KAMAAINA APARTMENTS PROJECT
KAHALUU, NORTH KONA, HAWAII

FINAL ENVIRONMENTAL IMPACT STATEMENT

Prepared for

KAMAAINA CORPORATION
76-952F HUALALAI ROAD
KAILUA, KONA, HAWAII 96740

by

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OCTOBER, 1988

COPY

PLANNING DEPARTMENT
25 AUPUNI STREET

COUNTY OF HAWAII
HILO, HAWAII 96720

'88 NOV 21 A11 :24

November 17, 1988

Mr. Joseph Marcelin, Principal
Kamaaina Corporation
76-952F Hualalai Road
Kailua-Kona, HI 96740

Dear Mr. Marcelin:

Final EIS - Kamaaina Apartments Project
Determination of Acceptability

We have reviewed the final EIS for the above subject proposed project.

Chapter 343, HRS, requirements were triggered by the filing of a Special Management Area (SMA) Use Permit petition to allow the construction of an apartment building and related improvements within the Kahalu'u Historic District, which is on the National Register of Historic Places.

We have found the EIS satisfies the following criteria:

1. Procedures for assessment, consultation, review and revisions required for the EIS have been complied with;

2. Content requirements for a Final EIS have been satisfied; and

3. Comments submitted during the review process have been responded to satisfactorily and have been incorporated or appended to the EIS.

Acceptance of the Final EIS is with the understanding, however, that an intensive level field survey report is to be resolved in subsequent regulatory approvals.

Should you have any questions, please feel free to contact our office.

Sincerely,

ALBERT LONO LYMAN
Planning Director

AK:lv

cc: Office of Environmental Quality Control
James H. Pedersen

FINAL ENVIRONMENTAL IMPACT STATEMENT
KAMAAINA APARTMENTS PROJECT
PROJECT SUMMARY

Prepared by:

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ABSTRACT:

Kamaaina Corporation proposed to develop a 32-unit multifamily apartment complex on a 32,000 square foot project site in Kahaluu, North Kona, Hawaii. The complex would consist of three 3-story buildings connected by common space walkways, stairs, and an elevator.

Project alternatives included consideration of apartment development in South Kohala, the Kealakehe Planned Community, and the Kahaluu area, as well as the "no project" option.

The Kamaaina Apartments project will generate an additional residential population of 112 persons in the Kahaluu area. The added population will impact onsite archaeological features, local school enrollments, recreational facilities, traffic on Alii Drive, and supporting utility systems. Existing site vegetation will be eliminated by the clearing and scrubbing of the site. New impermeable surfaces will reduce the amount of surface recharge into the local aquifer.

Project impacts will be mitigated by the construction of onsite drywells which will be used to percolate roof and parking area drainage into the substratum. The project will produce an estimated 52 part-time construction jobs over a one-year period. Almost $2.7 million of direct, indirect and induced income to the State of Hawaii will be generated by the project. Consumer purchases by residents of the apartment complex will also create, or support, 12 new jobs in retail commercial stores and services. This employment will create $175,000 in total direct household income. The project is consistent with the housing element of the Hawaii County General Plan; the Hawaii State Plan; and the State Functional Housing Plan.

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INTRODUCTION

CHAPTER 1.0

INTRODUCTION

1.1 PURPOSE OF THE REPORT

The purpose of this environmental impact statement is to:

1. identify, evaluate and compare reasonable project alternatives for providing additional multi-unit apartments on the Island of Hawaii's North Kona district via a private development organization;

2. evaluate selected characteristics and trends of the project site and surrounding North Kona community which influence local physical, biological, and cultural resources, and the related built environment;

3. determine and analyze significant environmental consequences which are expected to result from the development of the selected project alternative; and

4. identify practical mitigative measures which can reduce the impact of the proposed housing development.

This information is being provided as part of Kamaaina Corporation's application for a Special Management Area (SMA) permit to the Hawaii County Planning Commission. The Planning Commission is also reviewing a related rezoning application which proposes to change existing single family residential zoning to a more dense multi-unit residential designation. The EIS will also be circulated to all appropriate County, State and federal agencies; private organizations; and concerned individuals identified by the State Office of Environmental Quality Control. Consequently, this document will serve as a central source of information for reviewing agencies and organizations which have responsibility and/or interest in 1) the management of statewide resources, and 2) the evaluation of development actions that may affect Hawaii's natural and man-made resources.

Preparation of the EIS was prompted by Hawaii County's initial environmental assessment and preparation notice which suggested that the proposed 32-unit apartment building might have a substantial impact upon the environment. Hawaii County's determination was based upon Section 11:200:12 of the State Environmental Quality Commission's (EQC) Regulations. This section of the EQC regulations indicates that an EIS may be required for a project having limited impact, but considerable cumulative effect upon the environment (Appendix A).

1.2 SCOPE OF THE EIS

This EIS contains a combination of quantitative and qualitative analyses which were made to meet the objectives outlined in

section 1.1. These objectives are consistent with the State of Hawaii requirements for the preparation of environmental impact statements. These requirements are identified in Chapter 343 of the Hawaii Revised Statutes, and the rules and regulations of the State Office of Environmental Quality Control.

Particular attention is given to the resources and potential impacts upon the Kahaluu Historic District, as well as the overall cumulative effect of the proposed project. These planning issues were identified in a January, 1988 determination by the Hawaii County Planning Department that the preparation of an EIS was warranted (Appendix A).

Other issues were also addressed in the EIS because of the nature and scope of the proposed project. Increased vehicular traffic along Alii Drive, particularly at the Makolea intersection, was evaluated to assess potential concerns for vehicular traffic movements along one of Kona's primary shoreline access points. The relationship of the proposed project development to the nearby Keauhou Bay Shopping Center was analyzed to determine potential consumer demands which would be generated upon nearby retail services. The imposition of the project upon the local infrastructure is also examined to evaluate potential impacts upon local schools, recreational facilities, and public utility systems. Shoreline views have also been considered in terms of potential impacts of adjacent residents and general views from Kuakini Highway.

1.3 REPORT ORGANIZATION

Chapter 1.0 outlines the general objectives of the EIS and the intended use of the information presented.

Chapter 2.0 identifies and compares five different project alternatives to providing additional single family and multi-unit housing in the North Kona district. The issues influencing the selection of the most desirable alternative by Kamaaina Corporation are also examined.

Chapter 3.0 assesses the significant characteristics and trends influencing the physical, biological, and cultural resources, and built environment, of the affected project site and the surrounding North Kona district.

Chapter 4.0 evaluates the anticipated environmental consequences of the selected project alternative. To the extent possible, significant impacts are quantified to facilitate the reviewers' assessment of project consequences. Feasible mitigation measures, which are expected to reduce anticipated project consequences, are also identified.

The relationship between the short-term use of the project area's natural and man-made resources is explored and contrasted with longer term resource management considerations. Anticipated project consequences which will require an irreversible or

irretrievable commitment of natural resources are also identified.

Chapter 5.0 provides a summary of references used during the preparation of the EIS.

1.4 METHODOLOGY

Preparation of the EIS and related evaluations involved the performance of both quantitative and qualitative analyses. These analyses relied primarily upon available information from public agencies and private organizations. Available information was obtained through the use of existing technical reports and supplemented by informal discussions with selected agency representatives.

The evaluation of the rental housing market in West Hawaii is based primarily upon information available from two recent housing assessments. These include:

a **Comprehensive Housing Market Analysis, Hawaii County Housing Market Area** which was prepared by the U.S. Department of Housing and Urban Development in September, 1987; and

a preliminary market assessment for a proposed residential, resort and commercial development at Kealakehe, Kona which was prepared by Belt Collins & Associates in January, 1988.

These analyses and forecasts presented in these reports established a statistical basis for evaluating and quantifying the cumulative impact of the proposed project upon the local economy and built environment.

An archaeological reconnaissance survey was made of the project site by Paul H. Rosendahl, Ph.D. in August, 1986. This survey was made to identify and locate sites of features which have archaeological significance.

1.5 AGENCY AND PUBLIC CONSULTATION

During the preparation of the initial environmental assessment for this project, consultation was made with the following public agencies:

County of Hawaii

- Board of Water Supply
- Real Property Tax Division
- Police Department
- Fire Department
- Department of Parks and Recreation

State of Hawaii

Department of Health
Department of Land and Natural Resources
Department of Education

Documented concerns and comments from 16 public agencies, which reviewed the draft EIS report, are presented in Appendix B along with the responses made during the consultation process by James Pedersen, Planning Consultant.

1.6 RESPONSIBILITY FOR EIS PREPARATION

This environmental impact statement was prepared by James H. Pedersen, Planning Consultant, at the request of Kamaaina Corporation, a reputable land development organization based in West Hawaii.

Preparation of the EIS was made by Mr. Jim Pedersen, principal planner, of James H. Pedersen, Planning Consultant. Supplementing his efforts was the prior field work and documentation by two professional archaeologists from Paul H. Rosendahl, Ph.D., Inc. who completed an archaeological reconnaissance survey of the project site for Kamaaina Corporation in August, 1986.

Mr. Jim Pedersen is a planning consultant with 18 years of professional experience associated with the evaluation and master planning of a regional, community and site specific development projects throughout the Pacific Basin. These projects involved his management and preparation of regional economic and infrastructure development programs; community development and redevelopment projects; site and facility plans for specific residential, commercial and industrial development projects; and related environmental evaluations.

Ms. Theresa Donham, a supervisory archaeologist with Paul H. Rosendahl, Ph.D., Inc., has 13 years of experience in archaeology. Her professional background includes experience in historical documents research, underwater archaeology survey and excavation, reconnaissance and intensive site survey, prehistoric and historic site excavation, statistical analysis, and laboratory supervision.

Mr. Alan Walker is also a supervisory archaeologist wit Paul H. Rosendahl, Ph.D., Inc. He has 6 years of professional field experience as an archaeologist. This experience has included recent projects on the Island of Hawaii, Oahu, and Maui in Hawaii; and the Island of Tinian in the Commonwealth of the Northern Marianas.

CHAPTER 2.0

PROJECT ALTERNATIVES

CHAPTER 2.0

PROJECT ALTERNATIVES

2.1 SIGNIFICANT FACTORS INFLUENCING ALTERNATIVE SELECTION

West Hawaii (Figure 2-1) has rapidly grown in recent years due to a major expansion in the visitor industry which has focused primarily on attracting the upscale or higher income visitor. During the 1988-1989 period, it is expected that about 5,750 jobs will be added to the Big Island economy. Roughly half of these jobs will be generated from the ongoing construction of Hyatt Waikoloa (1,200 hotel units) in South Kohala (U.S. Department of Housing and Urban Development, 1987).

Significant increases in construction employment, strong residential real estate sales, and continued visitor industry growth have resulted in a saturated and expensive rental housing marketplace. In late 1987, virtually no vacancies existed in Kona. This condition has been compounded by a decrease in the construction of rental housing units since 1984; however, this trend has also been eased somewhat by the short and long-term rental of some condominiums in West Hawaii (U.S. Department of Housing and Urban Development, 1987). From January, 1986 to August, 1987, the average monthly cost of apartment rentals in West Hawaii rose from $350 to $786 (Belt Collins & Associates, 1988; Hawaii County Office of Community and Housing Development, 1987).

In its analysis of these trends, the U.S. Department of Housing and Urban Development concluded that:

> "The great majority of the rental units needed to balance the market over the next two years should be located in the Kona-Kohala-Waimea areas. The major problem in this area is affordability. Additional rental units would likely prove marketable, either by single households or doubling up" (U.S. Department of Housing and Urban Development, 1987).

In July, 1986, Kamaaina Corporation was formed to establish a locally-based land development company. The intent of the corporation was to purchase a small amount of land in the North Kona district which potentially could be developed for the construction of apartment units. The corporation's interest is to provide apartment rental units which are affordable to "moderate" and "gap" income households. Maximum annual incomes for "moderate" and "gap" income households in 1987 was recently estimated to range from $21,900 to $30,900 (Belt Collins & Associates, 1988).

By late 1986, Kamaaina Corporation acquired a 10,700-square foot parcel of land (TMK 7-8-14:92) in the Kahaluu, Kona area. This parcel is located mauka of Kahaluu Beach Park near the eastern

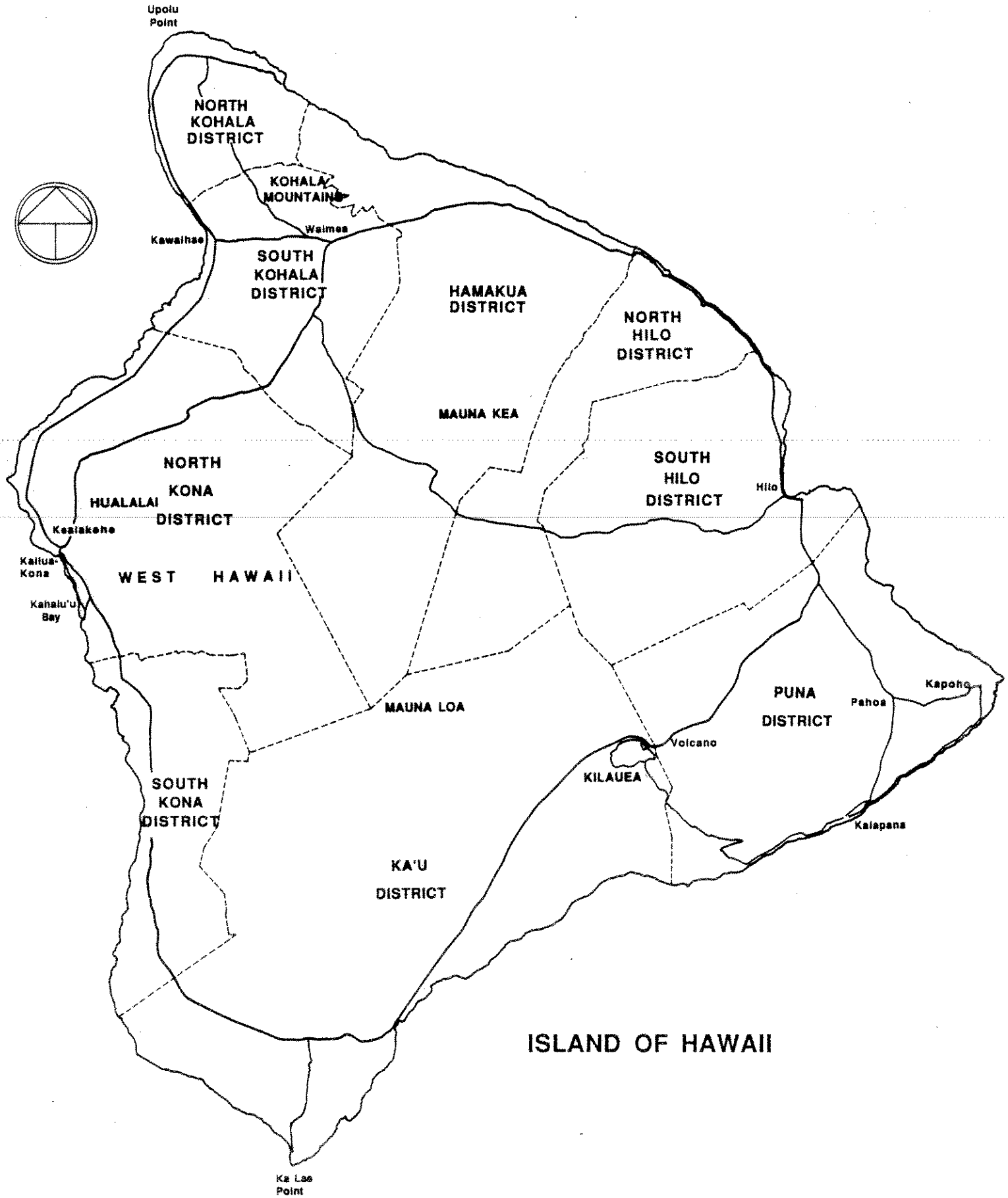


FIGURE 2-1
PROJECT ALTERNATIVES LOCATION
KAMA'AINA APARTMENTS PROJECT

end of Makolea Street (Figure 2-2). The corporation's initial development concept was to construct one five-plex housing unit on this parcel. However, as the corporation more closely examined local housing trends and anticipated development costs, it learned of the availability of two adjacent residential lots (TMK 7-8-14: 90 and 91). This development opportunity prompted the corporation to revise its initial development concept to construct one 32-unit apartment complex instead of one five-plex housing unit. This revision in development plans was made in view of growing consumer demands in the West Hawaii rental market and its recognition of a feasible development opportunity.

Under existing County zoning, only one single family residence is presently allowed on each of three adjoining parcels. The project site is also situated within a special management area designated by Hawaii County. In July, 1987, Kamaaina Corporation filed applications for a change of zone from RS-7.5 (single family residential) to RM-1 (residential multiple family), as well as a special management area use permit. This environmental impact statement represents a portion of the documentation required for Kamaaina Corporation's special management area application.

2.2 METHOD OF EVALUATION

Three project alternatives are presented in Sections 2.3 through 2.5. Each alternative is presented in terms of general project scope, location, and significant project consequences. Subsequently, each development option is further evaluated on a comparative basis. Arbitrary statistical ratings and related comparisons were also made to determine the desirability and undesirability of those potential impacts which 1) may be significant and/or 2) are of concern to public agencies coordinated with during the preparation of the EIS (Figure 2-2).

Project evaluation criteria used for the comparison of alternatives included a combination of site specific, neighborhood, regional, and cumulative impact issues. Those issues included the following considerations:

Expansion of public utility systems, facilities and services in West Hawaii;
Development of additional community and neighborhood shopping centers in West Hawaii;
Rental housing demands in West Hawaii;
Retail and service employment in West Hawaii;
Vehicular traffic in the North Kona and South Kohala districts;
Recreational parks in the North Kona and South Kohala districts;
Resources of the Kahaluu Historic District;
Visual resource quality of West Hawaii; and
Noise levels in the North Kona and South Kohala districts.

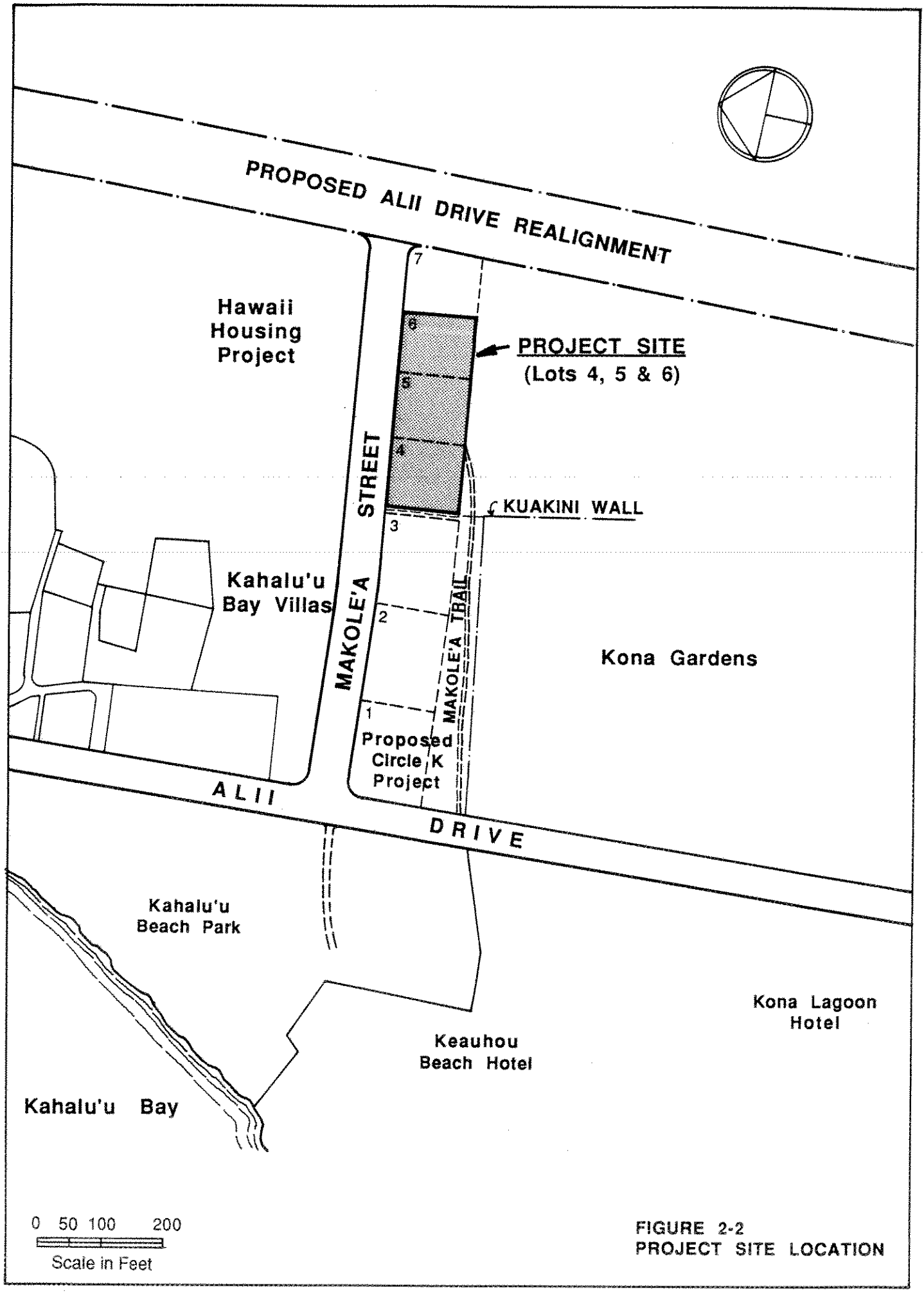


FIGURE 2-2
PROJECT SITE LOCATION

The statistical rating of alternatives was made by assigning weighted values to each of the evaluation criteria and subsequently rating the potential impact of each alternative on each of the established evaluation criteria.

Weighted values ranged from 0.1 to 1.0. Higher weighted values indicated issues believed to be of greater importance to public agencies and the general public. The rating of individual criteria for each alternative involved the determination of numerical scores ranging from 1 to 10. Lower scores, e.g. 0 to 3, indicate a potential adverse impact which will not benefit the community or the general public. A score of 5 or 6 suggests that the implementation of the given alternative will not influence, or significantly affect, the criteria in question. Scores ranging from 7 to 10 represent potential impacts which are expected to benefit the community and/or general public. The alternative receiving the highest cumulative score is expected to represent the most desirable overall alternative.

2.3 ALTERNATIVE A: APARTMENT DEVELOPMENT IN THE SOUTH KOHALA AREA

Waimea town in South Kohala (Figure 2-1) is the hub of commercial activity, education, and public services serving South and North Kohala and some villages along the Hamakua coast. The amount of expected employment generation within the South Kohala district could easily generate a market for multi-family apartments in this area. Such development would require and promote the expansion of existing community and public services within the South Kohala area.

The lack of public infrastructure, e.g. water supply, would necessitate greater public expenditures or significant private investment capital to support the private development of new or expanded community shopping centers in Waimea of other undeveloped district areas, more public shoreline recreational areas, and public services which could serve a new resident population in the South Kohala area. Hawaii County policy has, and continues to, encourage the expansion of its infrastructure via private investment and related public agency concessions concerning proposed land uses. In recognition of these factors and policies, Hawaii County has permitted only a limited amount of land to be rezoned for multiple family and commercial use in the Waimea area.

Private investment by resort developers along the South Kohala coast has been able to support infrastructure development costs in new resort complexes because of a greater potential return-on-investment per unit and the capability to amortize initial development costs over a longer investment period. Potential returns from a small, privately-owned apartment complex would not, in itself, be adequate to support any expansion or significant improvements of community infrastructure. This is particularly true for apartment developments which will be marketed to the "moderate" and "gap" income groups.

A second potential option is the development of multi-family employee housing within each of the larger resort complexes in South Kohala. However, such development reduces the profitability of the overall complex, and may not be desirable by employees. While resort hotel and condominium employees would prefer being conveniently located close to work, it is not likely they would prefer living within the resort complex.

2.4 ALTERNATIVE B: APARTMENT DEVELOPMENT WITHIN THE KEALAKEHE PLANNED COMMUNITY

A recently-completed Kealakehe Planned Community Feasibility Study, prepared by Belt Collins & Associates, concludes that there is a "....substantial market for rental apartments." Further, it is recommended by Belt Collins that apartment development could initially be used to meet local multifamily rental demands. Subsequently, these units could be converted to condominium use as the market changes.

The market for apartment rental units would be primarily directed to the "low" and "moderate" income groups. The "moderate" income group is expected to represent approximately 25 to 35 percent of the projects overall target market; however, the proportion of the market expected for apartment rental is not specified.

The "gap" group is considered to be more marketable for the purchase of single family units. It is estimated in the feasibility study that the "gap" group will constitute 30 to 50 percent of the project's overall market. No suggestion is given that multifamily rental units will be offered to this market segment.

This project clearly offers a potential option for developing a wide-variety of affordable housing for residents in the North Kona and South Kohala areas. A planned community within the 1,500-acre site in Kealakehe could be the focal point for residential home sales and apartment rentals during the next 10 to 15 years. However, as presently conceptualized, this project would be unable to meet a majority of the "moderate" and "gap" groups demand for apartment rentals since residential lot and home sales will be needed to amortize the cost of up-front infrastructure development over the long term.

2.5 ALTERNATIVE C: THE NO PROJECT ALTERNATIVE

One approach to meeting future apartment rental needs in West Hawaii is to not develop the lands acquired by Kamaaina Corporation in the Kahaluu area. While the unavailability of 32 apartment units is not significant to meeting the overall cumulative demand expected during the next 17 years, a reduced number of potential rental units in the marketplace will contribute to growing apartment rental prices.

Increased apartment rental rates may also discourage potential "moderate" income wage earners from relocating to Kona where

greater employment opportunities exist. Conversely, existing "moderate" income wage earners may become discouraged enough with increased housing costs to relocate to other residential areas on the island where less job opportunities are available. In either case, the lack of more affordable rental housing in Kona may ultimately result in greater unemployment.

2.6 ALTERNATIVE D: DEVELOPMENT OF APARTMENT RENTAL UNITS IN KAHALUU

A fourth option to meeting increased apartment rental demands in West Hawaii is to develop a 32-unit apartment complex in the Kahaluu area (Figure 2-2) which can be marketable to both the "moderate" and "gap" income groups. This approach will meet a portion of the growing apartmental rental demand in West Hawaii and, at the same time, will not preclude the development of other apartmental rental units at Waimea, Kealakehe, or other areas within the North Kona district.

2.7 COMPARISON OF PROJECT ALTERNATIVES

2.7.1 Housing Needs of the Moderate and Gap Income Groups

The development of multi-family housing in West Hawaii is dependent upon a complex set of factors such as consumer housing preferences and anticipated rental housing demands; the location of existing commercial, recreation, and educational facilities; transportation time to and from place of employment; the location of "competing" multi-family housing projects; and the availability of reasonably-priced land, which is feasible to develop, at the time of investment.

Recent forecasts of future West Hawaii housing demands were developed by Belt Collins and Associates in conjunction with a conceptual master plan for a planned community at Kealakehe, Kona (Table 2-1). These forecasts present anticipated housing demands for the 1988-2005 period. The "moderate" and "gap" income groups, targeted by the Kamaaina Corporation, are expected to require approximately 5,450 housing units (Table 2-1) by the year 2005.

The forecasts presented in Table 2-1, combined with other available housing preference data for Big Island residents (Chapter 3), provide a basis for roughly estimating the potential demand for multifamily apartment rental units during the 1988-2005 period. Information presented in Table 2-1 and Section 3.4.1 suggests that the demand for apartment rentals in West Hawaii will be approximately 90 units annually. These demands are expected to be generated during the 1988-2005 period by anticipated increases in employment via hotel and resort condominium construction, hotel/condominium administration and operations, and indirect commercial services (Table 2-2).

In addition to the 1,200 hotel units already under construction

TABLE 2-1

WEST HAWAII HOUSING UNIT DEMAND BY AFFORDABILITY GROUP
1988 TO 2005

	Total Housing Unit Demand				
	1988-1990	1990-1995	1995-2000	2000-2005	Total
Affordability Group					
Low income (1)	890	1,480	1,620	1,450	5,440
Moderate income (2)	590	990	1,080	970	3,630
Gap group (2)	300	490	540	490	1,820
Subtotal	1,780	2,960	3,240	2,910	10,890
Market Housing Group (3)	1,180	1,980	2,150	1,940	7,250
Total	**2,960**	**4,940**	**5,390**	**4,850**	**18,140**
Average Annual Requirement:					
Affordability Group:					
Low income	300	300	325	290	300
Moderate income	200	200	220	195	200
Gap group	100	100	110	100	100
Subtotal	600	600	655	585	600
Market Housing Group	390	400	430	390	400
Total	**990**	**1,000**	**1,085**	**975**	**1,000**

Notes: (1) The "low" income group has a maximum annual income range of $8,300 to $17,500.
(2) The "moderate" and "gap" income groups represent the target market for Kamaaina Corporation. These groups have a maximum annual income ranging from $21,900 to $30,900.
(3) The "market" income group earns a maximum annual income ranging from $37,000 to $76,900.

Source: Belt Collins & Associates, 1988

TABLE 2-2

PROJECTED ADDITIONAL EMPLOYMENT RESULTING FROM WEST HAWAII VISITOR INDUSTRY DEVELOPMENT 1988 TO 2005

	Total Housing Unit Demand				
	1988-1990	1990-1995	1995-2000	2000-2005	Total
Projected New Visitor Units:					
Hotel units	1,244	1,900	1,500	1,400	6,156
Condominium units	302	1,700	2,000	2,300	6,302
Statewide employment:					
Direct(1):					
Hotel	1,368	2,145	1,691	1,568	6,772
Condominium	60	345	415	456	1,276
Resort commercial	342	536	423	392	1,693
Resort administration	82	129	101	94	406
Subtotal	1,852	3,155	2,630	2,510	10,147
Indirect/induced (2):					
Hotel and resort	1,359	2,357	1,987	1,905	7,608
Commercial	205	322	254	235	1,016
Subtotal	1,564	2,679	2,241	2,140	8,624
Total	**3,416**	**5,834**	**4,871**	**4,650**	**18,771**
Island of Hawaii employment:					
Direct (3)	1,700	2,800	2,400	2,300	9,200
Direct/induced(4)	600	1,100	900	900	3,500
Total	**2,300**	**3,900**	**3,300**	**3,200**	**12,700**

Notes: (1) Direct employees equivalent to 1.1 per hotel unit, 0.2 per condominium unit, 0.25 resort commercial employees per direct hotel employee, 0.06 resort administration employees per direct hotel employee.

(2) Indirect/induced employees equivalent to 0.9 per direct hotel, condominium and resort administration employee, 0.6 per resort commercial employee.

(3) Approximately 90% of all direct jobs assumed to be located on island of Hawaii.

(4) Approximately 40% of direct/induced jobs assumed to be located on island of Hawaii.

Source: Belt Collins & Associates, 1988.

in Waikoloa, an additional 4,800 hotel units are expected to be constructed during the 1990-2005 period (Table 2-2). The development of some 6,300 resort condominium units are anticipated during the same period. The cumulative development of these projects will primarily occur within the South Kohala and North Kona districts (Belt Collins & Associates, 1988).

Kailua-Kona and the surrounding North Kona district is the commercial and residential core for West Hawaii. This area is the most desirable housing location for residents participating in construction and the visitor industry because of the proximity to the commercial shopping areas, local schools, public services, and recreational opportunities. Consequently, the development of a multifamily apartment complex, which is to be marketed to local residents, is expected to be less attractive to most West Hawaii residents if it is situated outside the North Kona district where there are less supporting community services.

2.7.2 Expansion of Community Infrastructure

2.7.2.1 South Kohala

The potential expansion of multifamily areas in South Kohala (Alternative A) will, as stated earlier, require and promote the urbanization of Waimea, Kawaihae, and/or other potential new communities containing multifamily housing and neighborhood shopping complexes. A greater residential population will also impose greater demands upon existing recreational areas, e.g. Hapuna Beach and Spencer Beach parks, and community facilities which are already receiving considerable use via growing resident and visitor populations.

The development of more residential areas and neighborhood shopping complexes in South Kohala (Alternative A) will increase the tax base of Hawaii County, generate greater property and sales tax revenues, and generate more local employment. However, the public expenditures expected to accommodate future public demands for expanded public services, utility systems, and recreational facilities may surpass added revenue benefits to Hawaii County and the State of Hawaii.

Four potential commercial complexes in the South Kohala area are presently in the development planning stage (Table 2-3). These projects include the expansion of the present Parker Ranch Center in Waimea, two unnamed neighborhood shopping projects in Waimea, and a proposed Kawaihae Shopping Center (Belt Collins & Associates, 1988).

2.7.2.2 Planned Community at Kealakehe

Development of apartment complexes in the planned Kealakehe community (Alternative B) will also generate increased demands for public services, utility systems, and recreational

TABLE 2-3

PLANNED COMMERCIAL SHOPPING CENTERS IN SOUTH KOHALA

	Kawaihae Shopping Center (Kawaihae)	Parker Ranch Center Expansion (Waimea)	Unnamed (Waimea)	Unnamed (Waimea)
Land area (acres)	N/A	N/A	N/A	N/A
Gross Leasable square feet	15,000	25-40	5.5	4.9
Status	Planning	Planning	Planning	Planning
Projected Opening	Indefinite	Indefinite	Indefinite	Indefinite
Developer	N/A	Parker Ranch	Kurisu & Fergus/ Cannon	Charles River Hawaii Ltd.

Source: Belt Collins & Associates, 1988.

facilities. However, the presence of nearby commercial shopping areas and community services would eliminate a need for the development of these facilities and services within the proposed Kealakehe community.

Despite the lack of "need" to support apartment complexes within the proposed Kealakehe community, recent planning studies by Belt Collins and Associates indicate that the entire Kealakehe community (combined "low", "moderate", "gap" and "market" income groups) could economically support 39,000 to 52,000 square feet of commercial retail space by the year 2000 and between 66,000 to 89,000 square feet by the year 2010 (Belt Collins & Associates, 1988). Consequently, a marketable demand and related commercial development opportunity will exist as this community is developed.

2.7.2.3 Kailua-Keauhou Area

The Kailua-Keauhou area, makai (seaward) of Kuakini Highway, is already urbanized and contains the public utility systems, public services, schools, and commercial shopping centers which are needed to support an increased residential population in West Hawaii. The capacity of existing facilities and services in this area continues to be influenced by recent visitor industry growth and related increases in local employment.

In the absence of any detailed evaluation of public systems in the Kailua-Keauhou area, it is believed that system capacities will not be significantly affected by the "infilling" of smaller undeveloped areas (Alternative D), i.e. ten acres or less, for single family or multifamily residential purposes. In contrast, larger residential projects such as the proposed Kealakehe planned community (Alternative B) will require new water supply development, expansions to the existing wastewater treatment plant, and other utility extensions to accommodate an increased residential population.

The "no project alternative" (Alternative C) will not, in itself, create a need to expand community infrastructure. However, the capacity of public utility systems, schools, community services, and roads will continue to be decreased as the North Kona district continues to grow.

2.7.3 Statistical Comparison Results

The statistical comparison of project alternatives (Tables 2-4 and 2-5) indicates the following preference in order of desirability:

Alternative D - Development of Apartment Units in Kahaluu
Alternative C - No Project Alternative
Alternative B - Apartment Development Within the Kealakehe Planned Community
Alternative A - Apartment Development in the South Kohala Area

TABLE 2-4

COMPARATIVE SCORING OF PROJECT ALTERNATIVES
KAMAAINA APARTMENTS PROJECT

	Evaluation Criteria	Weighted Value	Raw Score Comparison (Scoring Range 0-10) A	B	C	D
1.	Expansion of public utility systems, facilities and services in West Hawaii	1.00	2	3	5	5
2.	Development of additional community and neighborhood shopping centers in West Hawaii	0.75	2	4	5	5
3.	Rental apartment demand in West Hawaii	1.00	10	10	5	10
4.	Retail and service employment in West Hawaii	0.50	8	8	5	6
5.	Vehicular traffic in the No. Kona and South Kohala districts;	0.90	3	3	5	4
6.	Recreational parks in the No. Kona and So. Kohala districts	0.90	2	3	5	4
7.	Resources of the Kahaluu Historic district	1.00	5	5	5	5
8.	Visual resource quality of West Hawaii	0.75	3	3	5	4
9.	Noise levels in the No. Kona and So. Kohala districts	0.75	3	3	5	4

Notes: Section 2.2 of the report summarizes the significance of weighted values and scoring range used in this matrix evaluation technique.

Source: James Pedersen, Planning Consultant, 1988.

TABLE 2-5

COMPARISON OF FOUR PROJECT ALTERNATIVES
KAMAAINA APARTMENTS PROJECT
TOTAL WEIGHTED ALTERNATIVE SCORES

	Evaluation Criteria	Weighted Value	A	B	C	D
1.	Expansion of public utility systems, facilities and services in West Hawaii	1.00	2	3	5	5
2.	Development of additional community and neighborhood shopping centers in West Hawaii	0.75	2	3	4	4
3.	Rental apartment demand in West Hawaii	1.00	10	10	5	10
4.	Retail and service employment in West Hawaii	0.50	4	4	3	3
5.	Vehicular traffic in the No. Kona and South Kohala districts;	0.90	3	3	5	4
6.	Recreational parks in the No. Kona and So. Kohala districts	0.90	2	3	5	4
7.	Resources of the Kahaluu Historic district	1.00	5	5	5	5
8.	Visual resource quality of West Hawaii	0.75	2	2	4	3
9.	Noise levels in the No. Kona and So. Kohala districts	0.75	2	2	4	3
	TOTAL SCORE		32	35	40	41

Notes: Total weighted score for each criteria was calculated by multiplying the comparative raw scores summarized in Table 2-4 by the weighted value for each criteria.

Source: James Pedersen, Planning Consultant, 1988

The weighted total scores for Alternatives D and C were almost equal because of their lack of impact upon the resources and infrastructure of the North Kona, South Kohala and West Hawaii. Alternative D was scored slightly higher because this project option will positively address local apartment rental demands in West Hawaii without creating significant impacts upon local infrastructure.

Alternatives A and B would also ease rental demands in West Hawaii. However, multifamily development in these areas will contribute and promote the development of additional commercial shopping complexes which would generate increased retail and service employment in South Kohala and North Kona. However, these project "benefits" would also generate requirements for the development of increased public infrastructure, public services, and community facilities, especially in South Kohala (Alternative A).

Reduced visual quality, increased noise, and greater vehicular traffic would be more adverse via alternatives A and B because the development of new multifamily and commercial facilities would primarily occur in more quiet, less-developed areas of West Hawaii.

Alternative D would create additional traffic generation along Alii Drive and, possibly, influence the "level of service" along this corridor. This impact would be nominal in comparison to the potential traffic impacts caused by multifamily apartment development in Kealakehe, Waimea, or Kawaihae which could generate increased traffic within these communities, as well as Queen Kaahamanu Highway.

Increased urbanization in South Kohala and Kealakehe are also expected to create greater visual resource and noise impacts upon local communities which are presently very rural in nature. The steeper slopes of the Kahaluu area provides development opportunities for building terraces which help decrease potential impacts upon local residential views, and conserve public viewplanes from mauka areas along Kuakini Highway and the old Mamalahoa Highway.

A more detailed description of the selected development option (Alternative D) is presented in Section 2.8.

2.8 PROJECT DESCRIPTION OF SELECTED PROJECT ALTERNATIVE D

2.8.1 Project Objectives

The objective of Kamaaina Corporation is to develop and market a small multifamily apartment complex in North Kona's Kahaluu area and to rent 32 apartments on an profitable economic basis. A related objective is to provide reasonable, affordable multifamily units to West Hawaii residents who are in the "low-moderate", "moderate" and "gap" income groups.

2.8.2. General Scope and Location

Kamaaina Corporation proposes to develop a 32-unit apartment complex (Figure 2-3) on a undeveloped project site in Kahaluu, North Kona (TMK: 7-8-14:90, 91, and 92). The project site, which contains 32,205 square feet of land, is located approximately 500 to 750 feet mauka of Kahaluu Beach Park and Alii Drive (Figure 2-2).

2.8.3 Site Development

2.8.3.1 Site Preparation and Development

Site preparation and development of the project site will require initial clearing and grubbing of the site which contains considerable exotic vegetation. Total clearing of the site will be necessary to expose existing land contours and facilitate the eventual landscaping of new understory and overstory shrubs and trees.

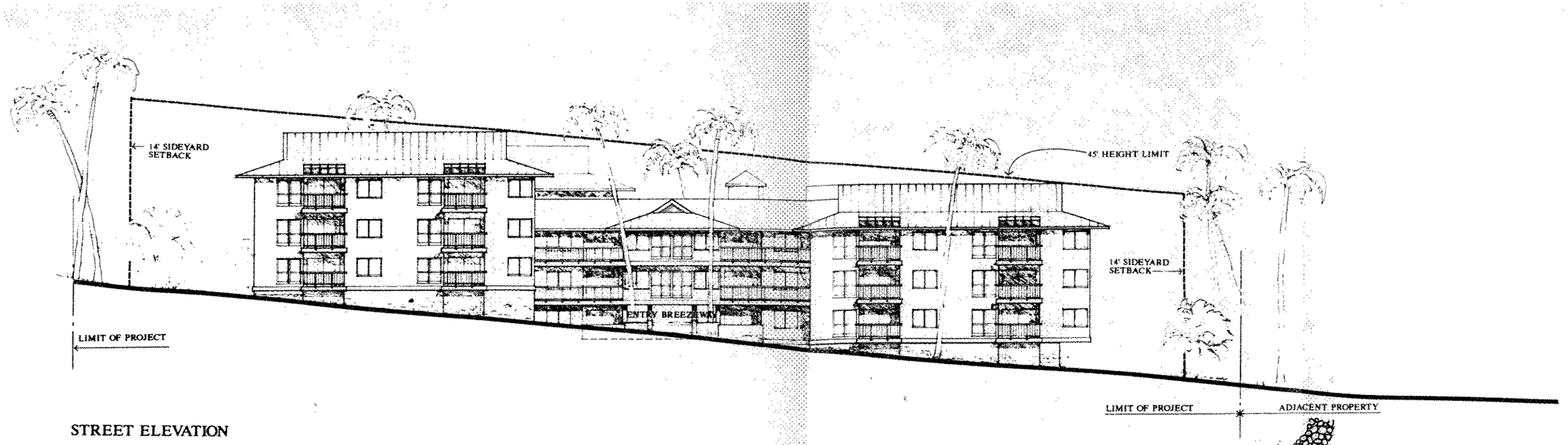
The building contractor will take advantage of the existing contours of the site during site preparation. The existing downward ground slope from the mauka to the makai ends of the property will be generally maintained as three terraced foundation areas will be established via site grading and excavation. During construction, temporary dikes will be constructed along the perimeter of each terrace to contain any potential erosion which might result from a sudden, intense rainfall. Each terraced area will contain a nine-foot difference in elevation between each terrace. Site preparation work will require 500 to 1,000 cubic yards of imported fill material.

Upon completion the building foundation and framing work, overstory and understory landscaping will be planted around the building perimeter, and adjacent to project site boundaries. Special treatment will be given along the project site's western boundary where a portion of the historic Kuakini Wall is present.

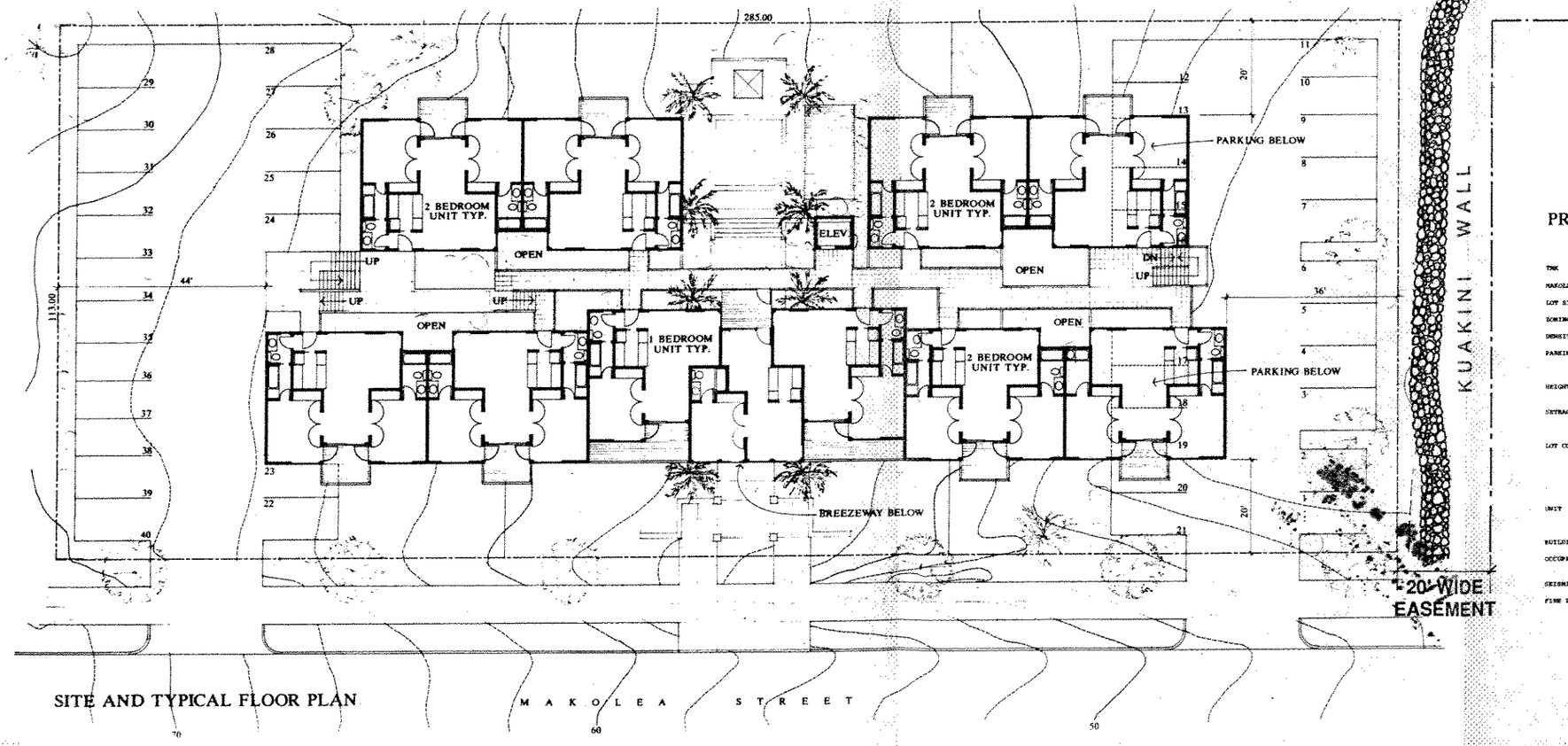
Pedestrian access to the Kuakini Wall will be encouraged through the presence of an 8-foot wide walkway and grassed area between the western parking area and makai project site boundary. Interpretative signage explaining the historic significance of the wall and related wall building techniques will be installed near the intersection of Makolea Street and the makai boundary. Landscaping adjacent to the wall will fully expose the rock wall formation to encourage appreciation of this historic feature by residents of the complex and other visitors.

2.8.3.2 Supporting Onsite and Offsite Facilities

Onsite and offsite facilities supporting the apartment complex will include vehicular parking and access; road curbs, gutters, and sidewalk; and utility service connections.



STREET ELEVATION



SITE AND TYPICAL FLOOR PLAN

PROJECT DATA

TMK	:	(3) 7/8/14/90, 91, 92
MAKOLEA SUBDIVISION	:	LOTS 4, 5, 6
LOT SIZE	:	32,205 SQ. FT.
ZONING--PROPOSED	:	RM-1
DENSITY	:	32 UNIT
PARKING	:	28 CARS @ 9'-0" x 18'-0" 12 CARS @ 8'-0" x 16'-0" 1.25 CARS PER UNIT
HEIGHT	:	3 STORY 45' MAXIMUM
SETBACK	:	20 FEET FRONT & BACK YARD 14 FEET SIDE YARD REQUIRED 36 & 44 FEET ACTUAL SIDE YARDS
LOT COVERAGE	:	UNIT 9,096 SQ. FT. 28% CORRIDOR, ELEVATOR & STAIRS 1,636 SQ. FT. 5% BALCONY 844 SQ. FT. 3% PARKING 9,920 SQ. FT. 31% TOTAL: 21,496 SQ. FT. 67%
UNIT	:	24 TWO BEDROOM UNITS @ 900 SQ. FT. 6 ONE BEDROOM UNITS @ 660 SQ. FT. 2 ONE BEDROOM UNITS @ 570 SQ. FT.
BUILDING TYPE	:	3-STORY TYPE V-1 NR.
OCCUPANCY GROUP	:	R-1 APARTMENT R-1 GARAGE
SEISMIC ZONE	:	1
FIRE ZONE	:	1

0 5 10 20 40

FIGURE 2-3
PROPOSED KAMA'AINA APARTMENTS PROJECT
KAMA'AINA CORPORATION
KAHALU'U, KONA, HAWAII
Source: Richard Hannum Associates

Two ground-level parking areas will be developed on the east and west sides of the complex (Figure 2-3). Both parking areas will provide a total of 40 vehicular parking stalls for residents of the complex. Two vehicular access points to the apartment complex will be available from Makolea Street via two-way entries into each parking area.

Kamaaina Corporation will construct road curbs, gutters, and a sidewalk within the Makolea Street right-of-way to accommodate increased road drainage flows and to provide safer pedestrian access to the Kuakini Wall, Alii Drive, and the nearby shoreline.

Water laterals will be installed onsite, and be connected to an 8-inch water distribution line along Makolea Street. This system is owned by the County of Hawaii, and maintained by the Department of Public Works.

Two options exist for sewage collection and disposal. The first potential option will be to install an onsite sewer lateral that would be connected to an existing 8-inch sewer collector along Makolea Street. If sewer rights cannot be obtained from the owner of this system, Kamehameha Development Corporation, an onsite wastewater treatment and disposal system will be installed.

A pad-mounted transformer will be installed onsite to convert available electrical distribution to the designated operating voltage for the apartment complex. Hawaii Electric Light Company distribution along the south side of Makolea Street consists of 12.47-kilovolt overhead lines.

Telephone service to the project site will also be provided to the apartment complex through appropriate service connections to Hawaiian Telephone Company distribution lines and transformers along Makolea Street. All service connections within the project site will be installed inside underground conduit.

Surface drainage from roofed areas of the complex and paved vehicular parking areas will ultimately be directed to two onsite drywells which will be constructed in the ground-level parking areas.

2.8.4 Apartment Complex Development

The 32-unit apartment complex will consist of three apartment buildings which are connected by common space walkways, stairs, and elevator (Figure 2-3). The complex will include approximately 27,500 square of living area which will be partitioned to provide:

24 two-bedroom units containing 900 square feet of floor area;

6 one-bedroom units containing 660 square feet of floor area; and

Lanais, stairs and walkways will comprise approximately 6,400 square feet of floor space within the complex.

Each of three buildings within the complex will be wood-framed structures which will be built via "stick-built" construction by one of Kamaaina Corporation's principals, Mr. Joe Marcelin. Mr. Marcelin is a licensed general building contractor in the State of Hawaii. The three-story structures will be less than 45-feet in height.

The front building (Figure 2-3) will be setback 20 feet from the project site's front property line along Makolea Street. The two rear buildings will be setback 20 feet from the back property line that adjoins the Kona Gardens property. Sideyards will range from 36 to 44 feet on the east and west sides of the complex to allow greater separation from adjoining residential property. One single family residence is situated east of the project site and a proposed multifamily complex will be located immediately west of the project site.

2.8.5 Use of Public Funds

Public funds from the County of Hawaii or the State of Hawaii will not be used to support the development of the proposed Kamaaina Apartments project.

CHAPTER 3.0

ENVIRONMENTAL SETTING

SECTION 3.0

ENVIRONMENTAL SETTING

3.1 PHYSICAL ENVIRONMENT

3.1.1 Geology, Soils and Drainage

Soils in the vicinity of the project site have been generally classified as Punalu'u Series by the U.S. Soil Conservation Service. This general soil classification is typically characterized by a thin organic layer of well-drained soils which is overlain by a thicker layer(s) of pahoehoe lava bedrock.

The thin surface soils are considered to be rapidly permeable. In contrast, the underlying pahoehoe is considerably less permeable. However, surface waters may percolate rapidly through fractured lava areas (U.S. Department of Agriculture, Soil Conservation Service, 1972; Kiiru, 1987).

These general soil and geologic characteristics suggest that the natural drainage of the site is generally capable of percolating through existing soils and bedrock. Site topography, however, suggests that more intense rainfall may create a small volume of surface runoff downslope of the project site. This conclusion is confirmed by the existing Flood Insurance Rate Map for this area which was prepared by the Federal Emergency Management Agency (FEMA). The project site is in an area designated Zone D; this designation represents an unstudied area with potential flood hazards.

3.1.2 Site Topography

Elevations within the project site range from 42 to 72 feet above sea level. The natural contours of the site generally slope from east to west. Ground slopes range from 8 to 10 percent in the upper third of the site. In the middle portion of the site, land contours are relatively flat (0 to 6 percent). The lower third of the site varies significantly. Ground slopes in this area generally range from 20 to 100 percent except near the western boundary where elevations are again almost flat (Kona Surveyors, 1987).

3.1.3 Climate

Similar to much of the North Kona district shoreline, the project site annually receives approximately 20 to 30 inches of rainfall. Ambient temperatures average in the mid-70 degree Fahrenheit range. Since the project site is situated on the leeward side of Hualalai, surface winds are typically light throughout the year. Surface winds generally blow out to sea (easterly) during the early morning hours (midnight until sunrise). As the morning progresses, winds gradually shift to southeasterly, southerly, and southwesterly by early afternoon. Late afternoon and early

evening periods are characterized predominantly by onshore westerly breezes.

3.1.4 Visual Quality

The topography and general low-rise (three stories or less) development pattern along the Kona coast continues to maintain unique coastal and ocean views from the old Mamalahoa Highway and Kuakini Highway. Shoreline views from Alii Drive have been reduced significantly during the past 20 years because of continued residential development makai of Alii Drive. Should the proposed Alii Drive realignment (Figure 3-1) be eventually developed, shoreline views in this area will improve despite the presence of low-rise buildings.

The downsloping natural topography of the Kona coastline also has, for the most part, maintained northerly and southerly views. Steeper slopes along the coast have "dictated" the construction of terraced residential and resort development sites in order to reduce site preparation costs. This economic reality, combined with County restrictions upon allowable building heights, have conserved these viewplanes despite increased land development and the density of urbanization in Kona.

3.2 BIOLOGICAL RESOURCES

Vegetation within the project site consists primarily of koa-haole and kiawe trees and one larger monkey pod tree near the middle of the 32,205 square-foot site (Paul Rosendahl, Inc., 1987). Various grasses and weeds are also present.

Although no terrestrial ecology studies were made of the flora and fauna of the project site, general onsite observations indicate the use of the project site by mongoose and various exotic species of birds, e.g. mynah.

3.3 CULTURAL RESOURCES

3.3.1 Archaeological and Historical Resources

3.3.1.1 Significance of the Kahaluu Historical District

The project site is situated inside the Kahaluu Historical District which encompasses the makai half of the Kahaluu ahupua'a (an ancient Hawaiian land division) and a portion of the neighboring Keauhou ahupua'a. Archaeologists in Hawaii recognize the significance of this district because of the concentration of some ten heiau (stone religious structures built by the ancient Hawaiians) and other important historic places and remains.

"... A number of heiaus within a relatively small geographical area ... indicates that the Kahaluu ahupua'a was one of major importance in Hawaiian culture and history during the times before European contact. .... heiaus are built only after careful consideration of all geographical, social, political, and

HOLUALOA

KUAKINI HIGHWAY

KAMEHAMEHA III ROAD

PROPOSED ALII DRIVE REALIGNMENT

KAILUA-KONA

WHITE SANDS BEACH PARK

PROJECT SITE

KUAKINI WALL

ALII DRIVE

KAHALU'U BEACH PARK

KEAUHOU BEACH HOTEL

KONA LAGOON HOTEL

KEAUHOU BAY SHOPPING CENTER

KEAUHOU RESORTS COMPLEX

KEAUHOU BAY

0 500 1000 2000

SCALE IN FEET

FIGURE 3-1
KAHALU'U-KEAUHOU AREA

supernatural factors" (Newman, 1974). Further, Kahaluu appears to have been a major seat of political power in ancient Hawaii since various important historical events are connected to the construction, dedication and use of these heiau (Newman, 1974).

3.3.1.2 Recent Reconnaissance of the Project Site

An archaeological reconnaissance survey was made of the project site on August 6, 1986 by Paul Rosendahl, Ph.D., Inc., Consulting Archaeologists. Following the survey, two separate survey reports were prepared for Kamaaina Corporation by Paul Rosendahl, Ph.D., Inc. (Appendix C).

The reconnaissance survey and related report identified the previously known Kuakini Wall and Makolea Trail, and four new undocumented archaeological features. These features included a terrace, a boulder alignment, a surface boulder concentration, a modified outcrop, and a collapsed wall. Based on this survey, the consulting archaeologist concluded the following:

> "In our opinion, the archaeological remains identified within the ....project area....are, for the most part, of limited to moderate significance in terms of potential scientific research, interpretative, and/or cultural values. With the exception of the Great Wall of Kuakini, the identified archaeological sites appear significant solely for their informational content, and are not deserving of preservation of their physical remains."

The archaeologist also recommended that a more intensive archaeological survey be made of the project site to carry out detailed mapping and recording of the already-identified features, controlled test excavations, and historical documentary research. The intent of this work would be to...."accomplish an appropriate and adequate recovery of the archaeological data present...." prior to construction.

Following circulation of the draft EIS, representatives of the State Historic Sites Office, the Hawaii County Planning Department, and Kamaaina Corporation met to discuss the scope of appropriate mitigation for this project. On the basis of agreements reached during a meeting on October 12, 1988, Kamaaina Corporation will perform an intensive level field survey of the project site. This requirement will be a condition of Kamaaina Corporation's present rezoning request before Hawaii County.

An intensive level field survey report will be prepared by the Corporation's archaeologist. Copies will be distributed to the Hawaii County Planning Department and State Historic Sites Section Office in Honolulu where the report will be available for public review. However, the final EIS will not include the intensive level field survey report since the field survey will not be completed until late 1988.

3.3.2 Socio-Economic Environment

Expansion of the West Hawaii economy (North Kona, South Kohala, and North Kohala districts) is presently being driven by increased resort hotel, resort condominium, and residential construction in North Kona and South Kohala, as well as supporting retail and commercial services which create both direct and induced employment. As stated in Chapter 2.0, these trends are expected to continue for, at least, the next 17 years given the proposed investment plans of various resort development organizations (Table 3-1).

During its recent General Plan Revision program, the Hawaii County Planning Department estimated that the West Hawaii population is expected to grow to an estimated 98,700 residents by the year 2005. This estimate is derived from the County's Series B projections which are based upon potential employment growth rates, historical district growth trends, and related population distribution trends in Hawaii County.

3.4 BUILT ENVIRONMENT

3.4.1 Multifamily Housing Demands in West Hawaii

Recent forecasts of future West Hawaii housing demands were developed by Belt Collines & Associates in conjunction with a conceptual master plan for a planned community at Kealakehe, Kona (Table 2-1). These forecasts present anticipated demands for the 1988-2005 period. The moderate income group, targeted by the Kamaaina Corporation, is expected to require approximately 5,450 housing units (Table 2-1).

Resident housing preferences were evaluated by Hawaii Opinion, Inc. in 1983 via a survey of local residents. Relevant survey results, in part, indicate a preference by 15 percent of Hawaii County residents to live in a multi-family unit. Most residents also expressed a preference for owning their own homes.

A recent survey of employees at Mauna Kea Beach Hotel and Mauna Lani Resort was completed in 1987 by Community Resources, Inc. and Datametric Research. Survey results indicated, in part, that employees, who are "newcomers" to the island, represent a significant component of the existing and future multifamily housing rental market. Employees designated as "newcomers" represent employees holding nonmanagement positions which have lived on the Island of Hawaii less than five years. Further, these employees comprise approximately 10 percent of the combined labor force of Mauna Kea Beach and Mauna Lani Bay hotels. More significantly, survey results indicate that "newcomers" are considerably dependent on the supply of multifamily housing. Thirty-three percent of the "newcomers" working at these two hotels live in multifamily housing; 55 percent of these employees rent their multifamily housing unit (Belt Collins and Associates, 1988).

TABLE 3-1

PROJECTED EMPLOYMENT GROWTH BY INDUSTRY IN WEST HAWAII 1988 TO 2005

	1988-1990	1990-1995	1995-2000	2000-2005	Total
Visitor Industry:					
Direct (1)	1,700	2,800	2,400	2,300	9,200
Indirect (2)	400	700	600	600	2,300
Diversified farming (3)	100	300	1,200	(700)	900
New industries (4)	200	100	-	-	300
Nonvisitor secondary (5)	1,800	3,200	3,300	4,700	13,000
Total	**4,200**	**7,100**	**7,500**	**6,900**	**25,700**

Notes:
(1) Region assumed to account for 100% of island total.
(2) Region assumed to account for 70% of island total.
(3) Region assumed to account for 50% of island total.
(4) Region assumed to account for 75% of island total.
(5) Region assumed to account for 40% of island total.

Source: Belt Collins & Associates, 1988

Available housing data and forecasts suggest that future multifamily housing will be most marketable to non-management hotel and other visitor industry service employees, experienced construction trades personnel, and their dependents. In an attempt to quantify the potential multi-family rental market, it was assumed that:

1. Fifteen percent of the market will be "newcomers" in the "moderate" and "gap" income groups who will have lived on the island for less than five years. Fifty-five percent of the these "newcomers" will choose, or be forced to rent multi-family units in view of unaffordable single-family housing (James Pedersen, Planning Consultant, 1988).

2. The majority of the "moderate" and "gap" income groups will be residents of Kona and other areas of the Big Island who will comprise 85 percent of the multifamily housing market. Twenty-five percent of these residents will choose, or be forced, to rent multi-family units because single family units will be generally unaffordable in the West Hawaii area (James Pedersen, Planning Consultant, 1988).

A statistical application of these general assumptions to anticipated housing demands for the "moderate" and "gap" income groups (Table 2-1) indicates that the annual demand for multi-family rental housing in West Hawaii will be approximately 90 units per year (James Pedersen, Planning Consultant, 1988).

3.4.2. Commercial Areas in West Hawaii

West Hawaii is presently served by 13 commercial shopping centers containing approximately 548,500 square feet of leasable floor space (Belt Collins & Associates, 1988). Parker Ranch Center and Parker Square are the only two shopping centers located outside of the North Kona district.

The project site is situated within one mile of the Keauhou Shopping Village in Keauhou which currently provides over 64,000 square feet of leasable floor area to a variety of retail shops and stores. Kamehameha Investment is developing a second phase expansion of this commercial area, containing 72,000 square feet of commercial floor space, that will be available for occupancy by 1990.

3.4.3 Recreational Areas in the Vicinity of the Project Site

Recreational opportunities in the vicinity of the project site are Kahaluu Beach Park, White ("Magic") Sands Beach Park, and Keauhou Park. Each of these parks are operated and maintained by the Hawaii County Department of Parks and Recreation.

Kahaluu Beach Park is closest to the project site as it is located makai of the Makolea Street-Alii Drive intersection. This park contains a popular inshore snorkeling and swimming area, two pavilions, outdoor showers, and vehicular parking for

roughly 70 vehicles. A full-time lifeguard monitors all inshore recreational activities. In FY 1988, the Hawaii County Department of Parks and Recreation records indicate that over 28,000 persons used the two pavilions while approximately 475,500 residents and visitors participated in snorkeling, swimming and other inshore water activities.

White Sands Beach Park is located approximately one mile from the project site between Alii Drive and the Holualoa Bay shoreline. The primary recreational opportunity at the beach park include bodysurfing and swimming. Facilities include a limited vehicular access and parking, restrooms and outdoor showers. In FY 1988, approximately 117,250 residents and visitors participated in beach and inshore water activities.

Keauhou Park is situated mauka of the project site in Honalo. The 5.3-acre park is accessible via Kuakini Highway. This neighborhood park provides opportunities for softball and court games such as basketball, volleyball and tennis. Other facilities consist of a "tot lot" area, pavilion, and vehicular parking.

3.4.4. Land Uses and Designations in the Project Site Vicinity

3.4.4.1 State and County Land Use Designations

The project site is situated within a growing multifamily residential community on the Kailua side of Kona Gardens Botanical and Cultural Park (Figure 2-2) which formerly was the site of the Kona Flea Market. State land use designations for this area are urban; Hawaii County zoning predominantly designates the surrounding neighborhood for resort uses (Figure 3-2). The exception are four small parcels of land. Three of these parcels comprise the project site; a fourth parcel, east of the project site, is a 15,230 square-foot lot with containing a one-story residence.

3.4.4.2 North of the Project Site

On the north side of Makolea Street and the project site is the Kahale Kahaluu Project. This project is a 50-unit apartment complex that was built in 1981 by the West Hawaii Housing Foundation. The complex provides rental housing units to lower income residents.

Makai of the Kahale Kahaluu Project is Kahaluu Bay Villas. This three-story condominium building includes 15 condominium units which have been purchased by higher "market" income buyers. Most of these owners live in the building intermittently throughout the year, e.g. two to three months per year.

Between Alii Drive and Kahaluu Bay Villas is the Heilani Church property which contains a small cemetery.

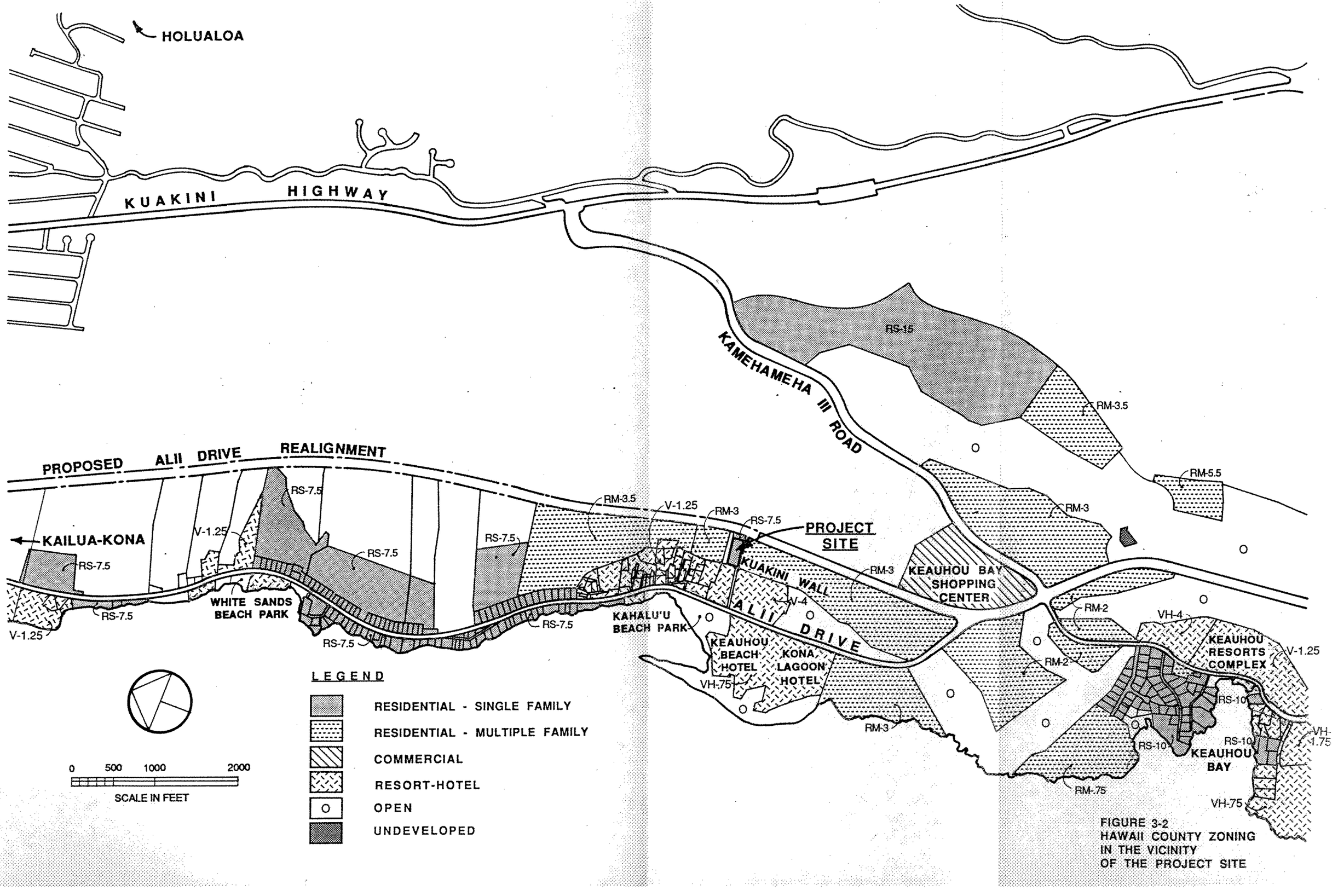


FIGURE 3-2
HAWAII COUNTY ZONING
IN THE VICINITY
OF THE PROJECT SITE

3.4.4.3 East of the Project Site

The 15,230 square-foot parcel, which adjoins the east side of the project site, is owned by Mr. August Klaus, Mr. Arlan Looney, and Mr. Lee Hall. No development plans for this parcel of land are known to be in progress by the present landowners.

Mauka of this property is a field office and nursery of Kamehameha Investment Corporation, a subsidiary of the Bishop Estate.

3.4.4.4 South of the Project Site

South of the project site is, as stated earlier, the Kona Gardens Botanical and Cultural Park which is presently owned by the Azabu USA (Kona) Company, Ltd. Kamaaina Corporation has attempted to contact the landowner to inquire of its future plans for the Kona Gardens property. However, no response has been obtained from Azabu USA (Kona) Company, Ltd.

More recently, Hawaii County Planning Department representatives indicate the Azabu USA has submitted conceptual plans for the development of a resort complex. The complex will include use of the relatively undeveloped Kona Gardens area and the adjacent Kona Lagoon and Keauhou Beach Hotels (Figure 2-2).

Further south of the Kona Gardens property is the beginning of the Keauhou-Kona resort complex (Figure 3-2).

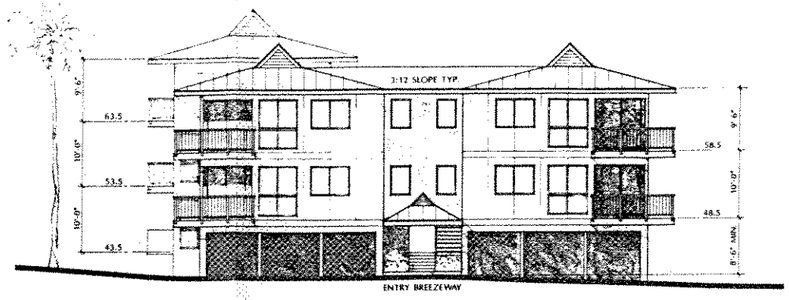
3.4.4.5 West of the Project Site

Immediately west of the project site is the Keauhou Residential Properties Project which has been recently approved for the development of a three-story apartment building. The building will contain 5 two-bedroom units and 8 one-bedroom units (Figure 3-3)(Clark, 1988). The developer is in the process of submitting detailed design plans to the Hawaii County Building Division in order to secure a Hawaii County Building Permit.

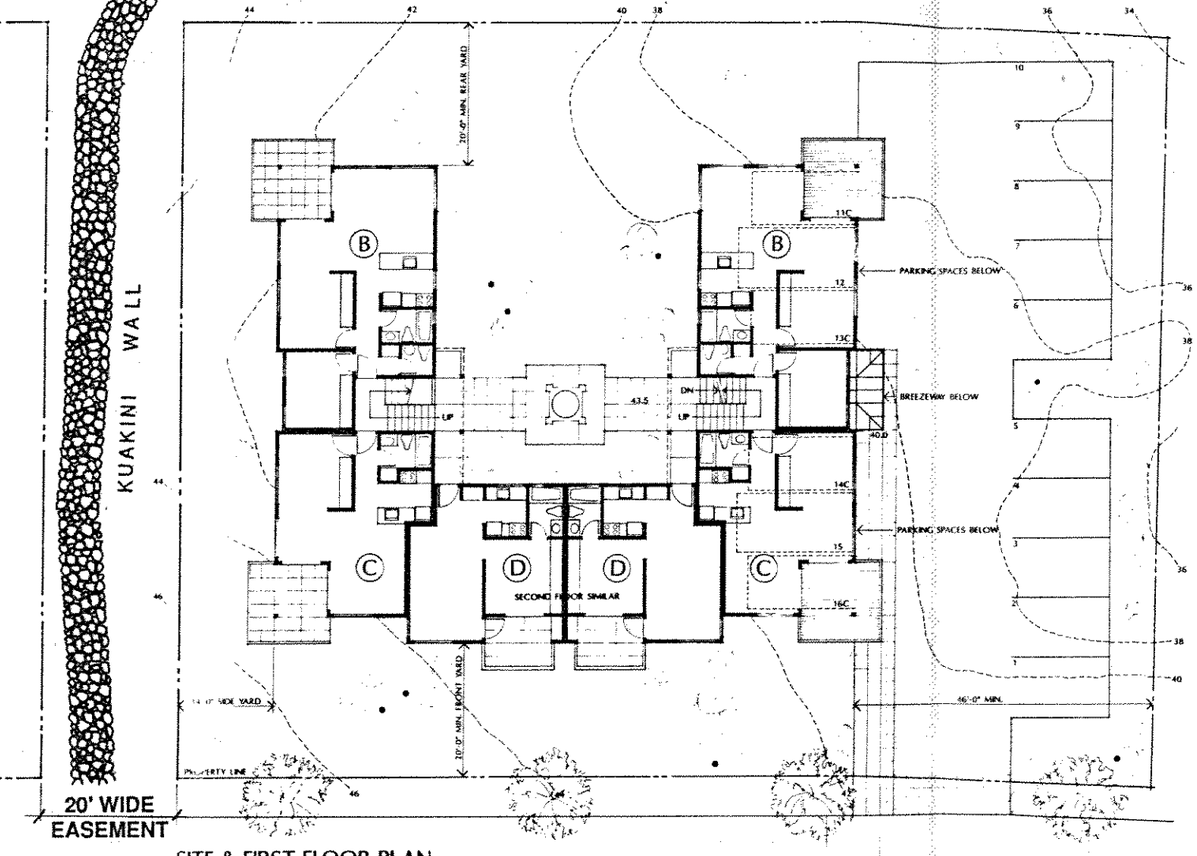
Adjoining and makai of the Keauhou Residential Properties Project is an 11,000 square-foot lot owned by Mr. and Mrs. John Ling. No development plans are known to exist for this property at the time of this report.

At the Alii Drive-Makolea Street intersection, a pending rezoning application to the Hawaii County Planning Department has been made for the establishment of a "Circle K" franchise operation. As proposed, this commercial operation would include a gas/service station and small retail convenience store. The potential lessee of the property and representative for the Circle K operation, Mr. David Trask, is seeking a rezoning of this 17,000 square-foot parcel since retail commercial services are not generally permitted on lands zoned by Hawaii County for resort use.

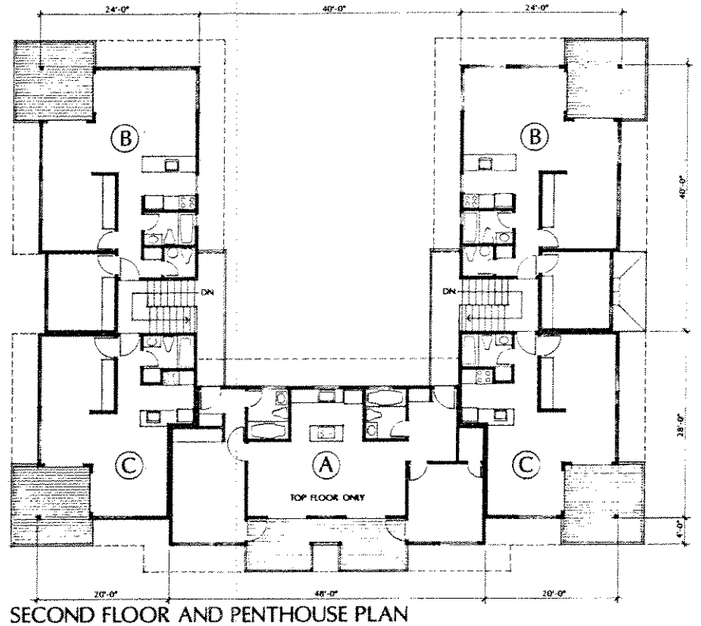
STREET ELEVATION



WEST ELEVATION



SITE & FIRST FLOOR PLAN



SECOND FLOOR AND PENTHOUSE PLAN

STATISTICS

BUILDING CODE:

Uniform Building Code:	1982 Edition as Amended
Seismic Zone:	3
Fire Zone:	3
Occupancy:	R3 Apartment
Building Type:	Two and Three Story; Type V, 1-Hour

ZONING CODE:

TMK:	7.8.14:89
Makolea Subdivision:	Lot 3
Lot Size:	16,984 sf
Zoning:	V-125 Resort
ALLOWABLE DENSITY:	16,984/1250 sf = 13 Units
PROPOSED DENSITY:	5 Two Bedroom Units 8 One Bedroom Units TOTAL = 13 Units

SITE COVERAGE:

Ground Cover:	4232/16,984 = 24.9%
Parking:	3942/16,984 = 23.2%
Open:	8810/16,984 = 51.9%

UNIT AREA DATA:

		INTERIOR:	DECK/PATIO:
Type A:	Two Bedroom	1024 sf	176 sf
Type B:	Two Bedroom	788 sf	144 sf
Type C:	One Bedroom	552 sf	168 sf
Type D:	One Bedroom	504 sf	98 sf

PARKING:

Parking Required:	1.25 Spaces/Unit x 13 = 16.25
Parking Provided:	12 Spaces 9 x 18 4 Spaces 8 x 16 (Compact)

HANNUM
RICHARD HANNUM ASSOCIATES
ARCHITECTURE . INTERIOR DESIGN . SPACE PLANNING
144 SECOND STREET SAN FRANCISCO CA 94105
TEL 415.543.8333 FAX 415.543.8451

0 5 10 20 40

FIGURE 3-3
KEAUHOU RESIDENTIAL PROPERTIES
MAKOLE'A STREET, LOT 3
KAHALU'U, KONA, HAWAII

The shoreline area along nearby Alii Drive (makai of the project site) is characterized by two hotels (Kona Lagoon and Keauhou Beach) and the Kahaluu Beach Park (see Section 3.3.5).

3.4.5 Public Facilities and Services in the Project Site Vicinity

3.4.5.1 Schools

The project site is served by three public schools: Kahakai Elementary, Kealakehe Intermediate, and Konawaena High.

Increased resident population in the North Kona district has clearly impacted these schools in recent years. The State Department of Education's six-year forecasts for these schools suggests continued student population growth (Table 3-2). Despite anticipated growth, the State Department of Education (D.O.E.) reports that anticipated student enrollments can be absorbed at each of three schools (Matsushige, 1988).

The only signficant facility plans are long-range in nature. Another high school in Kealakehe is being considered by the Department of Education. However, this development may depend on whether or not the planned community at Kealakehe is developed. A second potential development by DOE may be eventual relocation of Konawaena Elementary School. However, no firm plans or schedule has been set for this relocation (Matsushige, 1988).

3.4.5.2 Roads

Alii Drive is the primary two-lane roadway which provides vehicular access to Makolea Street and the project site. Random vehicular traffic counts along Alii Drive provide inconclusive information concerning the volume of traffic presently using Alii Drive.

In January, 1986, the County of Hawaii took a one-day count of vehicles approaching Kamehameha III Road from Alii Drive. The southbound count along Alii Drive was 2,917 vehicles for one 24-hour period. The previous traffic count on Alii Drive before January, 1986 was July, 1984 at Waiaha Bridge (approximately one mile south of Hualalai Road). Northbound counts from this location indicated traffic volumes along Alii Drive of 4,889 vehicles southbound and 4,884 northbound.

Given the lack of substantive vehicular traffic information, it can only be grossly estimated that the total average daily traffic along Alii Drive, near the Makolea Street intersection, may range from 5,000 to 7,000 vehicles per day.

TABLE 3-2

STUDENT ENROLLMENT PROJECTIONS
KAHAKAI ELEMENTARY, KEALAKEHE INTERMEDIATE AND KONAWAENA HIGH SCHOOLS
1988-1994

School Year	Kahakai Elem. (K-5)	Kealakehe Inter. (6-8)	Konawaena High (9-12)
1988-89	560	693	1,580
1989-90	599	733	1,588
1990-91	621	766	1,634
1991-92	643	804	1,728
1992-93	664	876	1,766
1993-94	660	927	1,851

Source: Ed Matsushige, Information Systems, State of Hawaii Department of Education, 1988.

A proposed Alii Drive realignment has been proposed which basically parallels Kuakini highway and provides a more efficient and safer roadway corridor mauka of the existing Alii Drive. Conceptual development plans for the project indicate a Makolea Street intersection with the proposed Alii Drive realignment. A schedule for development of this roadway has not yet been established by the County of Hawaii.

3.4.5.3 Water, Wastewater, Power and Solid Waste Systems

The project site is already served by these systems via the presence of an 8-inch water transmission line, an 8-inch sewage collection line, and a 12.5-kilovolt electrical power distribution line along Makolea Street.

Connection to the existing County water and private wastewater systems will require the construction of separate water and sewer laterals from the apartment complex to Makolea Street. The electrical power connection would require the installation of an onsite pad transformer to convert direct line voltage to the desired operating voltage of the complex.

The County of Hawaii does not provide solid waste collection service in the vicinity of the project site. However, such services can be obtained from a number of private refuse haulers serving the West Hawaii area.

CHAPTER 4.0

ANTICIPATED ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATIVE MEASURES

CHAPTER 4.0

ANTICIPATED ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATIVE MEASURES

4.1 PHYSICAL IMPACTS

4.1.1 Alteration of Topography and Drainage

Existing land contours of the project site will be significantly changed through the excavation, grading and fill of lands within the 32,205 square foot site. Kamaaina Corporation intends to clear and grub the entire site and subsequently develop the site into three terraced areas which will follow the general downward slope (from east to west) of the project site (Figure 2-3). The foundations of each successive terrace will drop approximately 10 feet in elevation. The amount of imported fill material is expected to range between 500 to 1,000 cubic yards (Marcelin, 1988).

Drainage flows will also be altered through the development of new impermeable surfaces, e.g. building roofs, vehicular parking areas, which will reduce the former natural percolation of rainfall into the substratum. Consequently, new impermeable surfaces will increase the volume of drainage flows.

Drainage flows from the developed project site and the roofs of the apartment complex will be redirected to two onsite drywells. The drywells will be located within each of the two vehicular parking areas and will be designed to accommodate a 10-year storm design flow. The drywells will permit the recharge of normal drainage and storm flows into the local substratum and, possibly the fringe of the Big Island's basal lens.

4.1.2 Increased Residential Noise Levels

No baseline background noise levels were sampled for the purposes of this environmental impact statement. However, general environmental observations made by James Pedersen, Planning Consultant, during a field trip to the site in June, 1988 suggest that the project site is presently subjected to a "minimal exposure" to noise. Federal noise guidelines and standards define "minimal exposure" as an average day-night sound level of 55 Ldn or less (Table 4-1).

During construction, the average day-night sound level may temporarily increase to 60 Ldn during an anticipated four-month construction period. Such an increase would be the result of a greater presence of heavy equipment, e.g. concrete trucks, building framing activities, and other construction-related operations. Following the construction period, it is expected that typical day-night sound levels will return to 55 Ldn or less.

Table 4-1

SUMMARY OF FEDERAL NOISE GUIDELINES AND STANDARDS

NOISE ZONE CLASSIFICATION

Noise Exposure Class	Noise Descriptor			HUD Noise Standards For New Residential Development
	DNL[1] Day-Night Average Sound Level	L_{eq}(hour)[3] Equivalent Sound Level	NEF[4] Noise exposure Forecast	
Minimal Exposure	Not Exceeding 55	Not Exceeding 55	Not Exceeding 20	"Acceptable"
Moderate Exposure	Above 55[2] But Not Exceeding 65	Above 55 But Not Exceeding 65	Above 25 But Not Exceeding 30	
Significant Exposure	Above 65 Not Exceeding 70	Above 65 Not Exceeding 70	Above 30 Not Exceeding 35	"Normally Unacceptable"
	Above 70 But Not Exceeding 75	Above 70 But Not Exceeding 75	Above 35 But Not Exceeding 40	
Severe Exposure	Above 75 But Not Exceeding 80	Above 75 But Not Exceeding 80	Not Exceeding 45	"Unacceptable"
	Above 80 But Not Exceeding 85	Above 80 But Not Exceeding 85	Above 45 But Not Exceeding 50	
	Above 85	Above 85	Above 50	

[1] CNEL - Community Noise Equivalent Level (California only) uses the same values.

[2] HUD, DOT, and EPA recognize L_{eq} = 55 dB as a goal for outdoors in residential areas in protecting the public health and welfare with an adequate margin of safety (Reference: EPA "Levels" Document.) However, it is not a regulatory goal. It is a level defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

[3] The Federal Highway Administration (FHWA) noise policy uses this decriptor as an alternative to L_{10} (noise level exceeded ten percent of the time) in connection with its policy for highway noise mitigation. The L_{eq}(design hour) is equivalent to DNL hours; 2) traffic between 10 p.m. and 7 a.m. does not exceed fifteen percent of the average daily traffic flow in vehicles per 24 hours. Under these conditions DNL equals L_{10} - 3 decibels.

[4] For use in airport environs only; is now being superceded by DNL.

Source: Federal Interagency Committee on Urban Noise - "Guidelines for Considering Noise in Land Use Planning and Control" - NTIS PB81-214124, June 1981.

If other project development projects along Makolea Street are constructed, i.e. Keauhou Residential Properties and Circle K, average day-night sound levels may increase and range between 55 and 65 Ldn. This range is considered to be "moderate exposure" to noise by the Federal Interagency Committee on Urban Noise and is defined as an "acceptable" noise range under the U.S. Department of Housing and Urban Development standards for new residential development (Table 4-1).

4.2 BIOLOGICAL IMPACTS

4.2.1 Flora

The clearing and grubbing of the 32,000 square-foot project site will result in a total loss of all vegetation on the project site. Since much, if not all, of the project site is characterized by exotic overstory vegetation, it is doubtful that the proposed project will result in the loss of any endangered plant communities or species. However, this has not been confirmed by any vegetative survey of the project site.

4.2.2 Fauna

The loss of all site vegetation will force the relocation of mongoose and birds presently frequenting the site. The proportion of site vegetation which represents significant habitat for the mongoose and the local bird population is not known since no survey of the faunal resources on the project site was made.

4.3 CULTURAL RESOURCES

4.3.1 Loss of Archaeological Resources

Four existing archaeological features on the project site will be eliminated through site clearing, grubbing, excavation, and grading operations required for site development (Section 3.3.1). Data recovery from these features will be accomplished through the performance of an intensive arhaeological survey and the related preparation of a survey report. The scope of this survey and any additional mitigation measures will be consistent with the requirements of the State Historic Sites Section and the Hawaii County Planning Department.

Precautions will be taken, however, for the preservation of the Kuakini Wall which is situated on the land parcel immediately west of the project site. Prior to and during construction, Kamaaina Corporation will place barriers and/or flagging near the western boundary of the project site in order that the nearby wall will not be damaged or desecrated by heavy equipment operations, or the disposal of discarded construction materials. The Corporation will also advise building subcontractors of the significance of the Kuakini Wall, appropriate site access points, and designated material disposal areas.

Following construction of the proposed project, Kamaaina Corporation will establish an 8-foot wide walkway and grassed area along the project site's makai boundary. This area will be developed to encourage public viewing of the Kuakini Wall. The Corporation will also install an attractive eye-level sign near the intersection of Makolea Street and the project site's makai boundary that will direct the general public to the designated walkway and explain the historical significance of the Wall.

4.3.2 Increase in Neighborhood Resident Population

Eventual 100 percent of the occupancy of the 32-unit Kamaaina Apartments complex will create a long-term increase in the local neighborhood population along Makolea Street. Assuming that each of the 24 two-bedroom units is occupied by a family of four and each of the 8 one-bedroom units contains two persons, the anticipated population of the complex will be 112 residents.

4.3.3 Potential Employment and Income Generation

4.3.3.1 Construction-Related Income

The Kamaaina Apartments project will be constructed over a one-year period and will involve the part-time direct labor of approximately 52 construction tradesman and laborers in the West Hawaii area.

In order to derive estimates of potential construction-related income and its impact upon the State economy, use was made of the Type II input-output multipliers which were developed by the State Department of Business and Economic Development in 1977. The application of the Type II output multipliers to estimated total construction costs provides a convenient statistical method for estimating the amount of direct, indirect and induced sales (or income) which will be derived via construction activities required to develop the Kamaaina Apartments project (Mapes, 1988).

Based on estimated 1988 construction costs, the total construction value of the project is estimated to be $1.3 million (Marcelin, 1988). Application of the appropriate multiplier to this value indicates that the Kamaaina Apartments project can be expected to generate potential direct, indirect, and induced sales (or income) of approximately $2,662,400 in Hawaii. This estimated income represents a modest contribution of potential income within the local and State economy.

4.3.3.2 Retail Trade and Commercial Services Income

Following occupancy of the 32 units within the Kamaaina Apartments complex, a new anticipated residential population of approximately 112 persons will be purchasing a variety of household and convenience items from a diverse range of retail stores and commercial services in West Hawaii. In order to calculate the potential employment and income generation for

retail and commercial services in West Hawaii, three statistical assumptions were made:

1. Each new resident creates a retail or services demand for 100 square feet of commercial space;

2. One new job is created or supported for every 1,000 square feet of commercial space; and

3. The average wage for every new employee ranged from $6 to 8$ per hour (gross wage of $12,480 to $16,640 per year).

Using these assumptions, it is estimated that the Kamaaina Apartments project will create or support approximately 12 new jobs in retail commercial stores and services. These jobs will most likely be located in the North Kona district. This employment will annually generate approximately $175,000 in total direct household income.

4.4 BUILT ENVIRONMENT

4.4.1 Increased Demand for Commercial Retail Facilities

Earlier assumptions used to calculate potential direct employment in retail trade and commercial services (Section 4.3.3.2) indicate that the new resident population in the apartment complex will create or support a demand for 11,200 square feet of commercial floor space. Given the proximity of the Keauhou Bay Shopping Center (Figure 3-2), it is reasonable to assume that the project may represent a significant consumer market for this expanding commercial retail center.

4.4.2 Viewplanes

Despite the addition to Kahaluu's built environment, public viewplanes of the Kahuluu Bay shoreline, from Kuakini Highway and the old Mamalahoa Highway, will not be significantly altered. The steeper downsloping topography of the North Kona coastline will continue to maintain a clear visual view of the scenic Kahaluu shoreline. Similar to other development projects in this area, Kamaaina Corporation is proposing to terrace the three buildings in its apartment complex. While economizing its site development costs, this construction technique will also help conserve public views of the shoreline.

In the vicinity of the project site, some loss in shoreline views will occur from the three units on the southern side of the Kahuluu Bay Villas. Three condominiums (one unit on the first, second, and third floors) have windows on the south and west sides of the building. Southerly shoreline views from these units will be eliminated or significantly reduced by the presence of the new building. Westerly makai views from these units will be unaffected by the proposed project.

summary of these issues are presented in the following paragraphs.

The submittal of this EIS represents a portion of Kamaaina Corporation's application for a change of zone and a Special Management Area Use Permit. The applications are under the present view of the Hawaii County Planning Department and, ultimately, will be approved, or disapproved by the Hawaii County Planning Commission and Hawaii County Council.

Kamaaina Corporation needs to submit a water commitment deposit of $4,350 to Hawaii County's Department of Water Supply before the Department will determine the availability of public potable water for this project. As of December 16, 1987, water could be made available from the existing 8-inch waterline along Makolea Street.

A similar request for the availability of electrical power will need to be made to Hawaii Electric Light Company. The request will need to be accompanied with a full set of electrical engineering drawings that will depict and describe desired operating voltage, circuit diagrams, the siting and type of desired service connection, and other related information.

CHAPTER 5.0

REFERENCES

CHAPTER 5.0

REFERENCES

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Fujii, Takeo, Former Chief Design and Construction Engineer, Hawaii State Division of Water and Land Development. July 1, 1971. "Estimating Water Consumption". State of Hawaii, Division of Water and Land Development. Honolulu, Hawaii.

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Neighbor Island Consultants. 1975. **Environmental Assessment of an Agency Action for a Proposed Comfort Station, White Sands Beach, Holualoa, Kona, Hawaii.** County of Hawaii Department of Parks and Recreation. Hilo, Hawaii.

Neighbor Island Consultants. 1975. **Final Environmental Assessment of an Agency Action for a Proposed Keauhou Park, Honalo, Kona, Hawaii.** County of Hawaii Department of Parks and Recreation. Hilo, Hawaii

Personal Communication. July,1988. Mr. Quirino Antonio Jr., P.E., Department of Water Supply, County of Hawaii. Hilo, Hawaii.

Personal Communication. 1988. Mr. Kim Clark, Attorney-at-Law. San Rafael, California.

Personal Communication. June-August, 1988. Mr. Joseph Marcelin, principal of Kamaaina Corporation and licensed general contractor in the State of Hawaii. Kailua-Kona, Hawaii.

Personal Communication. 1988. Mr. Ed Matsushige, Information Systems Office, State of Hawaii, Department of Education. Honolulu, Hawaii.

Personal Communication. 1988. Mr. Ron Riggs, Realtor, RSM Realty. Volcano, Hawaii.

REFERENCES, CONTINUED

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APPENDIX A

ENVIRONMENTAL ASSESSMENT
AND
PREPARATION NOTICE

Prepared by: Hawaii County Planning Department

COPY

PLANNING DEPARTMENT
25 AUPUNI STREET
COUNTY OF HAWAII
HILO, HAWAII 96720

January 5, 1988

Office of Environmental Quality Commission
Office of the Governor
465 South King Street, Room 104
Kekuanaoa Building
Honolulu, HI 96813-2910

Gentlemen:

Environmental Assessment and Preparation Notice
Applicant: Kamaaina Corporation
Tax Map Key 7-8-14:30-92

Enclosed please find 5 copies of an environmental assessment and preparation notice for the construction of an apartment building and related improvements within the Kahalu'u Historic District, which is on the National Register of Historic Places.

Comments on the EIS Preparation Notice should be sent to the consultant:

Kamaaina Corporation
c/o Joseph Marcelin
76-952 F Hualalai Road
Kailua-Kona, HI 96740

Should you have any questions, please contact this office.

Sincerely,

ALBERT LONO LYMAN
Planning Director

CRK:lv
Enclosures

cc: Joseph Marcelin w/encs.

ENVIRONMENTAL ASSESSMENT AND PREPARATION NOTICE

APPLICANT:	Kamaaina Corporation c/o Joseph Marcelin 76-952 F Hualalai Road Kailua-Kona, HI 96740
APPROVING AGENCY:	County of Hawaii Planning Commission through the Planning Department 25 Aupuni Street Hilo, HI 96720
PROPOSED PROJECT:	Construction of a 32-unit apartment building and related improvements at Kahalu'u, North Kona, Hawaii, Tax Map Key Nos. 7-8-14:90, 91, & 92
CLASS OF ACTION:	Development within the Kahalu'u Historic District, which is listed on the National Register of Historic Places.

CONSULTING AGENCIES:

County -	Department of Water Supply Real Property Tax Division Police Department Fire Department Department of Parks and Recreation
State -	Department of Health Department of Land and Natural Resources Department of Education

PROPOSAL

The applicant proposes to construct a 32-unit apartment building and related improvements on a total of 32,205 square feet of land situated on the Keauhou side (south) of Makolea Street approximately 460 feet mauka of the Ali'i Drive-Makole'a Street intersection within the ahupua'a of Kahalu'u, North Kona, Hawaii Tax Map Key Nos. 7-8-14:90, 91 & 92.

CLASS OF ACTION

The proposed development is located within the Kahalu'u Historic District (Site No. 10-37-4150), which is on the National Register of Historic Places.

PROJECT DESCRIPTION

The three-story apartment building with a basement will consist of approximately 27,500 square feet of living area as follows:

24 two-bedroom units @ 900 square feet
6 one-bedroom units @ 660 square feet
2 one-bedroom units @ 570 square feet
32 total units

The applicant proposes to provide a total of 40 parking stalls--28 regular and 12 compact. Some of the parking stalls will be undercover in the basement. Since the Zoning Code requires 1.25 stalls per apartment unit, a total of 40 parking stalls would be required. The structure will be built to the maximum 45-foot height limit. Landscaping is proposed along all property boundaries and would cover approximately 30 percent of the lots. The building exterior will be constructed of wood or masonite.

According to the site plan submittal, the building would be setback 20'-0" from Makole'a Street; 20'-0" from the rear yard (south); 44'-0" from the east side yard; and 36'-0" from the west side yard.

Two vehicular accesses are proposed to the site from Makole'a Street. In addition, the applicant intends to construct curbs, gutters and a sidewalk within the Makolea Street right-of-way.

The project will hook-up to the existing sewage treatment plant at Keauhou. Water will be provided through the county waterline fronting the parcels.

The total cost of the improvements is estimated to be $1,200,000. Construction is expected to begin approximately six months after securing all necessary governmental approvals.

ENVIRONMENTAL SETTING

The project area has a gradual slope towards the west and ranges in elevation from 45 to 78 feet above sea level.

The parcels lie within an area which receives approximately twenty to thirty inches of rainfall annually. Like much of North Kona lying on the leeward side of Hualalai, the area is shielded from the prevailing tradewinds. Air movement is usually limited to diurnal shifts of seaward/landward breezes generated by surface temperature differentials.

The parcels are currently vacant but contains various species of vegetation such as koa-haole (Leucaena leucocephala), kiawe (Prosopis pallida), monkey pod (Samanea Saman) and a variety of grasses and weeds. None of these are listed on the rare or endangered plant species list.

Similarly, the area is not known to be a habitat for any endangered fauna.

The U.S. Department of Agriculture, Soil Conservation Service, Soil Survey Report classifies the soil of the area as Punalu'u Series. This series is typified by well drained, thin organic soils over pahoehoe bedrock. The peat layer is rapidly permeable. The pahoehoe is very slowly permeable, although water moves rapidly through the cracks.

The Flood Insurance Rate Map (FIRM) prepared by the U.S. Army Corps of Engineers, depicts the properties to be in a zone of minimal flooding (Zone C).

Two 100% archaeological field surveys of the parcels were conducted by Dr. Paul Rosendahl. In letter reports (attached) dated August 7 and 8, 1987, three structural features were identified:

Site Number	Feature
T-2	Alignment
T-3	Modified outcrop and L-shaped wall
T-4	Modified outcrop and terrace

In addition, two sites (T-1 and 6302) were located in the vicinity of the project area. Site 6302, the Great Wall of Kuakini, is situated on or near the boundary of Parcel 90. Site T-1, a large terrace, is situated in the northeast corner of Parcel 93. The letter reports recommend further archaeological work in the form of intensive survey including historical documentary research, vegetation clearing, detailed mapping and recording, and controlled test excavations. It was anticipated that this work would accomplish an appropriate and adequate recovery of the archaeological data

present, and that no further work of any kind nor the continued preservation of the sites would be required. Furthermore, due to its location on the west boundary of Parcel 90, the Great Wall of Kuakini was recommended for preservation in its present form.

It should be noted that the State has confirmed the ownership of Makole'a Trail as belonging to Bishop Estate, its successors or assigns (the applicant in this case).

SOCIAL AND INSTITUTIONAL SETTING

The subject properties are classified Urban by the State Land Use Commission.

The County General Plan designates the area for Medium Density Urban Development. Additionally, the General Plan document describes the Keauhou area as a tourist destination point for major resort development.

The Hawaii County Code zones the parcel as Single-Family Residential-7,500 square feet (RS-7.5). The applicant has submitted a change of zone request from RS-7.5 to Multiple-Family Residential-1,000 square feet per unit (RM-1). It should be mentioned that subject parcels were three of seven created in August 26, 1968, known as Makolea Subdivision. The Great Wall of Kuakini was set aside as a separate 10-foot wide lot.

Three parcels fronting Makole'a Street and to the west of the project site are vacant and zoned Resort (V-1.25). One remaining parcel fronting Makole'a Street to the east is also vacant and zoned RS-7.5. The Kahalu'u Bay Villas across Makole'a Street to the northwest carries a resort zoned designation. The Kahale Kahalu'u

Project, which was constructed in 1981 by the West Hawaii Housing Foundation, is directly across Makole'a Street to the north. The unimproved portion of Kona Gardens is situated to the south.

The Helani Church Lot and ruins are situated less than 400 feet to the north of the subject parcels. The County's Kahalu'u Beach Park is located 600 feet to the west of the project site and makai of Ali'i Drive.

The property is situated within the Special Management Area (SMA), but over 900 feet from the shoreline. As such, the applicant has submitted a Special Management Area Use Permit Petition to the Planning Commission to allow for the proposed improvements.

The parcel is bounded on the north by Makole'a Street, which has a road right-of-way of sixty feet and a pavement width of approximately twenty feet.

Ali'i Drive has been proposed to be realigned. The final alignment would be located at the end of Makole'a Street approximately 150 feet to the east of the project site.

The Police Department commented:

> "The proposed use will result in additional traffic on roadways to and from this site. It is recommended that the condition and capacity of these roadways be considered in approving this application."

An eight-inch water line services the lot. The Department of Water Supply comments are as follows:

> "Pursuant to the Department's Water Commitment Guidelines Policy," a copy of which is attached, a water commitment deposit must be remitted so that a formal water commitment may be

issued. Based on the 29 additional units requested in the proposed 32-unit apartment development, the required water commitment deposit is $4,350.

"Your remittance of $4,350 is requested as soon as possible so that a water commitment may be formally issued. The commitment will be in writing with specific conditions and effective dates stated. Please keep in mind that this letter shall not be construed as a water commitment. In other words, unless a water commitment is officially effected, water availability is subject to change depending on the water situation.

"Upon the issuance of a formal water commitment, we shall inform the Planning Department of our comments and requirements."

There is a ten-inch sewer main along Ali'i Drive which feeds into the sewage treatment plant at Keauhou.

Telephone and electric service are available to the project site.

In the past and through the 1960's, Kona's economic base has been primarily supported by agriculture as a coffee producing and ranching area. Although resort related developments occurred in Kona as early as the 1930's, the expansion of the tourism industry as a secondary economic base for the area did not begin until the 1960's. Shifts in the population have been related to these economic factors.

The County General Plan, in noting an increase in population from 4,451 in 1960 to 4,832 in 1970 states that:

"Spurred primarily by the employment opportunities created by the expanding visitor industry, population has increased in North Kona in the last ten years."

"Since 1970, increases in tourism and tourism-related facilities and services have grown dramatically. Reflective of this increase and increases in agricultural activities, the 1980 census estimates indicate a 171% increase in population for the North Kona area from 4,832 in 1970 to 13,096 in 1980."

ENVIRONMENTAL IMPACTS

The proposed construction of an apartment building and related improvements is individually limited to three parcels containing a total area of 32,205 square feet, but cumulatively may have considerable effect upon the environment.

The subject properties are located over 500 feet from the County's Kahalu'u Beach Park. The construction of additional dwelling units will generate secondary impacts to this recreational facility. These would include, but not be limited to, increased pedestrian and vehicular traffic between the two sites.

The project will impact Makole'a Street and Ali'i Drive by the intensity of the multi-family residential use. The Police Department commented that the proposed use would result in additional traffic on roadways. The condition and capacity of these roadways should be a consideration. In addition, the Ali'i Highway realignment could generate an increase in traffic at the Makole'a Street-Ali'i Drive intersection. Thus, a traffic study should include the impacts of the project on traffic volumes and circulation patterns to existing roadways and the future Ali'i Highway.

Since reconnaissance surveys revealed archaeological sites present on the parcels, the project must be assessed in the context of its total impact to the Kahalu'u Historic District. According to the Nomination Form submitted to the National Register of Historic Places Inventory:

"[T]he Kahalu'u Historical District draws much of its significance from the rare occurrence of a number of major heiau within a relatively small geographical area. This indicates that the Kahalu'u ahupua'a was one of major importance in Hawaiian culture and history during the times before European contact, for heiau are built only after careful consideration of all geographical, social, political, and supernatural factors. Important historical events in ancient Hawaii are closely associated with the construction, dedication, or use of these heiau, for Kahalu'u appears to have been a major seat of political power; perhaps a place where ruling chiefs held their courts. Many of the heiau are hundreds of years old, to judge from traditional history and legends, yet stand grandly above the now desolate terrain in fine condition. The mere fact that so many heiau exist in this district shows the complexity of Hawaiian society, for it must have taken literally thousands and thousands of man days to build them, since all are massive engineering feats of mortarless stonework.

"It is especially significant that associated with the many heiau are the other types of ancient Hawaiian sites, such as petroglyphs, walls, enclosures, habitation areas, caves, and so forth.

"The high density of culturally interrelated ancient Hawaiian remains and the concentration of major religious structures combine to make the Kahalu'u Historical District an area of great historical significance . . . "

The significance of this District is evidenced by the numerous archaeological sites identified on the adjacent property to the south known as the Kona Botanical/Cultural Gardens. In a 1980 survey conducted by Hallett Hammatt and William Folk, an historic preservation area in the Kona Gardens parcel was recommended to be set aside immediately to the south of the project site. One of the features within the preservation area may extend into Parcel 92. The possible disparity between the archaeologists' (Rosendahl and Hammatt) recommendations should be researched and its findings justified. Additionally, the Helani Church ruins are visible from Ali'i Drive and Makole'a Street. Cognizant of these factors, the proposed project should be examined within the functional, cultural, and visual framework of the Kahalu'u Historic District.

DETERMINATION

Based upon the above considerations, the proposed construction of a 32-unit apartment building within the Kahalu'u Historic District may have a substantial impact upon the environment. Therefore, it is determined that the preparation of an Environmental Impact Statement is warranted. The following significance criteria set forth in Section 11:200:12 of the Environmental Quality Commission EIS Regulations was used in making the determination:

"Is individually limited but cumulatively has considerable effect upon the environment . . . "

APPENDIX B

RESPONSES TO THE DRAFT EIS

rec'd 8/16/88

DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

IN REPLY REFER TO
5090 (67B)
Ser 032/2107

12 AUG 1988

Planning Department
County of Hawaii
First Federal Business Plaza Bldg.
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, Hawaii 96740

Gentlemen:

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
KAMAAINA APARTMENTS PROJEC

The Draft Environmental Impact Statement for Kamaaina Apartments Project has been reviewed and we have no comments to offer. Since we have no further use for the DEIS, it is being returned to the Office of Environmental Quality Control.

Thank you for the opportunity to review the Draft EIS.

Sincerely,

W. K. Liu

W K LIU
Assistant Base Civil Engineer
By direction of
the Commander

Enclosure

Copy to:
Mr. James H. Pedersen
Planning Consultant
P.O. Box 22
Volcano, Hawaii 96785

Office of Environmental Quality Control

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

W. K. Liu
Assistant Base Civil Engineer
for the Commander
Naval Base Pearl Harbor
Department of the Navy
Box 110
Pearl Harbor, Hawaii 96860-5020

Dear Sir:

SUBJECT: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

We have received your letter of August 12 which provided a response to your review of the Kamaaina Apartments Project DEIS. We appreciate your taking the time to review and provide a response on the subject project.

Sincerely,

James H. Pedersen
Planning Consultant

DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

JOHN WAIHEE
GOVERNOR
ROGER A. ULVELING
DIRECTOR
BARBARA KIM STANTON
DEPUTY DIRECTOR
LESLIE S. MATSUBARA
DEPUTY DIRECTOR

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813

0312k

August 12, 1988

Planning Department
County of Hawaii
First Federal Business Plaza Building
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, Hawaii 96740

Gentlemen:

Subject: Draft Environmental Impact Statement for the Kamaaina Apartments Project

Thank you for the opportunity to review the Draft EIS. We have no comments to offer at this time.

Sincerely,

Tom O'Brien

for MAURICE H. KAYA
Energy Program Administrator

MHK/hk

cc: Mr. James H. Pedersen

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Maurice H. Kaya
Energy Program Administrator
State of Hawaii
Dept. of Business and Economic Development
Energy Division
335 Merchant Street, Rm. 110
Honolulu, Hawaii 96813

Dear Sir:

SUBJECT: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

We have received your letter of August 12 which provided a response to your review of the Kamaaina Apartments Project DEIS. Although you had no comments to offer at this time, we appreciate your taking the time to review the subject project and to inform us of your findings.

Sincerely,

James H. Pedersen

James H. Pedersen
Planning Consultant

rec'd 8/16/88

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD, HONOLULU, HAWAII 96816-4495

August 15, 1988

Engineering Office

Planning Department
County of Hawaii
First Federal Business Plaza Bldg.
75-5737 Kuakini Hwy, Suite 105
Kailua-Kona, HI 96740

Gentlemen:

Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii

Thank you for providing us the opportunity to review the subject project.

We have no comments to offer at this time regarding this project.

Sincerely,

Jerry M. Matsuda
Major, Hawaii Air
National Guard
Contr & Engr Officer

cc: James H Pedersen,
Planning Consultant

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Major Jerry M. Matsuda
Contr. & Engr. Officer
Hawaii Air National Guard
State of Hawaii Dept. of Defense
Office of the Adjutant General
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Dear Sir:

SUBJECT: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

We have received your letter of August 15 which provided a response to your review of the Kamaaina Apartments Project DEIS. Although you had no comments to offer at this time, we appreciate your taking the time to review the subject project and to inform us of your findings.

Sincerely,

James H. Pedersen
Planning Consultant

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

August 19, 1988

Planning Branch

Director, Planning Department
County of Hawaii
First Federal Business Plaza Building
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, Hawaii 96740

Dear Sir:

We have reviewed the draft Environmental Impact Statement for the Kamaaina Apartments Project, Kahaluu, North Kona, Hawaii, and have the following comments.

A Department of the Army permit is not required for this project.

Recommend paragraph 3.1.1, page 3-1 be changed as follows: "This conslusion is confirmed by the existing Flood Insurance Rate Map for this area prepared by the Federal Emergency Management Agency (FEMA). The project is in an area designated Zone D; an unstudied area with possible flood hazards."

We appreciate the opportunity to comment on this document.

Sincerely,

Kisuk Cheung
Chief, Engineering Division

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Mr. Kisuk Cheung
Chief, Engineering Division
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Mr. Cheung:

Subject: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

Thank you for taking the time to review the draft EIS for this project. We are in receipt of your comments that were provided in your letter of August 19, 1988.

Your letter recommends a revision to paragraph 3.1.1 (page 3-1) of the draft EIS which refers to the existing Flood Insurance Rate Map for the area encompassing the project site.

Your recommended wording will replace the last two sentences in paragraph 3.1.1 of the final EIS.

Our thanks for your constructive comments.

Sincerely,

James H. Pedersen
Planning Consultant

UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

P. O. BOX 50004
HONOLULU, HAWAII
96850

rec'd 8/25/88

August 22, 1988

Planning Department
County of Hawaii
First Federal Business Plaza Bldg.
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, HI 96740

Gentlemen:

Subject: Draft Environmental Impact Statement (DEIS) -
Kamaaina Apartments Project, Kahaluu, North Kona, HI

We have no comments to offer at this time; however, we would appreciate the opportunity to review the final EIS.

Sincerely,

RICHARD N. DUNCAN
State Conservationist

cc:
Mr. James H. Pedersen, Planning Consultant, P.O. Box 22, Volcano HI 96785

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Richard N. Duncan
State Conservationist
USDA Soil Conservation Service
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Sir:

SUBJECT: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

We have received your letter of August 22 which provided a response to your review of the Kamaaina Apartments Project DEIS. Although you had no comments to offer at this time, we appreciate your taking the time to review the subject project and to inform us of your findings.

Upon completion, a copy of the final Environmental Impact Statement for the Kamaaina Apartments Project will be made available to you for your review.

Sincerely,

James H. Pedersen
Planning Consultant

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS OFFICE
P.O. BOX 50167
HONOLULU, HAWAII 96850

ES
Room 6307

SEP 14 1988

County of Hawaii
Planning Department
First Federal Business Plaza Bldg.
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, HI 96740

Re: Draft Environmental Impact Statement, Kamaaina Apartments Project, Kona, Hawaii

Dear Sir:

We have reviewed the referenced document and have no comments to offer at this time.

We appreciate the opportunity to comment.

Sincerely,

for Ernest Kosaka
Field Supervisor
Environmental Services

cc: ✓James Pedersen

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Ernest Kosaka, Field Supervisor
Environmental Services
Fish & Wildlife Service
Pacific Islands Office
United States Dept. of the Interior
P. O. Box 50167
Honolulu, Hawaii 96850

Dear Sir:

SUBJECT: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

We have received your letter of August 29 which provided a response to your review of the Kamaaina Apartments Project DEIS. Although you had no comments to offer at this time, we appreciate your taking the time to review the subject project and to inform us of your findings.

Upon completion, a copy of the final Environmental Impact Statement for the Kamaaina Apartments Project will be made available to you for your review.

Sincerely,

James H. Pedersen
Planning Consultant

University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

September 21, 1988
RE:0507

Planning Department
County of Hawaii
First Federal Business Plaza Building
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, Hawaii 96740

Dear Sir:

Draft Environmental Impact Statement
Kamaaina Apartments
Kahaluu, North Kona, Hawaii

The proposed Kamaaina Apartments Project consists of a 32-unit apartment complex to be constructed in Kahaluu, North Kona, Hawaii. Because the project lies within the Kahaluu Historic District, and will require a Special Management Area Permit an evaluation of the potential environmental impacts through the preparation of an Environmental Impact Statement (EIS) was required.

The Environmental Center has conducted a brief review of the above referenced Draft EIS, noted in the OEQC Bulletin (8/8/88), with the assistance of Yu-Si Fok, Civil Engineering; Michael Graves, Anthropology; and Randall Rush, Environmental Center.

Two areas of concern have been identified by our reviews as needing additional attention. The Draft EIS notes that considerable excavation and grading will be required and drainage flows will be altered. While the Draft EIS states that drainage flows from the developed site (emphasis added) will be directed to dry wells, measures that will be taken to control drainage, and soil loss during construction should also be included in the Final EIS.

Archaeological Resources

The recommendations of the Archaeologist (Paul Rosendahl, Appendix A), for an intensive survey prior to construction are strongly supported by the information provided from the reconnaissance survey. However, as presently proposed (p. 4-3) no further archaeological studies are planned. We strongly urge that the intensive survey recommended by the

consultant, including sub-surface excavations, be required and that the results of this additional work be made a part of the Final EIS. Without such additional study, the Final EIS would not adequately address the potential impacts to archaeological resources.

We appreciate the opportunity to comment on this Draft EIS.

Yours truly,

Jacquelin N. Miller
Associate Environmental Coordinator

cc: OEQC
James Pedersen, Planning Consultant
L. Stephen Lau
Yu-Si Fok
Michael Graves
Randall Rush

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Ms. Jacquelin N. Miller
Associate Environmental Coordinator
University of Hawaii at Manoa
2550 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Dear Ms. Miller:

Subject: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

Thank you for taking the time to review the draft EIS for this project. We are in receipt of your comments that were provided in your letter of September 21, 1988.

Your letter identifies two project concerns: potential drainage flows during construction and potential impacts upon archaeological resources.

Potential Drainage Flows During Construction

The project site is roughly 600 feet from the Kahaluu Bay shoreline. The project site contains limited surface soil material and normally receives little rainfall. Potential surface runoff and erosion would most likely occur during construction as a result of a sudden, intense rainfall and its interaction with imported soil material.

Kamaaina Corporation plans to construct three terraced foundation areas which, in essence, reduces the requirements for imported fill. Normal rainfall in the vicinity of the project site is not expected to generate erosion outside the boundaries of the project site. During construction, temporary dikes will be constructed along the perimeter of each terrace to contain the potential erosion which may result from a sudden intense rainfall. A second natural barrier, situated near the makai boundary of the project site, is the Kuakini Wall that will also inhibit potential erosion downslope of the project site.

Silty runoff water will either evaporate or percolate directly into the substrate and flow toward the shoreline. However, the distance to the shoreline will permit considerable "filtering" of runoff in the substrate; consequently, potential stormwater runoff is not expected to affect the inshore water quality of Kahaluu Bay.

Archaeological Resources

Representatives of the State Historic Sites Office, the Hawaii County Planning Department, and Kamaaina Corporation met on October 12, 1988, to discuss the scope of appropriate mitigation for this project. On the basis of agreements reached during this meeting, Kamaaina Corporation will perform an intensive level field survey of the project site. This requirement will be a condition of Kamaaina Corporation's present rezoning request before Hawaii County.

An intensive level field survey report will be published by the Corporation's archaeologist. Copies will be distributed to the Hawaii County Planning Department and State Historic Sites Section Office in Honolulu where the report will be available for your review. However, the final EIS will not include the intensive level field survey report.

We appreciate your informing us of your concerns and believe that our project approach addresses these issues. Should you have further questions, please contact me at your convenience at 967-7619.

Sincerely,

James H. Pedersen
Planning Consultant

JOHN WAIHEE
GOVERNOR

Joseph K. Conant
Executive Director

STATE OF HAWAII
Department of Business and Economic Development
Housing Finance and Development Corporation
P. O. Box 29360
Honolulu, Hawaii 96820-1760

IN REPLY REFER TO:

88:PLNG/1044B JT

September 21, 1988

Planning Department
County of Hawaii
First Federal Business Plaza Building
75-5737 Kuakini Highway, Suite 105
Kailua-Kona, Hawaii 96740

Dear Sir:

Re: Draft Environmental Impact Statement (EIS)
for the Proposed Kamaaina Apartments project

We have reviewed the subject draft EIS and offer the following comments:

In the context of identifying families intended to be served by our lower cost housing development program, we have targeted families with incomes of 140% or less of the area median income as determined by the U.S. Department of Housing and Urban Development (HUD). The 1988 median income for a family of four in the county of Hawaii is $28,800.

As a guideline we have also segmented the lower cost housing target group into the following categories:

Income Group	Income Range
Very low	50% of the median income and below
Low	50% - 80% of median income
Low-moderate	80% - 120% of median income
Moderate	120% - 140% of median income

We have generally targeted for-sale housing to low-moderate and moderate income families. Our rental housing programs have generally assisted very low and low income families. For example the State Rental Assistance Program provides apartment owners with rent subsidies (averaging $175/month) for eligible tenants with earnings of 80% and below.

The U.S. Department of HUD has determined that a family should pay not more than 30% of its adjusted income for rent, including utilities. Although this ratio is applicable to the federal low-rent public housing and Section 8 Certificate programs, we have been using it as a guideline in estimating reasonable rent levels.

The applicant is proposing to provide apartment rental units which are affordable to "moderate" and "gap" income households. Although it is unclear how this relates to the HFDC's target groups, we are assuming that family earnings will range from 80% to 120% of the area median income.

The following table presents the range of rents which we consider to be affordable to low-moderate income families. This estimate is based upon (1) the proposed unit distribution of 24 two-bedroom units and 8 one-bedroom units; (2) the estimated occupancy level of a family of four occupying a two-bedroom unit and a family of two occupying a one-bedroom unit; (3) 1988 income levels established by HUD; and (4) rents at 30% of family income.

Family Size	80% of Median as adjusted by HUD	120% of Median	Estimated Range of Affordable Rents
2	$19,900	$27,650	$500 - $690
4	$24,900	$34,560	$620 - $860

Assuming that precautions are taken to preserve the Kuakini Wall and if the proposed project is able to provide rental units at rents within the range noted above, we believe the project could be a valuable addition to the inventory of affordable rental housing.

Sincerely,

JOSEPH K. CONANT
Executive Director

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Mr. Joseph K. Conant
Executive Director
Housing Finance and Development Corporation
State Department of Business and Economic Development
P.O. Box 29360
Honolulu, Hawaii 96820-1760

Dear Mr. Conant:

Subject: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

Thank you for taking the time to review the draft EIS for this project. We are in receipt of your comments that were provided in your letter of September 21, 1988.

Your letter provides useful information which presents your agency's definition for families served by your lower cost housing development program. In the preparation of the draft EIS, we have used "low", "moderate", and "gap" income definitions used by Belt, Collins and Associates in its development of housing units demands for West Hawaii. These forecasts were recently prepared for Hawaii County in conjunction with a development feasibility study made for the planned residential community in Kealakehe, Kona. Further, the family income ranges presented in the Kealakehe feasibility study parallel the 1987 income ranges developed by the U.S. Department of Housing and Urban Development.

Since Kamaaina Corporation does not intend to participate in federally-subsidized low-cost housing programs, e.g., Section 8 Certificate programs, our defined market groups and definitions were not intended to directly correlate with your agency's definitions of "moderate" and "gap" income households. Nevertheless, assuming that a family does not pay more than 30 percent of its adjusted income for rent, our defined market group represents families whose income will range from roughly 75 to 107 percent of Hawaii County's 1988 medium income.

Kamaaina Corporation intends to rent its one and two-bedroom units within your estimated range of affordable rents which you consider to be affordable for low-moderate income families. Consequently, we concur with your conclusion that the project

will be a valuable addition to the present inventory of affordable rental housing in West Hawaii.

Kamaaina Corporation is also committed to the preservation and interpretation of the Kuakini Wall even though this important feature is not located on its property. The Corporation proposes to establish an onsite setback from an existing easement where the Wall is located in order to encourage public viewing of the wall along a designated pedestrian walkway along the project's makai boundary. The Corporation will also install an attractive sign near the intersection of Makolea Street and the Kuakini Wall which will direct the public to the walkway and explain the general historical significance of the Wall.

We appreciate your providing constructive comments to the draft EIS.

Sincerely,

James H. Pedersen
Planning Consultant

COUNTY OF HAWAII

PLANNING DEPARTMENT

25 AUPUNI STREET • HILO, HAWAII 96720
(808) 961-8288

DANTE K. CARPENTER
Mayor

ALBERT LONO LYMAN
Director

TIM LUI-KWAN
Deputy Director

September 22, 1988

Mr. James H. Pedersen
Planning Consultant
P. O. Box 22
Volcano, HI 96785

Dear Mr. Pedersen:

Draft EIS - Kamaaina Apartments
Project Comments

We have reviewed the subject draft EIS submitted under procedural requirements of Chapter 343, HRS, and offer the following comments:

1) While Kamaaina Corporation has filed an application for an SMA permit with the County of Hawaii Planning Department, the triggering mechanism for compliance with Chapter 343, HRS, is that the project affects the Kahalu'u Historic District which is listed in the National Register of Historic Places and this information should be included in the purpose section of the draft EIS.

2) The County of Hawaii Planning Department's determination that a full environmental impact statement was required should be included in the appendix of the EIS.

3) All parties requesting to be consulted during the notice of preparation period should also be listed in the EIS.

4) On page 4-8, please note that a change of zone requires an approval from the County Council and not the Planning Commission.

5) On page 3-6, if the housing data and forecasts were derived from the Belt Collins, Kealakehe Study, this should be so noted.

6) Figure 2-6 (page 3-10) locates the Kuakini Wall on the mauka side of the lot rather than the makai boundary of the properties.

7) With respect to the archaeology, there should be a description of the Kahalu'u Historic District, the geographical limits, the overall significance of the district and the relationship of the sites found on the property to the broader context of the district itself. The statement on page 4-3 that no mitigative measures will be made to recover these features is not what the archaeologist has recommended, especially as data recovery is a technique for mitigating impacts.

8) The section on State and County land use should include information of the General Plan designations for the area (low and medium density urban).

Should you have any questions, please do not hesitate to contact Virginia Goldstein of my staff.

Sincerely,

ALBERT LONO LYMAN
Planning Director

VKG:aeb

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Mr. Albert Lono Lyman, Director
County of Hawaii Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Attention: Ms. Virginia Goldstein

Dear Mr. Lyman:

Subject: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

Thank you for providing your comments concerning the draft EIS for this project.

In our preparation of the final EIS, we will be revising the introductory and environment setting sections (Chapters 1 and 3) of the draft EIS. The sections will be expanded to document the significance of the Kahaluu Historic District and its relationship to Hawaii County's initial determination which required an EIS for this project. We will also point that Kamaaina Corporation will adhere to the mitigation measures recently recommended by your department and the State Historic Reservation Officer.

Public agencies consulted during the preparation of the initial EIS preparation notice will also be documented in the appendices of the final EIS. Figure 2-6 correctly locates the Kuakini Wall on the mauka side of this adjacent property. Lot 3 is owned by Gordon Ashikawa. Figure 2-6 was included to show the type of development proposed for this adjacent property. Please note that Figure 2-6 has been renumbered as Figure 3-3 in the Final EIS. This figure has also been revised to more accurately locate the wall within the adjacent 20-foot wide easement.

The multi-family rental housing market was quantified through the use of housing data and forecasts from the Kealakehe Study and related statistical assumptions made by James H. Pedersen, Planning Consultant. References to the Kealakehe Study (Page 3-6) were made through the citation of Peat Marwick Main & Co., 1988. Peat Marwick Main & Co., subconsultants to Belt Collins & Associates, prepared the housing forecasts for the Kealakehe study. We will revise this citation to reflect only Belt, Collins and Associates, as you requested.

Requirements for a change of zone described in Section 4.4.4.1, will be revised to reflect the necessary approval from the Hawaii County Council.

Section 4.4.4.2 of the draft EIS will be expanded to include an explanation of the General Plan designation for the project site and surrounding project area.

Should you have further questions, please contact me at your earliest convenience.

Your very truly,

James H. Pedersen
Planing Consultant

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
1600 KAPIOLANI BLVD., SUITE 1500
HONOLULU, HAWAII 96814
(808) 548-8060
(808) 946-2642

COPY

September 23, 1988

Mr. Albert Lyman, Director
Hawaii County Planning Department
First Federal Business Plaza Building
Suite 105
75-5737 Kuakini Highway
Kailua-Kona, HI 96740

Dear Mr. Lyman:

Subject: Draft EIS: Kamaaina Apartments Project, Kahalu'u, Hawai'i.
TMK: 7-8-14: 90,91,92,93

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

The project area is located within the important Kahaluu Historical District (Site 4150) which was placed on the National Register of Historic Places in 1974. It is also located within Site 6601, The Kona Field System, determined to be eligible for the National Register in 1977. Further archaeological work should be done, including intensive level field survey, historical documentary research, vegetation clearing and detailed mapping and recording of all sites, and appropriate test excavations. The results of the fieldwork should be described in a written report that is distributed to all interested parties. Salvage excavations should be conducted where appropriate. Please send our office copies of all archaeological reports generated by this project.

Sincerely,

Kamaki A. Kanahele

Kamaki A. Kanahele, III
Administrator

JAMES H. PEDERSEN
PLANNING CONSULTANT
P. O. BOX 22
VOLCANO, HAWAII 96785
(808) 967-7619

October 20, 1988

Mr. Kamaki A. Kanahele, III, Administrator
Office of Hawaii Affairs
State of Hawaii
1600 Kapiolani Blvd., Suite 1500
Honolulu, Hawaii 96814

Dear Mr. Kanahele:

Subject: Kamaaina Apartments Project
Kahaluu, North Kona, Hawaii
Draft Environmental Impact Statement (DEIS)

Thank you for taking the time to review the draft EIS for this project. We are in receipt of your comments that were provided in your letter of September 23, 1988.

Representatives Of the State Historic Sites Office, the Hawaii County Planning Department and Kamaaina Corporation met on October 12, 1988, to discuss the scope of appropriate mitigation for this project. On the basis of agreements reached during this meeting, Kamaaina Corporation will perform an intensive level field survey of the project site. This requirement will be a condition of Kamaaina Corporation's present rezoning request before Hawaii County.

An intensive level field survey report will be published by the Corporation's archaeologist. Copies will be distributed to the Hawaii County Planning Department and State Historic Sites Section office in Honolulu where the report will be available for your review.

Should you have further questions, please contact me at your convenience.

Sincerely,

James H. Pedersen

James H. Pedersen
Planning Consultant

APPENDIX C

ARCHAEOLOGICAL SURVEY REPORTS FOR THE PROJECT SITE

By Paul Rosendahl, Ph.D., Inc.

PAUL H. ROSENDAHL,Ph.D., Inc.
Consulting Archaeologist

Report 263-080886 August 8, 1986

Mr. Joseph Marcelin
76-952F Hualalai Road
Kailua-Kona, Hawaii 96740

Subject: Archaeological Reconnaissance Survey
Kahaluu Development Site
Land of Kahaluu, North Kona District,
Island of Hawaii (TMK:3-7-8-14:90,91)

Mr. Marcelin:

On Tuesday, August 6, 1986, an archaeological reconnaissance survey of the above subject parcels was conducted at your request. The basic purpose of an archaeological reconnaissance survey is to identify--to discover and locate on available maps--sites or features of possible archaeological significance. A reconnaissance survey is simply a pedestrian, or walkthrough, survey--extensive rather than intensive in scope--conducted to determine the presence or absence of archaeological resources within a specified project area. Reconnaissance survey indicates both the general nature and variety of archaeological remains present, and the general distribution and density of such remains. A reconnaissance survey permits a preliminary evaluation of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for such further archaeological work as might be necessary or appropriate. Such further work could include intensive survey--detailed recording of sites and features, and selected test excavations; and possibly subsequent mitigation-- salvage research excavation, interpretive planning and development, and/or preservation of sites and features with significant scientific research, interpretive, and/or cultural values.

The objectives of the present reconnaissance were three-fold: (a) to determine the presence or absence of any previously unidentified sites; (b) to assess the potential significance of all identified sites; and (c) to recommend any further archaeological work that might be necessary or appropriate. The archaeological reconnaissance survey was carried out in anticipation of your possible purchase and eventual multi-family zoning application. Reconnaissance field work was done by PHRI Field Archaeologist Alan T. Walker and PHRI Supervisory Archaeologist Theresa K. Donham. Approximately 6 man-hours of labor were expended in carrying out the field work. The present letter report constitutes the final report on the reconnaissance field work.

The project area consists of approximately 21,470 square feet in the Land of Kahaluu, North Kona District, Island of Hawaii (TMK:3-7-8-14:90, 91). The Land of Kahaluu was claimed and awarded (LCA 7713:6, Royal Patent 6856) in the mid-1800s to Victoria Kamamalu, sister of Kamehameha IV and Kamehameha V. The parcel is situated within the Kahaluu Historic District (Hawaii Register of Historic Places [HRHP] Site 50-10-37-4150), which is an extremely important Historical District that was placed on the National Register of Historic Places (NRHP) in 1974. In addition, the project area is situated within the four-corner locational boundary of the

larger Kona Field System (HRHP Site 50-10-37-6601), a very large complex (c. 3 by 18 miles in extent) of aboriginal Hawaiian dryland cultivation and habitation features previously declared eligible (January 1977) for inclusion in the NRHP. A second National Register eligible site, Kuakini Wall, which has two HRHP site designations (HRHP Site 50-10-37-6302, or -7276), is situated near or on the west boundary of the project area.

The project area is bounded by Makolea Street on the north, an adjacent parcel (TMK:3-7-8-14:89) and Kuakini Wall (6302) to the west, Kamehameha Investment Corporation (KIC) land to the south, and an adjacent parcel (TMK:3-7-8-14:92) to the east (Figure 1, at end). The project area ranges in elevation from approximately 45 to 70 ft above sea level. The terrain is an undulating surface with pahoehoe bedrock exposures and a soil mantle of Punalu'u Series extremely rocky peat (Sato et al. 1973). Average annual rainfall is c. 30-40 inches (Arnstrong 1983).

Present vegetation cover varies from moderate to heavy, and consists primarily of the introduced exotics koa-haole (Leucaena leucocephala [Lam.] de Wit), scattered kiawe (Prosopis pallida [Humb. and Bonpl. ex Willd.] HBK), monkey pod (Samanea saman [Jacq.] Merr.), and various grasses and weeds.

Based on a review of previous archaeological work within the general Kahaluu area, it is believed the present reconnaissance project comprised the first on-site archaeological inspection of the specific project area. Archaeological work conducted previously within the immediate general vicinity of the present project area includes Ching et al. (1973), Soehren (1979), Hammatt and Folk (1980), Kaschko (1985), Rosendahl (1981a,b), Hommon and Rosendahl (1983), Landrum and Rosendahl (1985), Walker and Rosendahl (1985), and Allen (1984), in addition to preliminary historical documentary research by Carol L. Silva (1985).

The present PHRI reconnaissance survey consisted of 100% coverage ground reconnaissance of the entire project area. The project area was covered by a series of north-south pedestrian sweeps with distances between crew members varying from 5.0-10.0 m, depending upon density of vegetation cover and local terrain. The approximate locations of all newly identified sites were plotted on a blueline topographic map of the project area (1"=50' scale, 2 ft contours; prepared by R.M. Towill Corporation for Kamehameha Investment Corp.). Each site or the primary feature within each site complex, was marked with blue flagging tape bearing the site number, date, the letters "PHRI", and PHRI project number (86-263). Flagging tape with the site number was also wrapped around a rock and placed on the structure as an aid to future site reidentification. All newly identified sites were assigned temporary field numbers prefixed with "T-", beginning with T-4.

The archaeological reconnaissance survey identified Site T-4 and previously identified Site 6302, Kuakini Wall. Furthermore, in addition to the identified surface structural features, Hawaii County Tax Map (TMK:3-7-8-14) identifies Makolea Trail south of the present project area. The tax map indicates that the trail extends east, possibly through the present project area. Site T-4 is a outcrop modified with a small

terrace and two short wall segments. The first wall segment is situated on the east side of the outcrop and measures c. 4.8 m (E-W) in length by 1.2 m wide and 0.3-0.6 m high. It is constructed with a basalt boulder foundation one to three courses high and a fill of smaller basalt cobbles. The wall segment is in poor condition and may possibly join Site T-3 in adjacent Parcel 92. The terrace feature is situated on the south side of the outcrop and measures c. 1.4 (N-S) by 1.35 m (E-W) and 0.45 m high. The terrace is raised approximately one boulder high on the south side and contains a roughly level basalt cobble surface. The raised south side consists of an alignment of four to five boulders. The second wall section is situated on the west side of the outcrop and contains an opening or break. The east wall section measures c. 5.5 m (E-W) in length and 0.7-1.3 m wide by 0.6-0.8 m high. This section is raised but not well faced, and constructed of crudely stacked basalt boulders and cobbles. Situated approximately 1.25 m west is an additional wall section which measures c. 3.5 m (E-W) in length and 0.6-0.9 m wide by 0.4-0.5 m high. This section is in poor condition, constructed of piled basalt boulders, and generally collapsed in appearance. The outcrop contains a small blister which is recently modified with a crude boulder wall, poles, and mats by neighborhood children to form a shelter. A second shelter recently constructed by neighborhood children is situated immediately south of the outcrop and the small terrace feature.

Site 6302, the Great Wall of Kuakini, is situated on or near the west boundary of Parcel 90 and extends south. The Kuakini Wall "is a massive, linear, mortar-less public works structure reportedly built by the order or proclamation of Governor Kuakini (John Adams)" (NRHP Nomination Form for Site 7276 [6302]) and built "during the period of 1830-1840" (Emory et al. 1971). The Great Wall of Kuakini has previously been recommended for preservation (Allen 1984:7).

The significance of archaeological remains can be defined in terms of potential scientific research, interpretive, and/or cultural values. Research value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. Interpretive value refers to the potential of archaeological resources for public education and recreation. Cultural value, within the framework for significance evaluation used here, refers to the potential of archaeological resources for the preservation and promotion of cultural identity and values.

To attempt definitive evaluation of the significance of archaeological resources on the basis of a preliminary assessment such as a reconnaissance survey is generally premature. Occasionally it is possible at even a preliminary level of study, such as that of a reconnaissance survey, to evaluate the significance of specific sites or features when their scientific research, interpretive, and/or cultural values are obvious; however, in most instances it is necessary first to conduct intensive survey, often including test excavations, to determine and substantiate the significance of specific archaeological remains.

In our opinion, the archaeological remains identified within the Kahaluu Development Site project area (Parcels 90-91) are, for the most part, of limited to moderate significance in terms of potential scientific

research, interpretive, and/or cultural values. With the exception of the Great Wall of Kuakini, the identified archaeological sites appear significant solely for their informational content, and are not deserving of preservation of their physical remains.

Upon completion of field work, survey findings and preliminary conclusion--including tentative evaluations and recommendations, were discussed (August 19, 1986) with Ms. Connie Kiriu, staff planner in the Hawaii County Planning Department. Ms. Kiriu is currently reviewing the conclusions and recommendations presented here regarding further archaeological work to be done within the Kahaluu Development Site project area.

Based on the findings of the reconnaissance survey and considering the location of the project area within the important Kahaluu Historical District, further archaeological work in the form of intensive survey (including historical documentary research, vegetation clearing, detailed mapping and recording, and controlled test excavations) is recommended. It is anticipated that this work would accomplish an appropriate and adequate recovery of the archaeological data present, and that no further work of any kind nor the continued physical preservation of the sites would be required. Furthermore, due to its location near or on the west boundary of Parcel 90, the Great Wall of Kuakini is recommended for preservation in its present form.

It should be noted that the evaluations and recommendations given here have been made on the basis of the surface reconnaissance survey. There is always the possibility, however remote, that previously unidentified surface structural remains or subsurface cultural features or deposits of high significance might be encountered in the course of subsequent archaeological investigations or other development activities. In such a situation, archaeological consultation should be sought immediately.

If you have any questions concerning our field inspection, or if we can be of any further service, please contact me at our Hilo office.

Sincerely yours,

Paul H. Rosendahl, Ph.D.
President and Principal
Archaeologist

ATW/PHR:yks

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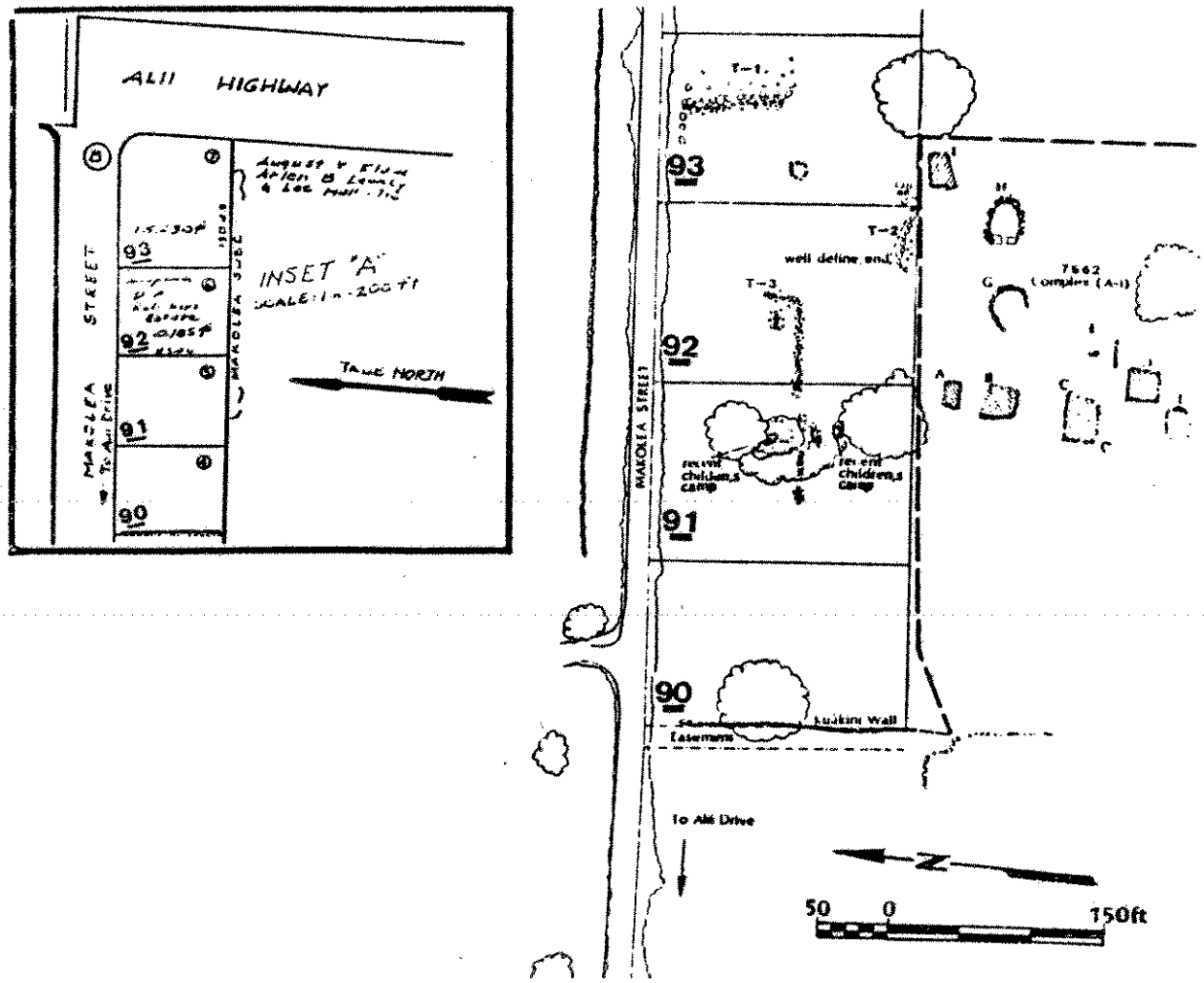

Figure 1. Project Area and Site Location Map

Kahaluu Development Site
Land of Kahaluu, North Kona
Island of Hawaii (TMK:3-7-8-14:90,91)

PHRI Project 86-263 August 1986

PAUL H. ROSENDAHL,Ph.D., Inc.
Consulting Archaeologist

Report 263-080786 August 7, 1986

Mr. Joseph Marcelin
76-952F Hualalai Road
Kailua-Kona, Hawaii 96740

Subject: Archaeological Reconnaissance Survey
Kahaluu Development Site
Land of Kahaluu, North Kona District,
Island of Hawaii (TMK:3-7-8-14:92)

Mr. Marcelin:

On Tuesday, August 6, 1986, an archaeological reconnaissance survey of the above subject parcel was conducted at your request. The basic purpose of an archaeological reconnaissance survey is to identify--to discover and locate on available maps--sites or features of possible archaeological significance. A reconnaissance survey is simply a pedestrian, or walk-through, survey--extensive rather than intensive in scope--conducted to determine the presence or absence of archaeological resources within a specified project area. Reconnaissance survey indicates both the general nature and variety of archaeological remains present, and the general distribution and density of such remains. A reconnaissance survey permits a preliminary evaluation of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for such further archaeological work as might be necessary or appropriate. Such further work could include intensive survey--detailed recording of sites and features, and selected test excavations; and possibly subsequent mitigation--salvage research excavation, interpretive planning and development, and/or preservation of sites and features with significant scientific research, interpretive, and/or cultural values.

The objectives of the present reconnaissance were three-fold: (a) to determine the presence or absence of any previously unidentified sites; (b) to assess the potential significance of all identified sites; and (c) to recommend any further archaeological work that might be necessary or appropriate. The archaeological reconnaissance survey was carried out in anticipation of your proposed multi-family zoning application. Reconnaissance field work was done by PHRI Field Archaeologist Alan T. Walker and PHRI Supervisory Archaeologist Theresa K. Donham. Approximately 4 man-hours of labor were expended in carrying out the field work. The present letter report constitutes the final report on the reconnaissance field work.

The project area consists of approximately 10,735 square feet in the Land of Kahaluu, North Kona District, Island of Hawaii (TMK:3-7-8-14:92). The Land of Kahaluu was claimed and awarded (LCA 7713:6, Royal Patent 6856) in the mid-1800s to Victoria Kamamalu, sister of Kamehameha IV and Kamehameha V. The parcel is situated within the Kahaluu Historic District (Hawaii Register of Historic Places [HRHP] Site 50-10-37-4150), which is an extremely important Historical District that was placed on the National Register of Historic Places in 1974. In addition, the project area is situated within the four-corner locational boundary of the larger Kona

Field System (HRHP Site 50-10-37-6601), a very large complex (c. 3 by 18 miles in extent) of aboriginal Hawaiian dryland cultivation and habitation features previously declared eligible (January 1977) for inclusion in the National Register of Historic Places. A second National Register eligible site, Kuakini Wall which has two HRHP site designations (HRHP Site 50-10-37-6302, or -7276), is situated approximately 60 m (200 ft) west of the project area.

The project area is bounded by Makolea Street on the north, an adjacent parcel (TMK:3-7-8-14:91) to the west, Kamehameha Investment Corporation (KIC) land to the south, and an adjacent parcel (TMK:3-7-8-14:93) to the east (Figure 1, at end). The project area ranges in elevation from approximately 67 to 78 ft above sea level. The terrain is an undulating surface with pahoehoe bedrock exposures and a soil mantle of Punalu'u Series extremely rocky peat (Sato et al. 1973). Average annual rainfall is c. 30-40 inches (Armstrong 1983).

Present vegetation cover varies from moderate to heavy, and consists primarily of the introduced exotics koa-haole (Leucaena leucocephala [Lam.] de Wit), scattered kiawe (Prosopis pallida [Humb. and Bonpl. ex Willd.] HBK), monkey pod (Samanea saman [Jacq.] Merr.), and various grasses and weeds.

Based on a review of previous archaeological work within the general Kaanluu area, it is believed the present reconnaissance project comprised the first on-site archaeological inspection of the specific project area. Archaeological work conducted previously within the immediate general vicinity of the present project area includes Ching et al. (1973), Soehren (1979), Hammatt and Folk (1980), Kaschko (1985), Rosendahl (1981a,b), Hommon and Rosendahl (1983), Landrum and Rosendahl (1985), Walker and Rosendahl (1985), and Allen (1984), in addition to preliminary historical documentary research by Carol L. Silva (1985).

The present PHRI reconnaissance survey consisted of 100% coverage ground reconnaissance of the entire project area. The project area was covered by a series of north-south pedestrian sweeps with distances between crew members varying from 5.0-10.0 m, depending upon density of vegetation cover and local terrain. The approximate locations of all newly identified sites were plotted on a blueline topographic map of the project area (1"=50' scale, 2 ft contours; prepared by R.M. Towill Corporation for Kamehameha Investment Corp.). Each site or the primary feature within each site complex, was marked with blue flagging tape bearing the site number, date, the letters "PHRI", and PHRI project number (86-263). Flagging tape with the site number was also wrapped around a rock and placed on the structure as an aid to future site reidentification. All newly identified sites were assigned temporary field numbers prefixed with "T-", beginning with T-1.

The archaeological reconnaissance survey identified a total of three distinct surface structural features (Figure 1, at end), of which one (T-1), appears situated in Parcel 93, immediately east of the present project area. Furthermore, newly identified Site T-2 may possibly be an extention of previously identified Site 7662, Feature I (Hammatt and Folk 1980). The range of formal feature types encountered include a terrace, a

boulder alignment, a surface boulder concentration, a modified outcrop, and a collapsed wall. In addition to the identified surface structural features, Hawaii County Tax Map (TMK:3-7-8-14) identifies the Makolea Trail southwest of the present area. The tax map indicates that the trail extended east, possibly thru the present project area.

Site T-1 is a large terrace situated in the northeast corner of Parcel 93. The terrace measures c. 18.0 (N-S) by 9.0 m (E-W) and 1.6 m high on the downslope (west) side. It is rectangular shaped, constructed of large, crudely stacked, basalt boulders. The terrace contains a level surface of basalt boulders and cobbles which appears level with the inland (east) edge. The terrace is raised on the north, south, and west sides, but is not formally faced. Portable remains visible on the terrace surface include historic metal and plastic objects. The terrace appears to have previously been altered by bulldozing activity during construction of Makolea Street, as evidenced by the truncated appearance and bulldozer berm on the north side of the terrace and bulldozer tracks on its surface. Furthermore, the large basalt boulders on the west side of the terrace also appear to be the result of bulldozing activity evidenced by large tree trunks within the structure. Site T-1 appears to be a large terrace which may contain portions of an intact prehistoric structure, but which has subsequently been altered and enlarged to function as a recently occupied house foundation.

Site T-2 is an alignment and concentration of basalt boulders and cobbles which appear to be a component feature of Site 7662-I situated immediately south of Parcel 92. The alignment and concentration of basalt boulders and cobbles measures c. 13.0 m in length, extending west from Site 7662-I, by c. 1.0-2.0 m wide and 0.2-0.6 m high. It is constructed of piled basalt rocks and appears low in profile. The west end of the feature contains a well defined alignment section which measures c. 2.0-1.5 by 0.5 m and 0.4 m high. Previously identified Site 7662-I has been identified as a possible habitation platform (Hammatt and Folk 1980) and recommended for preservation (Hammett and Folk 1980, Allen 1984).

Site T-3 is a modified outcrop and collapsed L-shape wall. The modified pahoehoe outcrop measures c. 6.0 (E-W) by 3.0 m (N-S) and 0.5 m high. It is modified with subangular basalt cobbles which fill the cracks and low areas to form a roughly level surface. The collapsed L-shaped wall measures c. 3.5 (N-S) by 22.5 m (E-W) in area and is c. 1.8-2.9 m wide by c. 0.2-0.3 m high. It is constructed of piled basalt boulders and cobbles, but generaly collapsed in appearance, and rounded or sloping in profile. The wall appears to extend toward parcel 91 and Site T-4.

The significance of archaeological remains can be defined in terms of potential scientific research, interpretive, and/or cultural values. Research value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. Interpretive value refers to the potential of archaeological resources for public education and recreation. Cultural value, within the framework for significance evaluation used here, refers to the potential of archaeological resources for the preservation and promotion of cultural identity and values.