.8	136.6	92.71	132.43
21.500	92.13	184.5	-49.2	135.6	92.42	132.41
21.600	91.92	184.1	-49.5	134.8	92.18	132.40
21.700	91.69	183.6	-49.8	134.1	91.95	132.39
21.800	91.42	183.1	-50.1	133.3	91.71	132.37
21.900	91.09	182.5	-50.5	132.4	91.43	132.36
22.000	90.65	181.7	-50.9	131.3	91.09	132.34
22.100	90.10	180.8	-51.4	129.9	90.65	132.31
22.200	89.46	179.6	-52.1	128.1	90.12	132.28
22.300	88.76	178.2	-52.9	126.1	89.50	132.25
22.400	88.03	176.8	-53.8	123.9	88.82	132.21
22.500	87.30	175.3	-54.6	121.6	88.11	132.17
22.600	86.60	173.9	-55.5	119.3	87.40	132.13
22.700	85.95	172.6	-56.4	117.0	86.71	132.09
22.800	85.36	171.3	-57.2	114.9	86.06	132.05
22.900	84.84	170.2	-58.0	113.0	85.47	132.02
23.000	84.39	169.2	-58.2	111.3	84.72	131.99
23.100	84.03	168.4	-57.7	110.2	83.94	131.97
23.200	83.73	167.8	-57.6	110.1	83.85	131.97
23.300	83.49	167.2	-57.3	109.6	83.49	131.96
23.400	83.28	166.8	-57.2	109.4	83.33	131.96
23.500	83.10	166.4	-57.1	109.1	83.12	131.95
23.600	82.92	166.0	-57.0	108.9	82.95	131.95
23.700	82.73	165.7	-56.8	108.7	82.76	131.94
23.800	82.48	165.2	-56.7	108.4	82.53	131.94
23.900	82.17	164.7	-56.5	108.0	82.22	131.93
24.000	81.71	163.9	-56.2	107.4	81.79	131.92
24.100	80.95	162.7	-55.7	106.5	81.09	131.91
24.200	79.72	160.7	-54.9	105.0	79.94	131.88
24.300	77.88	157.6	-53.7	102.7	78.20	131.84
24.400	75.28	153.2	-52.0	99.4	75.73	131.78
24.500	71.76	147.0	-49.7	95.0	72.36	131.70
24.600	67.24	139.0	-46.7	89.3	68.00	131.60
24.700	61.90	129.1	-43.1	82.4	62.77	131.48
24.800	56.04	117.9	-39.1	74.8	56.98	131.34
24.900	49.95	106.0	-35.0	66.9	50.91	131.20
25.000	43.89	93.8	-30.8	58.9	44.83	131.05
25.100	38.06	82.0	-26.8	51.2	38.96	130.92
25.200	32.64	70.7	-23.0	43.9	33.46	130.79
25.300	27.69	60.3	-19.5	37.3	28.44	130.67
25.400	23.28	51.0	-16.4	31.4	23.94	130.56
25.500	19.53	42.8	-13.8	26.4	20.08	130.47
25.600	16.46	36.0	-11.6	22.2	16.90	130.40
25.700	13.91	30.4	-9.8	18.8	14.29	130.34
25.800	11.77	25.7	-8.3	15.9	12.08	130.28

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
25.900	9.96	21.7	-7.0	13.4	10.23	130.24
26.000	8.42	18.4	-5.9	11.4	8.65	130.20
26.100	7.10	15.5	-5.0	9.6	7.30	130.17
26.200	5.99	13.1	-4.2	8.1	6.15	130.14
26.300	5.05	11.0	-3.6	6.8	5.19	130.12
26.400	4.26	9.3	-3.0	5.7	4.38	130.10
26.500	3.59	7.9	-2.5	4.8	3.69	130.09
26.600	3.02	6.6	-2.1	4.1	3.10	130.07
26.700	2.54	5.6	-1.8	3.4	2.61	130.06
26.800	2.13	4.7	-1.5	2.9	2.19	130.05
26.900	1.79	3.9	-1.3	2.4	1.84	130.04
27.000	1.50	3.3	-1.1	2.0	1.54	130.04
27.100	1.25	2.8	-0.9	1.7	1.29	130.03
27.200	1.05	2.3	-0.7	1.4	1.08	130.03
27.300	0.87	1.9	-0.6	1.2	0.90	130.02
27.400	0.72	1.6	-0.5	1.0	0.74	130.02
27.500	0.59	1.3	-0.4	0.8	0.61	130.01
27.600	0.48	1.1	-0.3	0.7	0.50	130.01
27.700	0.39	0.9	-0.3	0.5	0.40	130.01
27.800	0.32	0.7	-0.2	0.4	0.33	130.01
27.900	0.25	0.6	-0.2	0.3	0.26	130.01
28.000	0.20	0.5	-0.1	0.3	0.21	130.00
28.100	0.15	0.4	-0.1	0.2	0.16	130.00
28.200	0.11	0.3	-0.1	0.2	0.11	130.00
28.300	0.08	0.2	-0.1	0.1	0.08	130.00
28.400	0.05	0.1	-0.0	0.1	0.05	130.00
28.500	0.03	0.1	-0.0	0.0	0.03	130.00
28.600	0.01	0.0	-0.0	0.0	0.01	130.00
28.700	0.00	0.0	-0.0	0.0	0.00	130.00

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

Starting Pond W.S. Elevation = 130.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	827.09 cfs
Peak Outflow	=	807.48 cfs
Peak Elevation	=	150.76 ft

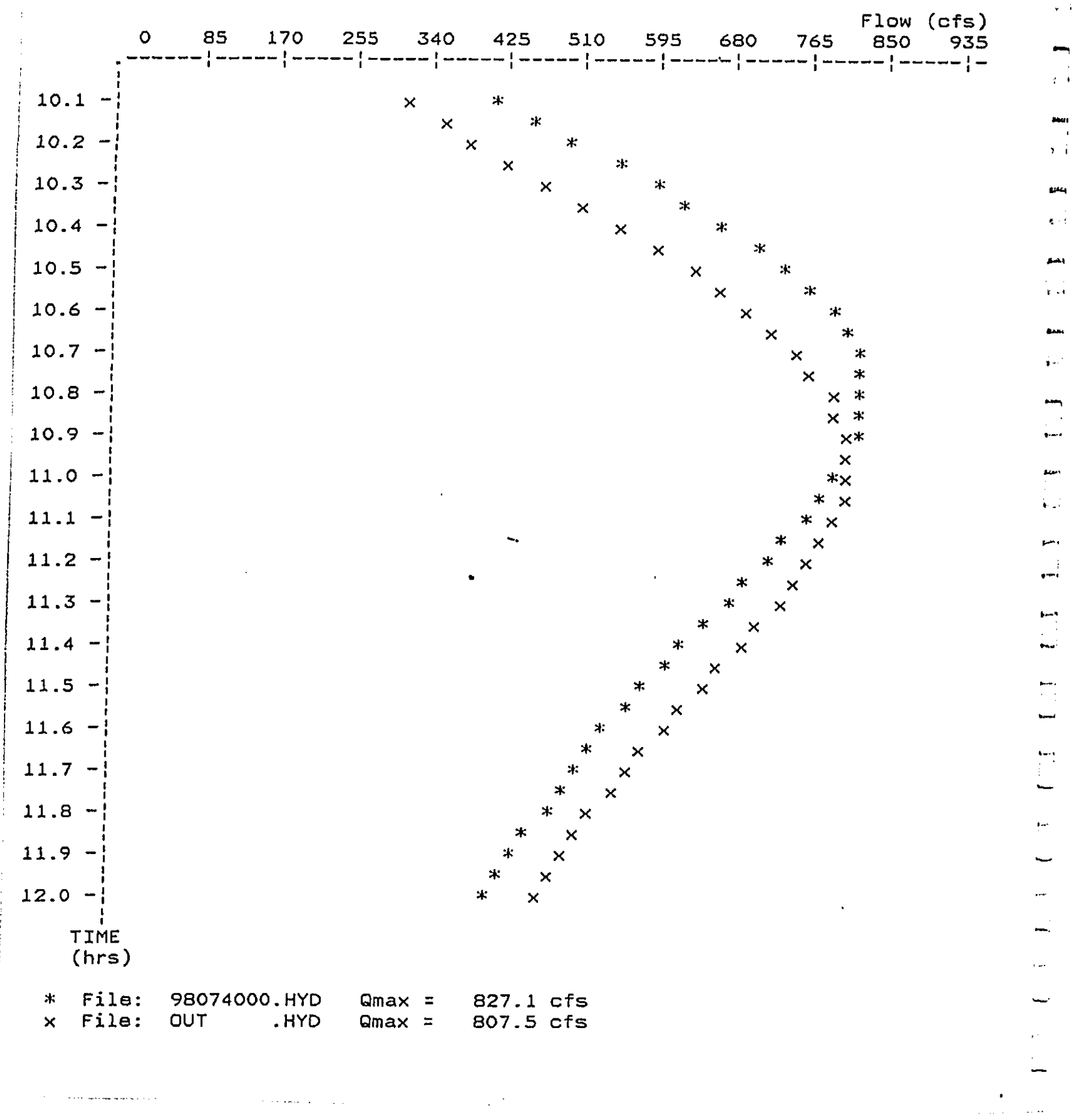
***** Summary of Approximate Peak Storage *****

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	9.87 ac-ft
Total Storage in Pond	=	9.87 ac-ft

Pond File: 98074000.PND
Inflow Hydrograph: 98074000.HYD
Outflow Hydrograph: OUT .HYD

EXECUTED: 04-28-1999
15:42:29

Peak Inflow = 827.09 cfs
Peak Outflow = 807.48 cfs
Peak Elevation = 150.76 ft



* File: 98074000.HYD Qmax = 827.1 cfs
× File: OUT .HYD Qmax = 807.5 cfs

Appendix D

Traffic Impact Analysis Report

Parsons Brinckerhoff
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813
808-531-7094
Fax: 808-528-2368

April 27, 1999

Mr. Robert McNatt
Kapalua Land Company, Ltd.
1000 Kapalua Drive
Kapalua, Maui, Hawaii 96761

Re: Site 19 Traffic Impact Analysis

Dear Mr. McNatt:

This letter serves as a preliminary traffic impact analysis for the proposed Site 19 residential development in Kapalua Resort in West Maui, Hawaii.

Background

Site 19 is part of Kapalua PD-1, a previously approved planned development. It is located adjacent to and makai of Honoapiilani Highway, between Napilihau Street and Office Road. Directly to the north is the Pineapple Hill single-family residential development. To the south is another area of single-family residential development accessed from Lower Honoapiilani Highway via Hui Road F. Figure 1 is a vicinity map illustrating the approximate location of the Site 19 development.

Access to Site 19 is proposed at an existing access on Honoapiilani Highway and at the existing access for the Pineapple Hill residential development onto Simpson Way within the Kapalua Resort. Currently, the Pineapple Hill subdivision is physically connected to both accesses. However, only the access onto Simpson Way is used by its residents. The access onto Honoapiilani Highway is normally closed to general traffic and used by maintenance vehicles servicing the Pineapple Hill subdivision. When Site 19 is developed, it is proposed to change this maintenance entrance to an entrance for both Site 19 and Pineapple Hill residents. The Pineapple Hill subdivision is and the Site 19 residential development will be gated communities. Therefore, both the access to Simpson Way and the access to Honoapiilani Highway have card-controlled access gates.

Existing Traffic Conditions

Existing traffic volumes were obtained from the State of Hawaii Department of Transportation (SDOT) Traffic Survey Data, Islands of Maui & Molokai, 1997. Count Station C-12-F located at Napilihau Street was used. Traffic volumes north of Napilihau Street are representative of through traffic volumes on Honoapiilani Highway that would pass by the access to Site 19. As shown, the AM peak hour occurs in the mid-morning, while the PM peak hour occurs during the afternoon commute time period. Figure 2 summarizes the traffic volumes on Honoapiilani Highway in the vicinity of the Site 19 access.

Site-Generated Traffic Volumes

Traffic generated by Site 19 was estimated by applying trip generation rates documented in the Institute of Transportation Engineers (ITE) publication entitled, Trip Generation, 6th edition. Trip generation rates for Category 260-Recreational Homes were used to estimate vehicular traffic generated. These type of homes are usually located in a resort and interact strongly with that resort. These dwellings are often second homes used by the owner periodically or rented on a seasonal basis. Based on discussions with Kapalua Resort, the Site 19 homes are assumed to have these characteristics. There are 31 single-family dwelling units proposed for Site 19.

Trip generation rates were applied to the 31 dwelling units to estimate the AM and PM peak hour traffic volumes generated. Table 1 summarizes the vehicular trips estimated by applying the trip generation rates.

Table 1

Trip Generation Summary

Land Use	Intensity		AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
Site 19	31	du	6	6	4	6
Existing Pineapple Hill	99	du	16	16	11	15
Total	130	du	22	22	15	21

Note: Assumed Recreational Homes (Land Use Code 260) per ITE Trip Generation, 6th Edition.
Trip generation is in vehicles/hour, du=dwelling units
AM peak hour is the mid-morning peak, PM peak hour is the afternoon commuter peak.

Vehicular trips generated by full buildout of the existing Pineapple Hill subdivision were also estimated. The Pineapple Hill subdivision is expected to utilize the driveway on Honoapiilani Highway once it is open to Site 19 traffic. Therefore, some of these trips were also included in the evaluation of that access intersection on Honoapiilani Highway.

As shown, the estimated vehicular trips generated by Site 19 is very small, about 10 vehicles per hour (vph) in each peak hour. The existing Pineapple Hill subdivision generates about 32 vph in the AM peak hour and 26 vph during the PM peak hour. All of the Pineapple Hill subdivision traffic currently uses the access onto Simpson Way within the Kapalua Resort.

Opening the access on Honoapiilani Highway will allow traffic from both the proposed Site 19 and the existing Pineapple Hill subdivision to access Honoapiilani Highway directly.

The estimated vehicle trips were directionally distributed and assigned to the highway network. The directional distribution was assumed to be:

- south on Honoapiilani Highway via access: 80 percent
- north on Honoapiilani Highway via access: 10 percent
- internal to Kapalua Resort via Simpson Way: 10 percent

These percentages were based on field observations of existing traffic activity in the area and on knowledge of Kapalua Resort operations.

Table 2 summarizes the resulting future traffic patterns.

Table 2

Trip Distribution and Assignment
(Combined Site 19 and Existing Pineapple Hill Subdivision)

Time Period	Volume (vph)	South Honoapiilani		North Honoapiilani		Internal to Simpson Way	
		Left Into Access from NB Honoapiilani	Right out of Access to SB Honoapiilani	Right Into Access from SB Honoapiilani	Left Out of Access to NB Honoapiilani	In	Out
AM Peak	44	16	16	3	3	3	3
PM Peak	36	11	15	3	3	2	3

Notes: AM peak hour occurs during mid-morning
PM peak hour occurs during afternoon commuter peak
NB=northbound, SB=southbound, vph=vehicles/hour

Future Traffic at the Proposed Access on Honoapiilani Highway

The future traffic volumes at the proposed access intersection on Honoapiilani Highway are comprised of three components:

- Traffic generated by Site 19;
- Traffic generated by existing Pineapple Hill subdivision;
- Future traffic on Honoapiilani Highway.

The first two components are summarized in Table 2. The third component was estimated by growth factoring the 1997 traffic volumes 5 percent annually to estimate through traffic on Honoapiilani Highway within a time frame that allows for occupied buildout of Site 19 five years from now (approximately 2004).

Figure 3 illustrates the projected AM and PM peak hour traffic volumes at the proposed Site 19 access on Honoapiilani Highway.

Intersection Analysis

The peak hour traffic turning movements shown in Figure 3 were evaluated using the unsignalized intersection capacity method documented in the 1994 Highway Capacity Manual. This analysis technique identifies delays for movements most affected at an unsignalized intersection. For a "T"-intersection such as the Site 19 access, the movements evaluated are:

- left-turn out of access (EB L);
- right-turn out of access (EB R);
- left-turn into access (NB L).

Table 3

Intersection Analysis of Site 19 Access at Honoapiilani Highway

Time Period	Overall	EB L	EB R	NB L
AM Peak Hour	A (0.2)	C (12.8)	A (4.6)	A (3.6)
PM Peak Hour	A (0.2)	C (18.1)	B (5.6)	A (4.3)

Note: X (#.#) = Level of Service (Average Total Delay Per Vehicle in seconds/vehicle)
AM peak hour is mid-morning, PM peak hour is afternoon commuter peak.
Unsignalized method per 1994 Highway Capacity Manual

As shown in Table 3, the Site 19 Access intersection on Honoapiilani Highway is projected to operate well during peak hour conditions. The intersection capacity worksheets are attached.

Conclusion and Recommendations

A traffic impact analysis was conducted for the proposed Site 19 resort residential development. It was found that traffic estimated to be generated from the 31 dwelling units planned for Site 19 and the rerouting of existing Pineapple Hill subdivision trips to the Site 19 access on Honoapiilani Highway could be accommodated by a STOP-sign controlled intersection at good intersection service levels.

The proposed Site 19 generates a very small amount of additional traffic: 12 vph in the AM peak hour and 10 vph during the PM peak hour.

The intersection of the Site 19 Access at Honoapiilani Highway is an existing intersection that is currently used only for maintenance vehicles. It is proposed to used the Site 19 Access as its main access and to allow it to be used for access to the Pineapple Hill subdivision as well. There is an existing left-turn bay in the painted median of Honoapiilani Highway for the Site 19 Access. The Access will be gated and card controlled to limit access to residents of Site 19 and Pineapple Hill subdivision only.

It is recommended that, when converting the Site 19 Access from an occasionally used maintenance access to an access regularly used by residents of the Site 19 and Pineapple Hill subdivisions, appropriate queuing distance be provided between the gate and Honoapiilani Highway to store at least one vehicle. This allows a vehicle to wait for the gate to open without having its tail protruding into the southbound through traffic lane on Honoapiilani Highway. Appropriate centerline pavement striping would also help vehicles align themselves properly when entering or existing he property.

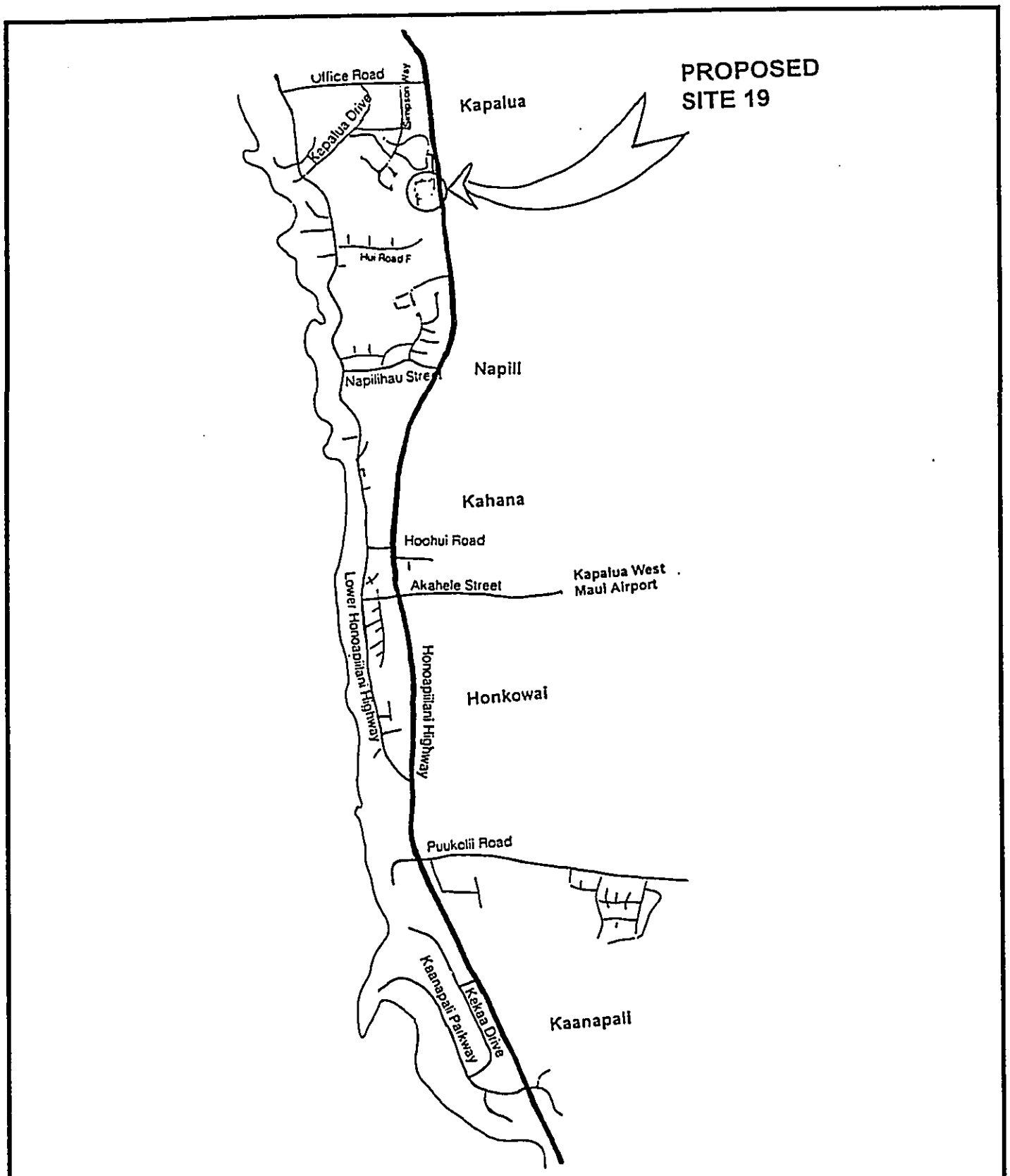
If you or reviewing agencies have questions or comments regarding this analysis, please call.

Very truly yours,
Parsons Brinckerhoff Quade & Douglas, Inc.

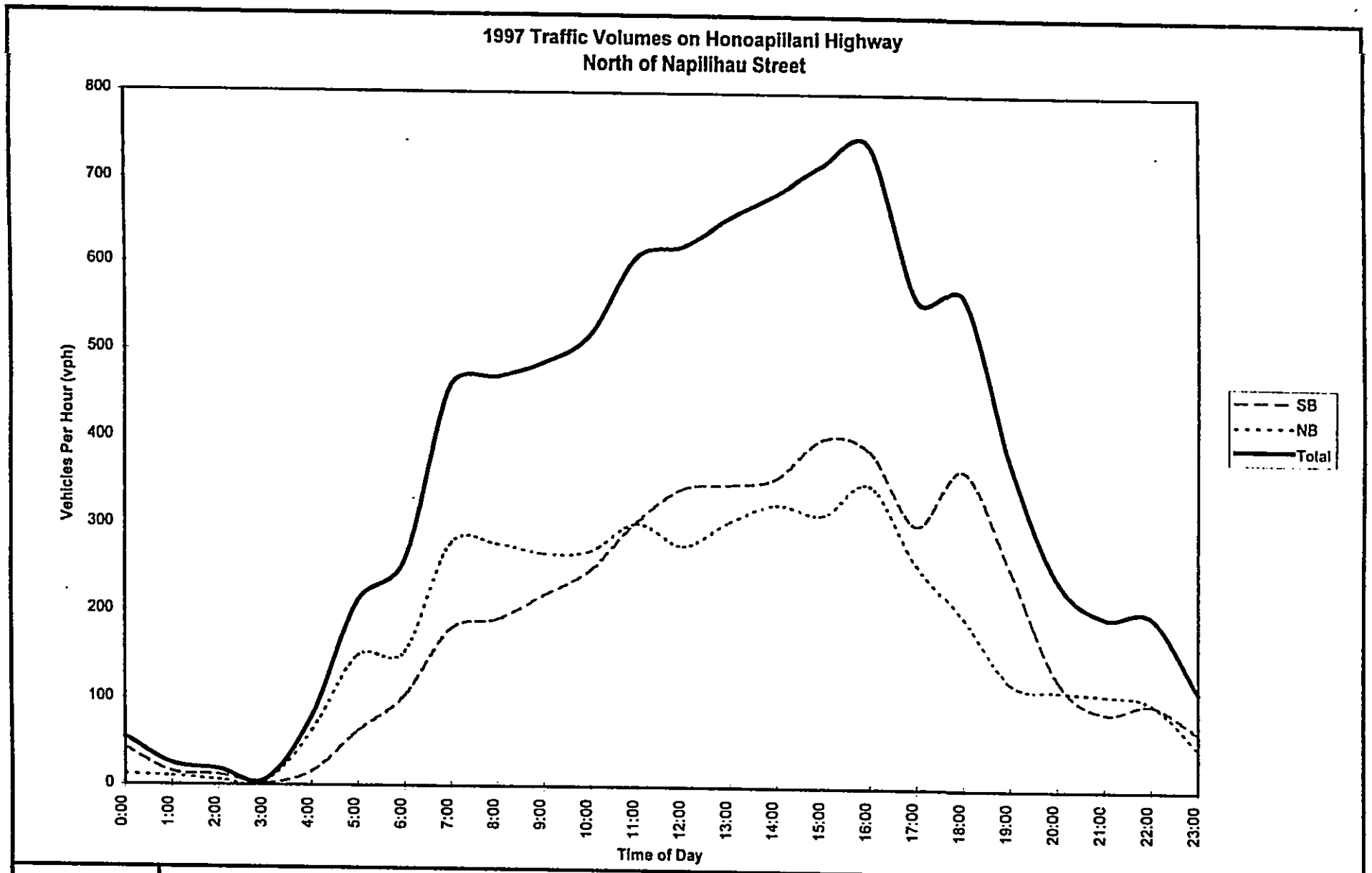
Wayne Y. Yoshioka
Senior Supervising Transportation Engineer

attachments

cc: Glenn Tadaki — Munekiyo, Arakawa, & Hiraga, Inc.
Warren Unemori — Warren S. Unemori Engineering, Inc.

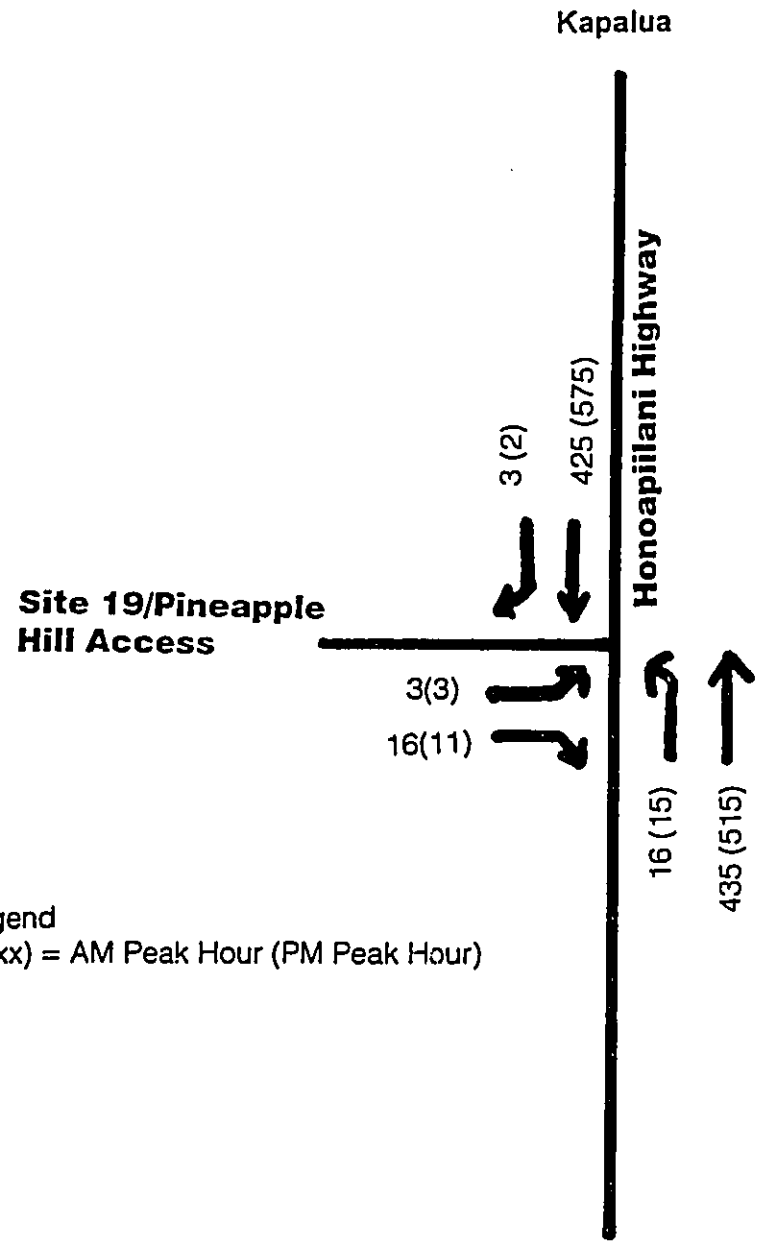


PB 100 YEARS	**VICINITY MAP**	Figure **1**



1997 TRAFFIC VOLUMES
ON HONOAPIILANI HIGHWAY

Figure
2



PB 100 YEARS	**PROJECTED PEAK HOUR TRAFFIC VOLUMES AT ACCESS**	Figure **3**

Center For Microcomputers In Transportation
University of Florida
512 Weil Hall
Gainesville, FL 32611-6585
Ph: (352) 392-0378

Streets: (N-S) Honoapiilani Hwy (E-W) Pineapple Hill
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... Miyamoto
Date of Analysis..... 4/23/99
Other Information.....Future AM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes	16	435			425	3	3		16			
PHF	.9	.9			.9	.9	.9		.9			
Grade		0			0			0				
MC's (%)	0						0		0			
SU/RV's (%)	0						0		0			
CV's (%)	1						1		1			
PCE's	1.01						1.01		1.01			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		474
Potential Capacity: (pcph)		796
Movement Capacity: (pcph)		796
Prob. of Queue-Free State:		0.98

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		475
Potential Capacity: (pcph)		1018
Movement Capacity: (pcph)		1018
Prob. of Queue-Free State:		0.98

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		974
Potential Capacity: (pcph)		289
Major LT, Minor TH Impedance Factor:		0.98
Adjusted Impedance Factor:		0.98
Capacity Adjustment Factor due to Impeding Movements		0.98
Movement Capacity: (pcph)		284

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB L	3	284		12.8	0.0	C	
EB R	18	796		4.6	0.0	A	5.9
NB L	18	1018		3.6	0.0	A	0.1

Intersection Delay = 0.2 sec/veh

Center For Microcomputers In Transportation
University of Florida
512 Weil Hall
Gainesville, FL 32611-6585
Ph: (352) 392-0378

Streets: (N-S) Honoapiilani Hwy (E-W) Pineapple Hill
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... Miyamoto
Date of Analysis..... 4/23/99
Other Information.....Future PM Peak Hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	< 0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes	15	515			575	2	3		11			
PHF	.9	.9			.9	.9	.9		.9			
Grade		0			0			0				
MC's (%)	0						0		0			
SU/RV's (%)	0						0		0			
CV's (%)	1						1		1			
PCE's	1.01						1.01		1.01			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)		640
Potential Capacity: (pcph)		656
Movement Capacity: (pcph)		656
Prob. of Queue-Free State:		0.98

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)		641
Potential Capacity: (pcph)		848
Movement Capacity: (pcph)		848
Prob. of Queue-Free State:		0.98

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)		1229
Potential Capacity: (pcph)		206
Major LT, Minor TH Impedance Factor:		0.98
Adjusted Impedance Factor:		0.98
Capacity Adjustment Factor due to Impeding Movements		0.98
Movement Capacity: (pcph)		202

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
EB	L	3	202		18.1	0.0	C	
EB	R	12	656		5.6	0.0	B	8.3
NB	L	17	848		4.3	0.0	A	0.1

Intersection Delay = 0.2 sec/veh