

September 26, 1978

MEMORANDUM

To: Honorable Ryokichi Higashionna, Director
Department of Transportation

Subject: Environmental Impact Statement for Kuskini Highway Realignment,
South Kona, Hawaii

Based upon the recommendation of the Office of Environmental Quality Control, I am pleased to accept the subject document as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes, and the Executive Order of August 23, 1971. This environmental impact statement will be a useful tool in the process of deciding whether or not the action described therein should or should not be allowed to proceed. My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws, and does not constitute an endorsement of the proposed action.

When you make your decision regarding the proposed action itself, I hope you will weigh carefully whether the societal benefits justify the environmental impacts which will likely occur. These impacts are adequately described in the statement, and, together with the comments made by reviewers, will provide you with a useful analysis of alternatives to the proposed action.


George R. Ariyoshi

bcc: Mr. Richard O'Connell
Environmental Quality Commission

Office of Environmental Quality
Office of the Governor
550 Halekauwila Street
Tani Office Building, Third Floor
Honolulu, Hawaii 96813

KUAKINI HIGHWAY REALIGNMENT

Island of Hawaii
Project No. RF-011-1(14)

FINAL ENVIRONMENTAL IMPACT/
SECTION 4(f) STATEMENT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

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FHWA-HI-EIS-76-01-F

Office of Environmental Quality Control
Office of the Governor
550 Halekuanila Street
Tani Office Building, Third Floor
Honolulu, Hawaii 96813

KUAKINI HIGHWAY REALIGNMENT
Project No. RF-011-1(14)

involving
the realigning of
3.1 miles of Kuakini Highway, from
Palani Road to the Kealakowaa Heiau
in the North Kona District,
Island of Hawaii

ADMINISTRATIVE ACTION

FINAL
ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and

State of Hawaii Department of Transportation
Land Transportation Facilities Division

Submitted pursuant to 42 U.S.C. 4332(2)(c),
23 U.S.C. 128(a), 49 U.S.C. 1653(f) and
16 U.S.C. 470(f)

8/78

Date

DIRECTOR, OFFICE OF ENVIRONMENT AND DESIGN
FEDERAL HIGHWAY ADMINISTRATION
REGION 9

SUMMARY

A. Check appropriate box(es)

Federal Highway Administration

Administrative Action Environmental Statement

() Draft (X) Final

(X) Section 4(f) Statement attached

B. Individuals to be contacted for further information:

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
300 Ala Moana Boulevard, Box 50206
Honolulu, Hawaii 96850
Phone: 546-5150

Mr. Tetsuo Harano
Chief, Land Transportation
Facilities Division
Hawaii State Department of
Transportation
869 Punchbowl Street
Honolulu, Hawaii
Phone: 548-5711

C. Description

The Kuakini Highway Realignment project, FAP Route 11, is located in the North Kona District on the Island and County of Hawaii, State of Hawaii. This project proposes to construct a new two-lane highway, approximately 3.1 miles in length. It will extend southeasterly from the intersection of Queen Kaahumanu Highway and Palani Road, and will terminate at the existing Kuakini Highway near the Kealakowaa Heiau.

D. Summary of Environmental Impacts

The bypass highway will improve the operational characteristics of the highway system in the North Kona District, particularly in the vicinity of Kailua Village. The standards to which it will be built will provide for the highest degree of safety practicable.

The highway will reduce traffic around Kailua Village and its attendant air and noise pollution.

State and Federal air quality standards will not be exceeded. Noise levels along the proposed route will be within acceptable limits. No water quality problems are anticipated.

The upgraded transportation facility will have some effect on the urban growth of the area. Since Kailua-Kona is an increasingly important tourist destination area, the improved highway will be a contributing factor to the development of the tourist industry and its supporting activities.

The proposed project is reflected in the General Plan for the area and will assist in achieving its goals by enhancing the possibilities of developing adjacent unimproved lands. Urban expansion of Kailua-Kona will be accompanied by increased economic activity and hence more jobs; but it will also be accompanied by an increasing population and, consequently the pollution, noise and other problems associated with urban growth.

The project will impact primarily pasture lands, but will also pass through the Kona Heights and Kona Hillcrest Subdivisions. Residences and businesses, however, will not be impacted as the affected parcels contain no major structures or dwellings. The project will also impact the Great Wall of Kuakini and the Kona Field System, two historic resources that are eligible for nomination to the National Register of Historic Places. The Advisory Council on Historic Preservation, the Federal Highway Administration, and the State Historic Preservation Officer have jointly executed a Memorandum of Agreement outlining the mitigation measures to preserve these resources.

E. Major Alternatives Considered

A total of ten major highway alternatives were initially studied, including the selected alternate and the proposal to "do nothing." Of the initial alternatives, four alternates besides the "do nothing" were fully developed and presented at a public hearing held on July 8, 1976. These alternates (Appendix A, Figure 4) are as follows:

- (1) Line 1 - the recommended alignment of this project which has been described in the foregoing sections.

- (2) Line 6 - which bypasses a portion of Kuakini Highway and quickly converges with it near Hualalai Road. From there it generally follows the alignment of the existing highway southerly through the urban area to the Kealakowaa Heiau.
- (3) Line 8 - which improves the existing facility in its entirety.
- (4) Safety and Intersection Improvements - which are limited to safety, alignment and intersection improve-ments along the existing facility.

F. Agencies and Organizations from Which Comments Have Been Requested

(Refer to Mailing List, Appendix G)

G. Agencies and Organizations That Have Submitted Comments
(Refer to Mailing List, Appendix G).

H. Date the DEIS was submitted to CEQ

The draft environmental impact statement was mailed to the Council on Environmental Quality on March 9, 1976 and a period of 45 days from that date was established for review and comment.

TABLE OF CONTENTS

	<u>Page</u>
I. Location and Need for Project	I-1
II. Description of the Proposed Action	II-1
III. The Social, Economic and Environmental Context	III-1
IV. Land Use Planning	IV-1
V. Impact of the Highway	V-1
VI. Alternatives	VI-1
VII. Probable Adverse Environmental Effects Which Cannot be Avoided	VII-1
VIII. Mitigation Measures for Unavoidable Adverse Environmental Effects	VIII-1
IX. Relationship Between Short-term Environmental Uses and the Maintenance of Long-term Productivity	IX-1 IX-1
X. Irreversible and Irretrievable Commitment of Resources	X-1
XI. The Impact on Properties and Sites of Historic and Cultural Significance	XI-1
XII. Coordination	XII-1
Bibliography	
Appendices	
Section 4(f) Statement	

I. LOCATION AND NEED FOR PROJECT

This project is located in Kailua, North Kona District, on the Island of Hawaii. Appendix A, Figure 1 indicates the approximate project location.

The major traffic arteries serving the project area are:

1. Mamalahoa Highway, FAS 190, (connecting Kona with the South Kohala District).
2. Kuakini Highway, FAP 11, (connecting Kailua with the inland Keauhou area).
3. Alii Drive, FASC 187, (serving the shoreline areas between Kailua and Keauhou).

Access to the Kailua Bay area from Mamalahoa Highway is provided by Palani Road.

The County of Hawaii has plans to realign Alii Drive and has adopted the corridor shown in Appendix A, Figure 4. Possibly, the realigned Alii Drive may be extended along the south side of the Kona Hillcrest Subdivision to connect with this project.¹

Construction was recently completed for the Queen Kaahumanu Highway (FAP 19) and this 35-mile long facility affords a direct coastal route between Kailua-Kona and the port and community of Kawaihae in the South Kohala District.

¹ County of Hawaii, Department of Public Works, Final Alignment Report, Alii Highway, Kailua Village to Keauhou, August 1973

Previously, two lanes were completed linking Ke-Ahole Airport, Kailua-Kona, Anaehoomalu and Kawaihae. The 8-mile section between Ke-Ahole Airport and Kailua-Kona serves traffic between the Airport, the Honokohau Small Boat Harbor and Kailua-Kona.

The State is also considering a highway improvement of 30 miles from the end of this project southerly to Papa (Hawaii Belt Road, Project No. F-011-1(8)).

With the construction of the Queen Kaahumanu Highway, this project and the section to Papa, a fast, safe and efficient belt highway will provide transportation from Kohala to Kau.

As one of the main attractions in West Hawaii, Kailua-Kona has grown tremendously and the Hawaii County General Plan and Kailua Village Urban Design Study both indicate that this growth will continue.

In anticipation of this growth, the Kuakini Highway Realignment study was initiated to relieve the growing congestion on the existing highway. Traffic projections indicate that volumes will likely double in Kailua within the next 20 years (from nearly 10,000 to 20,000 vehicles per day, refer to Appendix A, Figure 11) and this increased volume will seriously overburden the present facility.

Secondly, this study was needed to analyze the present roadway conditions in order to reduce the increasing amount of roadway-contributing accidents. Based on current standards for a belt highway, the existing roadway is deficient in terms of alignment, superelevation, pavement widths, shoulder widths, and access control. Furthermore, Kuakini Highway serves as a combination "through" highway and local street, for which high-speed "through" traffic and slower local traffic are dangerously intermixed. These factors contribute to the accident rate being almost twice the average rate of a similar highway (see Appendix A, Figure 12).

Finally, this study was initiated to provide continuity between Kuakini Highway and the new Queen Kaahumanu Highway. The Queen Kaahumanu Highway (FAP 19) is a high-speed highway along the coast from Kawaihae to Kailua-Kona which ends abruptly at Palani Road (see Appendix A, Figure 4). A 90-degree turning maneuver must be executed to continue south along Kuakini Highway. The realignment will eliminate this turning maneuver.

II. DESCRIPTION OF THE PROPOSED ACTION

The proposed highway improvement will realign approximately 3.1 miles of Kuakini Highway. It begins at Palani Road as a tangent extension of the new Queen Kaahumanu Highway and by-passes Kailua-Kona on the upland side. It then proceeds southeasterly through the Kona Heights and Kona Hillside Subdivisions to connect with the existing Kuakini Highway near the Kealakowaa Heiau. Appendix A, Figure 4 indicates the selected corridor (Line 1) and its limits.

The existing Kuakini Highway (FAP 11) is primarily a two-lane facility of approximately 6.5 miles. Built in 1954 as a Federal Aid Secondary route, it has a 22-foot wide pavement and 5-foot shoulders within an 80-foot minimum right-of-way width.

This project proposes to construct two 12-foot lanes and 10-foot shoulders within a 150-foot minimum right-of-way width (see Appendix A, Figure 7). Additional rights-of-way may be needed where cuts and embankments are required but otherwise, the proposed minimum right-of-way will be sufficient to accommodate future traffic requirements.

A partial control of access will be imposed for the length of this project. At-grade intersections will be provided at Palani Road, Hualalai Road, Kona Heights Road and the existing Kuakini Highway. Other design features are shown in Appendix A, Figure 8, however, such details may be revised during later project stages.

As also shown on Appendix A, Figure 8, the preliminary cost estimates for this project are:

Construction	\$2,694,000
Preliminary Engineering	245,000
Right-of-Way	<u>2,739,000</u>
	\$5,678,000

The Federal and State levels of government will jointly participate in the financing of this improvement which will be on a matching basis of 70% and 30% respectively.

This project which began in August 1968 is presently in the final stages of the planning phase. Corridor public hearings were held in Kailua-Kona on July 9, 1970 and on July 8, 1976.

The tentative date of rights-of-way acquisition for the Kuakini Highway Realignment project is mid-1979 with construction to follow in late 1980.

III. THE SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONTEXT

A. Social

One of the primary destinations and cultural attractions of West Hawaii is Kailua-Kona. Sited on the shore of Kailua Bay, this community is readily associated with many historical and recreational activities. Kailua Wharf, Hulihee Palace, and Mokuaikaua Church are often-visited sites of this colorful and picturesque village setting.

Kailua has most of the facilities and public services available to similarly expanding communities. Police emergency facilities, a public high school and the Kona Hospital are located approximately 6 miles south of this project. A fire station, public intermediate and elementary schools, and playground facilities are located in the more immediate vicinity.

In the outlying areas, are residential subdivisions, condominium establishments, and business operations. On the northern fringes of this project are rows of warehousing facilities as well as a major shopping center.

Information concerning population characteristics is included in Appendix B, the conceptual stage relocation program plan.

Historic sites which are listed in the National Register of Historic Places¹ are located away from the project area by the approximate distances shown:

	<u>Distance</u> (miles)
1. Kealakekua Bay Historic District	8.8
2. Kahaluu Historic District	1.8
3. Kahonu Residence of King Kamehameha	0.4
4. Honokohau Settlement	2.5
5. Kuamo'o Burials	4.4
6. City of Refuge National Historic Park	16.8
7. Keauhou Holua Slide	3.5
8. Hulihee Palace	0.4

The following historic sites have been identified in the more immediate project area:

1. Thurston House Ruins
2. Kona Field System
3. Kealakowaa Heiau
4. St. Michael's Catholic Church
5. Springer House
6. The Great Wall of Kuakini
7. Honuaula Platform

1 U.S. Department of the Interior, National Register of Historic Places, 1978

Of these, the Kealakowaa Heiau and the Honuauia Platform are on the Hawaii Register of Historic Places.¹ A description of each of these sites is included in the project Historical Properties Report, and a copy of this report is included in the attached Section 4(f) Statement.

Only two of these historic sites, the Kona Field System and Great Wall of Kuakini will be affected by this project.

B. Economic

Due to the poor terrain and soil conditions in the project area, cattle ranching is the predominant agricultural activity rather than crop production. Large coffee, macadamia nut and avocado farms are located further south of this project.

The Kona Coast is rapidly becoming a tourist destination area, and consequently, a significant sector of the local population is employed in the public service and visitor-oriented industries. In addition, as economic and other pressures dictate, agricultural lands will be gradually rezoned to higher residential, commercial and resort uses.²

1 State of Hawaii, Department of Land and Natural Resources, Hawaii Register of Historic Places, 1974

2 County of Hawaii, The General Plan, Ordinance No. 439, January 1971

Property taxes are a source of revenue for the County of Hawaii. For this project, these taxes are based upon land valuations as established by the State Department of Taxation.

Employment information is available in Appendix B.

C. Environmental

The terrain outside of Kailua Village is rugged and rocky with scattered brush, koa-haole and kiawe trees. The proposed highway will pass over lava formations of both the aa and pahoehoe types. A thin layer of organic soil, approximately 4 to 18 inches thick, covers the lava bedrock.¹

The terrain cross slope is approximately 10 to 15 percent. The new highway starts at an approximate elevation of 150 feet and ascends to an elevation of nearly 400 feet.

The climatic conditions of Kailua-Kona are very favorable from a construction standpoint. The average monthly temperature ranges from 72°F - 78°F with the highest and lowest recorded temperatures being 93°F and 47°F, respectively. The maximum recorded monthly rainfall is approximately 13 inches and the average annual rainfall is nearly 25 inches. These measurements were obtained at the .

1. U.S. Soil Conservation Service, "Soil Survey of the Island of Hawaii," 1973

Old Kona Airport by the National Weather Service,
National Climatic Center.

The drainage basin for this project extends approximately seven miles inland, and is characterized by dry vegetative growth in the project area and thick tropical vegetation in the upper forest reserve. Due to a high infiltration rate, the project area has no lakes or perennial streams. The steep slopes, shallow soils, frequent high intensity rains, and lack of well-defined drainage ways make Kailua susceptible to flooding and overland flows.

As previously stated, the proposed highway will traverse areas predominantly overgrown with koa-haole (Leucaena glauca), kiawe (Prosopis pallida), and guinea grass (Panicum maximum Jacq.).

In addition, the following flora were encountered in the proposed highway right-of-way:

1. Pili grass (Heteropogon contortus) at the Palani Road intersection.
2. Approximately 20 plumeria trees (Plumeria acuminata), three feet high at the end of Oni Oni Street in the Kona Hillcrest Subdivision.
3. Castor bean plant (Ricinus Communis) near Hualalai Road.

All of the wildlife observed in the project area are introduced species and common to each of the major islands in the Hawaiian chain.

Feral life are limited to field mice, rats and mongoose.

Birds nesting and feeding include mynah (Acridotheres tristis), dove (Streptopelia chinesis), sparrow (Passer domesticus), cardinal (Richmondia cardinalis), and Japanese "white eye" (Zosterops palpebrosus japonicus).

IV. LAND USE PLANNING

In accordance with the zoning designations of the State Land Use Commission, the project area is either urban, as in Kailua Village, or agricultural. (Refer to Appendix A, Figure 2.)

Zoning guide maps of the Hawaii County General Plan are included in Appendix A, Figures 3A, 3B and 3C. The General Plan Land Use Allocation Map for Kona is provided in Appendix A, Figure 3E. A Facilities Map as presented in the General Plan (refer to Appendix A, Figure 3D) shows the approximate alignment of this project and designates it as a "proposed primary arterial."

The General Plan of the County of Hawaii recommends as a transportation "course of action" the realignment of Kuakini Highway which would assist in accomplishing the Plan objective of "an integrated State and County system so that new major routes will complement and encourage proposed land uses."

The "Kailua Village Urban Design Study," which was adopted in July, 1976 by the Hawaii County Council and prepared subsequent to the General Plan reinforces the importance of this improvement in the development of Kailua.

V. IMPACT OF HIGHWAY

A. Social

1. Safety

As the new facility will be part of the belt highway, the standards to which it will be built will provide for the highest degree of safety practicable.

The design of this project will recognize public safety in all aspects. This aspect, which is expressed in the detailed design of such items as guard rail location, barrier design and location, use of breakaway design features, lighting and signing, utility relocation, basic geometric features including lane width, lane delineation, traffic flow considerations, traffic signals, etc., will be constantly reviewed during the design of the project.

2. Education

No schools will be directly affected by this project.

3. Religious Institutions

The project will require church-owned property, however, no church or church-related facilities will be displaced.

4. Residential and Neighborhood Character and Location

The highway improvement will not divide neighborhoods or disturb the present character of the neighborhood.

Where subdivisions are impacted, the highway will affect the fringe lots or the relatively unoccupied sections. The proposed highway which passes through the Kona Heights and Kona Hillcrest subdivisions has been coordinated in early project stages. Sufficient land is available, through these subdivisions, to permit construction without displacing residences.

5. Relocation

The proposed highway will not displace any residences or business establishments although as previously mentioned, two subdivisions will be impacted.

Details on relocation were developed as part of the State's Conceptual Stage Relocation Program. This program together with data from a commercial/industrial and housing survey is contained in Appendix B.

The Conceptual Stage Relocation Plan basically forecasts the probable feasibility of the various alternative alignments from a relocation standpoint. The Plan also evaluates the probable impact on various businesses and residences along the various alternative alignments including the alignment of this project.

6. Bikeways

Bikeway is a term used to designate all facilities that explicitly provide for bicycle travel. It can be anything from an independent facility on separate rights-of-way to the shoulder of a street or highway designated as a bikeway by signs, striped lanes, and/or other measures such as barrier railing, fencing, traffic bars, etc.

The Statewide Master Plan for Bikeways¹ was recently prepared which included several recommendations for the Kailua area. Under the later phases of the master plan, a bike lane is proposed to be constructed within the highway right-of-way.

¹ Sunn, Low, Tom and Hara, Inc., and H. Mogi, Statewide Master Plan for Bikeways, Final Report, prepared for State Department of Transportation, March 1977

7. Fire Protection

The section of highway will not disrupt any fire protection facilities for the area.

8. Public Utilities

Design will carefully and completely recognize and incorporate within construction documents any necessary requirements to maintain during construction and for ultimate uses, existing public and private services. The design will be accomplished in close and continued liaison with the utility agencies. A decision to provide underground or overhead utility lines will be made during the design phase of this project.

9. Recreation and Park

No recreation or park facilities would be impacted by this project.

10. Historical

Refer to Chapter XI.

B. Economic

1. Employment

An upgraded transportation facility will have some effect on the urban growth of the area. Since Kailua-Kona is an increasingly important tourist destination area, the improved highway

will be a contributing factor to the development of the tourist industry and its supporting activities. The proposed project will also enhance the possibilities of developing adjacent unimproved lands. Properties which are now impractical to develop due to access limitations will logically become more attractive as a direct result of the new highway.

The urban expansion of Kailua-Kona will be accompanied by increased economic activity and the creation of an expanded job market in the project vicinity. As more resort and housing developments are constructed, more services and facilities will be needed and consequently more jobs will be created. This is further examined in Section V.D., Secondary Impacts.

Since the project does not displace businesses, the proposed highway should not adversely affect employment. Construction employment will however be available for the duration of the project.

2. Agriculture

Approximately 30 acres of marginal pasture land will be acquired for this project. The acquisition of these lands will not seriously impact the cattle raising industry since vacant agriculturally-zoned lands are available throughout Kona.

Large parcels which are used for cattle grazing may also be divided by the proposed highway. Cattle underpasses will be constructed wherever appropriate. In addition, access will be allowed to the new highway from these parcels for the purpose of transporting livestock.

3. Tax Base

Property acquisition will remove nearly \$30,700 from annual tax revenues; however, this project should have a favorable effect on the tax base. The new lands opened by the project may be up-graded from agricultural to higher uses, thereby increasing property values, commercial activity, and consequently, tax revenues.

4. Maintenance and Operating Features

The design of the project will recognize the continuing aspects of maintenance and operations. Drainage systems, lighting systems, structures, signs, pavements, slopes, and all other facilities will be designed for easy maintenance and operation.

5. Operation and Use of Existing Highway
Facilities

The design will recognize the operational aspect of existing highways and roadways, both during and after construction. The construction contracts will contain plans for traffic main-tenance. Such plans will include construction phasing, temporary detours, temporary signing and safety features for public protection.

Inconvenience to motorists, pedestrians, and abutting property owners will be minimized.

C. Environmental

1. Visual Impact and Aesthetics

This highway will pass through land which has not been extensively developed. The terrain remains rugged and rocky with scattered brush of koa-haole and kiawe trees. At its higher elevations, the alignment will introduce new mountainous and coastal scenic vistas. The design of the highway alignment and profile will insure a compatible relationship with the surrounding area. Landscaping will be accomplished wherever feasible.

Cuts and fills may detract from the natural scenic quality of the countryside. Based upon preliminary estimates, nearly 270,000 cubic yards of subsurface material will be excavated of which 220,000 cubic yards may be used for fill. Due to the surplus material, spoil sites may also be required in the project area. For all disturbed areas, with the exception of commercial sites, proper methods will be employed to reduce erosion and preserve the natural terrain.

The recognition of aesthetic factors will be constantly reviewed during the design of this project, including the possibility of underground utility replacement.

2. Noise Pollution

Sources of noise emissions resulting directly from this project would be due to construction operations and increased traffic over the 20-year design period.

Construction noises would be unavoidable but temporary. Inconveniences could be minimized by scheduling heavy construction during daylight hours.

Noise levels due to traffic after construction at the end of the 20-year design period can only be predicted. The theory and methods of noise prediction as utilized herein are outlined in the National Cooperative Highway Research Program Report No. 117 (NCHRP 117), "Highway Noise - A Design Guide for Highway Engineers."

In order to evaluate whether traffic noise would be a problem, the noise level for the year 1995 was predicted at the Kona Hillcrest Subdivision. In addition to the predicted noise level, the existing exterior noise level was measured in the field using a general purpose sound level meter at about the same location during peak periods. This was done to provide some basis of comparison between the existing and predicted noise levels.

It is expected that the noise level exceeded 10% of the time (L_{10}) will be 64 dBA which is below Federal design standards. State noise standards are not applicable since the project is not in the vicinity of "any school classroom, library, multi-purpose

room, hospital, or rest home."¹ Appendix A, Figure 9 shows the noise data for this project.

3. Air

Generally, air pollution is not a health hazard in Kailua Town. The town is surrounded by agricultural and undeveloped lands and the ocean. There is no agricultural burning.

Air pollution from motor vehicle emissions is not expected to have any significant impact on the local air quality. The present and future traffic projections (Appendix A, Figure 11) have been reviewed by the State Department of Health (DOH) for consistency with the State's Implementation Plan on Air Quality. The Department of Health's findings, which are documented in Appendix E, indicate that implementation of any of the proposed alternatives would, for the year 1985, result in a decrease in overall emissions for carbon monoxide and hydrocarbons. Nitrogen oxide emissions will increase but will not have a significant impact on the overall ambient air quality.

¹ State of Hawaii, Department of Health, Community Noise Control for Oahu, Chapter 44B, Public Health Regulations, April 1976

In addition to the burden analysis performed by the DOH, carbon monoxide emissions were also predicted using the Environmental Protection Agency's "HIWAY" model to analyze the effects of dispersion under the worst meteorological conditions. This analysis substantiated the findings of the DOH and a summary of the results is contained in Appendix E.

Highest 1-hour and 8-hour carbon monoxide concentrations were calculated in accordance with the procedures of the California Line Source Model (CALINE-2). For the Kona Hillcrest residence closest to the proposed realignment, pollutant levels did not exceed State and Federal standards. Results of this analysis are also contained in Appendix E.

The air pollution predictions indicate that this project is consistent with the control strategy as presented in the State Implementation Plan.

Review of the draft EIS by the U.S. Environmental Protection Agency resulted in comments that classify the project as Category LO-1. This classification indicates

that the EPA has no objections regarding the proposed improvement and believes adequate information is included in the draft EIS concerning environmental impact.

Dust resulting from highway construction activity is also a problem. However, this problem will be minimized by dust suppressive methods. Specific control methods include, where applicable, sprinkling and restricting areas of operation, paving heavily-traveled construction lanes, and even restricting construction activity during extremely dry or windy weather conditions. These and other appropriate methods of dust control will be detailed in the specifications of the construction document. The requirements relating to fugitive dust controls are included in Chapter 43, Air Pollution Control, Public Health Regulations, Department of Health, State of Hawaii.

4. Drainage

The drainage basin for this area is characterized by dry vegetative growth along the project area and thick tropical vegetation in the upper forest reserves. The ground slope is steep averaging approximately

10 to 15%. The steep slopes, shallow soils, frequent high intensity rains, and lack of well-defined drainage ways make Kailua susceptible to flooding and overland flows. Flash floods primarily from overflows of the Keopu Stream have damaged roads, crops, livestock and urban developments in Kailua. To correct the situation, the U.S. Soil Conservation Service has recently completed the Keopu Stream flood control project which includes open and covered box channels and debris basins with dams.

The County of Hawaii is also planning a flood control project near the south end of this highway project.¹ Coordination with the U.S. Soil Conservation Service and the County of Hawaii will assure that the proposed highway project will not conflict with the flood control plans for this area.

The primary physical effect of the highway is not directly a function of how much area it occupies but, rather, of the fact that it cuts across the surface drainage flow direction. This results in the

1 Stanley S. Shimabukuro and Associates, Environmental Impact Statement for Master Plan of Kona Flood Control Project (Holualoa Drainage System), June 1974

interception and concentration of any surface runoff at those points where culverts pass the flow under the highway. During the design of the highway, a sufficient number of culverts will be provided and carefully located to spread the flow and thus prevent excessive erosion or flooding below these flow concentration points. With adequate spreading, there should continue to be enough infiltration as the flow moves toward the coastline and no increase in the incidence of flooding above what it would be without the highway. It would not be a good idea to contain the flow in lined channels, since this would further concentrate the flow and markedly reduce the infiltration, with a consequent increase in the risk of flooding at the end of the channel.

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

5. Water Pollution

There are no lakes or perennial streams in the project area.

Discharge of surface runoff will be into existing storm drains leading to Kailua and Oneo Bays. Kailua and Oneo Bays are situated 500 to 1,000 feet from the existing Kuakini Highway and are classified as Class B waters under the State Department of Health's Water Quality Standards.

The uses to be protected under Class B waters are small boat harbors, commercial and industrial shipping, bait fishing and aesthetic enjoyment. Construction of this improvement will comply with the State's Standard Specifications for Road and Bridge Construction, Section 639, relating to water pollution to insure that these uses will be protected.

Water-table wells at Kahaluu and the Waiaha Stream are the primary fresh water sources for North Kona residents. The wells are located approximately 2.4 miles south of the project, and the Waiaha Stream inlet is at least 1.7 miles easterly of Line 1 and at a

higher elevation. Due to this spatial separation, the proposed highway should not affect these water resources.

The State's water pollution control authority, the State Department of Health, has been consulted (see Appendix F) and no adverse effects to the water quality are anticipated as a consequence of the proposed improvement.

6. Conservation

No conservation lands will be affected by the highway improvement.

7. Vegetation

All of the observed flora within the proposed right-of-way are common to the islands. The construction of the highway will not endanger any botanic species within the Kona area.

8. Wildlife

All of the wildlife observed in the project area are introduced species and common to each of the major islands in the Hawaiian chain.

Construction of the proposed highway will eliminate 38 acres of potential feeding grounds. However, sufficient feeding areas

are available adjacent to the highway corridor so that the impact to wildlife can be considered minimal.

Coordination of land and natural resources interests such as fish and game has been effectuated through the State Department of Land and Natural Resources. (Appendix D).

D. Secondary Impacts

This project reflects the transportation requirements needed to support the development proposals of the County of Hawaii's General Plan (Appendix A, Figure 3E). In addition, the County Planning Department's report entitled "Kailua Village Urban Design" study which is a planning document intended to implement the General Plan makes three recommendations which directly affect this project.

1. It supports the construction of this realignment, calling it the Queen Kaahumanu Highway extension.
2. It suggests that Kuakini Highway be widened to four lanes to service the Kailua Village circulatory traffic.
3. It recommends no collector road be permitted within the area bounded by Palani Road, this

realignment, Hualalai Road and Kuakini Highway (as proposed by alternative Line 6).

Construction of this improvement will contribute to the development of the undeveloped areas and its attendant public facilities west of Line 1. However, being that Line 1 is consistent with the overall planning goals established by the County Planning Department, no significant secondary impacts are anticipated. (Refer also to Planning Department's DEIS comment included in Appendix I).

VI. ALTERNATIVES

Prior to describing the alternatives, it should be emphasized that the exact design details (location of structures, embankments, etc.) will be determined during the subsequent design phase. Design details referred to in this report are based on assumptions made in the planning stage and provide the basis for comparative information.

The project's design factors, costs, rights-of-way requirements for Lines 1 (the recommended alternate), 6, and 8 are shown in Appendix A, Figure 8. Appendix A, Figure 4 depicts the alignment of each of these alternatives.

Appendix A, Figure 10, shows several other alternative alignments that were considered in the earlier planning stages but were soon dropped from consideration.

A. Line 1

This is the selected alternative for this project and was described in the preceding sections.

B. Line 2

As a modification of Line 1, Line 2 proposes to utilize 12 lots in the Kona Heights Subdivision which were set aside by the developers for the

highway. This line is about 130 feet shorter than Line 1, but requires an additional horizontal curve. Line 2 is basically the same as Line 1 but since Line 1 has a safer intersection location with the Kona Heights access road and lower rights-of-way costs, Line 2 was dropped from consideration.

C. Line 3

Initially coincident with Lines 1 and 2, Line 3 then curves seaward through the Lono Kona Subdivision to a junction with the existing Kuakini Highway at the Hualalai intersection. Line 3 then proceeds south coincident with Lines 5 and 6 which will be described further in this section.

Line 3 was dropped from further consideration in early project stages for the following reasons:

1. It would require a grade of approximately 6 percent.
2. It would require a five legged intersection which is highly undesirable from the standpoint of safety.
3. It would impose interruptions and congestion on through traffic because of the stop and turning maneuvers required at the intersection.

4. It would affect a substantial number of parcels in the Lono Kona Subdivision.

D. Line 4

Diverging makai of Lines 1 and 2 near Hualalai Road, Line 4 then crosses over the old Kailua-Keauhou Middle road and continues south coincident with Lines 5, 6 and 7.

Line 4 was dropped from further consideration because it required a 6 percent grade and because its increased length over Line 1 or 2 could not be justified.

E. Line 5

This alternative represents an upgrading of the existing Kuakini Highway, and the realignment between Palani Road and Hualalai Road provides for continuity.

Line 5 diverges from the Queen Kaahumanu Highway a half mile northwest of the Palani Road intersection, crosses the Liliuokalani Trust Estate's industrial subdivision and descends to an alignment parallel to and just upland of the existing Kuakini Highway. From there, Line 5 essentially retraces and improves the existing highway.

Adoption of this alignment would entail abandonment of the half mile portion of the Queen Kaahumanu Highway and disruption of operations in the Liliuokalani Trust Estate's industrial subdivision. Line 5 was therefore eliminated from further consideration in early project stages.

F. Line 6

Beginning at the intersection of Palani Road and the Queen Kaahumanu Highway, Line 6 starts as a 2-lane facility (Appendix A, Figure 4) descending with a maximum grade of 4.2% to the Hualalai Road/Kuakini Highway intersection. An 800-foot radius curve near Palani Road is provided to minimize the effect of Line 6 on the Lono Kona Subdivision. From Hualalai Road, Line 6 continues as a 4-lane facility (Appendix A, Figure 6) generally following the existing alignment to Kealakowaa Heiau.

Since the existing Kuakini Highway has an 80-foot right-of-way width, a minimum of 40 feet more would be required for highway purposes. Thus, businesses and residences located on both sides of Kuakini Highway would be affected.

Noise levels and its associated problems would also increase due to traffic increases on the improved facility. Noise levels exceeded 10% of the time (L_{10}) are at present above Federal design standards and by 1995 this situation will probably worsen (refer to Appendix A, Figure 9).

Line 6 would also affect the Kailua Playground parking area but the sports facilities would not be affected.

The existing bougainvillia, plumeria and coconut trees alongside the highway would have to be removed and replanted.

In addition, if this alternative was implemented, the Department of Land and Natural Resources anticipates critical hydraulic problems for their future waterline.

Line 6 was one of the major alternates considered; however, it was not selected due primarily to these significant impacts.

G. Line 7

This alternate proceeds southerly from Palani Road through the upland end of the Lono Kona Subdivision to a parallel alignment adjacent to and seaward of the Great Wall of Kuakini. Passing between the Soil Conservation Service's Keopu

Flood Control Basin and the Thurston House Ruins, the line intersects Hualalai Road at the lower end of the Aloha Kona Subdivision, then proceeds on the seaward side of the Pacific Empress Corporation property to an intersection with the existing Kuakini Highway and Walua Road, at a point just seaward of the Kona Hillcrest Subdivision.

Line 7 was eliminated due to the social and environmental conflicts between Palani Road and Walua Road. For this portion, two lanes were proposed to occupy a 100-foot minimum right-of-way. Three residences plus the Kailuan and Kona Gardens condominium establishments were likely to be affected. Also, sections of the Great Wall of Kuakini and surrounding areas of the Thurston House Ruins would be disturbed to the extent of seriously impairing its historic value.

H. Line 8

Line 8 calls for strictly improving the existing facility. The existing Kuakini Highway would be widened to 4 lanes from Palani Road to Kealakowaa Heiau (see Appendix A, Figure 6).

The social and economic effects to businesses, residences, and churches along Kuakini Highway would be similar to Line 6, and consequently, Line 8 was also not selected.

I. Intersection and Safety Improvements

Another alternative is to construct only intersection and safety improvements along the existing Kuakini Highway. To improve safety, more superelevation was proposed for the reverse curve located between the Kona Hillcrest Subdivision and the Kealakowaa Heiau. Visual aids, such as highway lighting, pavement markers, striping, reflector markers and signing would be installed or improved as needed. For pedestrian safety, curbs, sidewalks and crosswalks would be provided from Palani Road to Hualalai Road. To increase the capacity of Kuakini Highway, intersection improvements would be implemented at Palani and Hualalai Roads.

This alternative was not selected since the proposed improvements would not effectively relieve the traffic congestion predicted for Kuakini Highway. Peak-hour volumes by 1995 would exceed the capacity of Kuakini Highway and periods of congestion are likely to be drawn-out thus becoming what may be an intolerable traffic situation. In order to meet future traffic demands, more lanes must be constructed.

The transportation element of the General Plan for North Kona would also not be implemented should an intersection and safety improvements alternative be adopted. Some orderly development as visualized in the General Plan may be inhibited.

J. No Improvement

A final alternative which was considered and also not selected, is the "do nothing" alternate. For this alternate, no improvements are proposed, and therefore, no businesses or residences would be impacted and no natural or historic resources would be expended.

However, the existing Kuakini Highway would be taxed beyond its capacity and traffic congestion would considerably worsen. Associated with this congestion, noise levels and air pollutant concentrations would increase (refer to Appendix A, Figure 9 and Appendix E), travel time and costs would be greater, and pedestrian safety would be lessened.

In addition, the transportation element of the General Plan for North Kona would not be implemented and this may inhibit the future orderly development of Kona.

VII. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Since the realigned sections will pass through an area which is in large part natural and untouched by development, it may create an unpleasant visual impact. Cuts and fills for the highway may detract from the naturally scenic quality of the countryside.

Grading operations will expose ground surfaces, and excessive erosion and water pollution may result. Since there are no surface water features in the area, water pollution and siltation will occur primarily at the shoreline during periods of heavy rainfall. However, this is not expected to be serious since ground surfaces are generally rocky and highly pervious.

Homes and establishments near the realigned sections or along the improved sections of existing highway will be subject to noise and dust problems normally associated with highway construction. After completion of the highway, the dust problem will be substantially reduced if not eliminated. Traffic noises will be generated by the new highway; and in areas where the highway is on a new alignment, these noises may be a new source of irritation to the nearby residents.

The limited cattle ranching activity which now exists will be affected in that some pastures may be divided or reduced in size, or access to them disrupted. However, it is not expected that these effects will be serious.

Generally, the runoff in this region flows overland in undefined water courses with little or no erosion. The drainage pattern may be changed due to the construction of culverts that may concentrate flows, thus causing more erosion and adversely impacting some localized areas.

The Great Wall of Kuakini and the Kona Field System will be adversely affected by this project. Line 1 will breach the Great Wall at one location and remnant sections of the field system may be destroyed. However, the highway impact is expected to be mitigated through the provisions of the Memorandum of Agreement (refer to attached Section 4(f) Statement).

VIII. MITIGATION MEASURES FOR UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

- A. The visual prominence of the proposed highway will be subdued by balancing and minimizing cuts and fills where possible.
- B. The unused portion of the right-of-way will be cleared, and as early as possible, these roadside areas will be landscaped for aesthetic and erosion control purposes.
- C. Procedural and standard measures contained in the State's "Standard Specifications for Road and Bridge Construction" will insure the minimization of erosion and water pollution. A copy of Section 639, pertaining to water pollution control during construction is included in Appendix C. Field inspections will be conducted during construction.
- D. If a borrow/spoil site is required, it will be carefully screened to avoid any adverse environmental effects. After completion of work, the site will be graded to blend with the natural topography and planted to minimize soil erosion.
- E. Air pollution resulting from highway construction activity is always a possibility. Specific measures include, where applicable, nonburning techniques for the disposal of grubbed debris.

Measures such as watering, use of dust palliatives, restricting the area of operation, paving of construction lanes and curtailing of activities during dry and/or strong wind conditions will be taken to minimize dust problems during construction.

- F. The inconvenience of construction noise pollution will be minimized by scheduling heavy construction work during daylight hours. The recommended alternative, Line 1, meets the federal noise criteria and no mitigation measures are contemplated at this time.
- G. Inconvenience to motorists, pedestrians and abutting property owners will be minimized during construction. The construction contracts will contain plans for the maintenance of traffic flow. Such plans will include phasing of construction, temporary detours, temporary signing and safety features for public protection.
- H. The effect of the project on the limited cattle ranching operations which now exist will be minimized by restoring fencing and corrals to their pre-project effectiveness, and providing adequate access in the event sections of pastures are isolated by the project. If adequate access cannot be provided, the owners/ranchers will be compensated for their losses.

- I. The point concentration of runoff will be minimized by designing the drainage system on the basis of an estimated 50-year recurrence interval storm and by providing a sufficient number of culverts that will be carefully spaced to spread the flow. To further prevent scouring and excessive erosion, culverts may be designed to reduce flow velocity and eddying currents. In addition, the drainage facilities will be evaluated based on a 100-year storm.
- J. To insure that historic sites or artifacts not yet known to exist in this area are not inadvertently destroyed by the project, an archaeological survey will be undertaken prior to construction and appropriate measures taken as dictated by the survey. In addition, the requirements of the Memorandum of Agreement contained in the attached Section 4(f) report will insure that impacts to historical sites will be minimized.
- K. Other control measures, unique to the project, can be included as part of the contract's special provisions.

- L. This project will be constructed in compliance with all Federal, State, City and County environmental control laws, ordinances, rules and regulations in effect at the time of construction.

IX. RELATIONSHIP BETWEEN SHORT-TERM ENVIRONMENTAL USES AND
THE MAINTENANCE OF LONG-TERM PRODUCTIVITY

The project will be consistent with the Queen Kaahumanu Highway in incorporating the latest design standards and safety features. The built-in safety aspects along with reduced congestion will reduce the number of accidents within the traffic corridor.

Each considered alignment will, to varying degrees, improve the efficiency of operation of the motor vehicle system, thereby enhancing the immediate development potential of Kailua-Kona. But the most marked effect of this improvement is on long-range planning for Kailua-Kona.

The by-passing route will open new lands upland of Kailua-Kona for eventual development. As economic pressures dictate, these lands could be developed. The new urban boundary effectuated by the new highway would be amply removed from the activities center so as to promote orderly and lasting development.

Clearly this project will permit an extensive growth of Kailua-Kona since more area is provided within its distinct boundaries. The proposed highway which closely approximates the alignment master planned by the County of Hawaii Planning Department, will do

the most to encourage orderly and meaningful long-range urban planning for the rapidly growing Kailua-Kona area.

Orderly development will result in increased economic activity and will therefore have a favorable effect on the County's tax base.

X. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

In addition to the commitment of labor and fuel energy expended, construction of the proposed project will permanently commit the right-of-way to transportation and utilities uses. Abutting lands now vacant or in marginal livestock grazing uses will probably be put to higher urban or recreational uses as a direct consequence of the construction of the new alignment.

Other resources such as water, botanical and wildlife will not be seriously affected. As previously pointed out surface water features do not exist in the project area, vegetation consists only of very common and hardy species of brush and trees, and little wildlife is found in the area because of the relative closeness of the urban area.

XI. IMPACT ON PROPERTIES AND SITES OF HISTORIC AND CULTURAL SIGNIFICANCE

No sites included in the National Register of Historic Places and the Hawaii Register of Historic Places are affected by the proposed highway.

However, the Great Wall of Kuakini and the Kona Field System, as described in the Historic Properties Report, are both eligible for the National Register and will be adversely affected by this project. A full description of the project's impact on these sites is contained in the attached Section 4(f) Statement which also contains a Memorandum of Agreement prepared pursuant to Title 36 CFR part 800.

The Section 4(f) Statement also contains correspondences relating to the coordination of historical matters.

XII. COORDINATION

This project is being closely coordinated with all agencies who have an interest in the proposed highway improvement.

- A. Coordination has been established with the Planning Department of the County of Hawaii to insure that this project is consistent with the transportation element of the General Plan for North Kona District.
- B. Clearance of land and natural resources interests have been effectuated through the Department of Land and Natural Resources (see Appendix D).
- C. The Soil Conservation Service has coordinated the Keopu Flood Control Project with this Department.
- D. The State Historic Preservation Officer will be further consultated concerning historic resources in the project vicinity.
- E. The State Department of Health has reviewed this project with respect to air and water quality impacts.
- F. A corridor public hearing was held in Kailua-Kona on July 9, 1970 to receive testimony and evidence relating to the location, design, social, economic and environmental aspects of this project. Testimonies at that time were unanimously in favor of the by-passing alignment, Line 1.

- G. A second public hearing was also conducted on July 8, 1976 to apprise the people of Kailua-Kona of the recent developments of this project and to further solicit their comments.

The responses received at this hearing heavily favored the selected alternative, Line 1 (see Appendix J for a summary of this hearing).

- H. In accordance with Chapter 343, Hawaii Revised Statutes, an EIS Preparation Notice was sent to various community organizations and public agencies on October 6, 1975. All of the correspondences resulting from the notice are included in Appendix H.
- I. Copies of the project draft EIS were distributed to the various organizations and agencies that are listed in Appendix G. Comments and responses concerning the draft EIS are provided in Appendix I.
- J. The draft EIS was filed with the State Office of Environmental Quality Control on March 10, 1976 and with the Council of Environmental Quality on March 9, 1976.

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LIST OF APPENDICES

- A. Figures
- B. Conceptual Stage Relocation Program
- C. Section 639 - Temporary Water Pollution Control (Soil Erosion)
- D. Department of Land and Natural Resources - Clearance
- E. Air Quality
- F. Water Quality - DOH
- G. Draft EIS and EIS Preparation Notice Mailing List
- H. Comments - EIS Preparation Notice
- I. Comments and Evaluations - Draft EIS
- J. Comments and Evaluations - Public Hearing
- K. List of Required Approvals

APPENDIX A

FIGURES

1. Location Map
2. Existing Land Use District Boundaries
3. County General Plan and Land Use Maps
 - A. Land Use Map
 - B. Urban Zone Map (Kailua)
 - C. Urban Zone Map (Kailua-Honalo)
 - D. Facilities Map
 - E. General Plan
4. Alternatives
5. Typical Section - 2 lane, Line 6
6. Typical Section - 4 lane
7. Typical Section - 2 lane, Line 1 (Recommended)
8. Comparative Data
9. Noise Data and Location
10. Other Alternatives Considered
11. Traffic Assignment
12. Tabulation of Accident Data and Comparison With Similar Facility

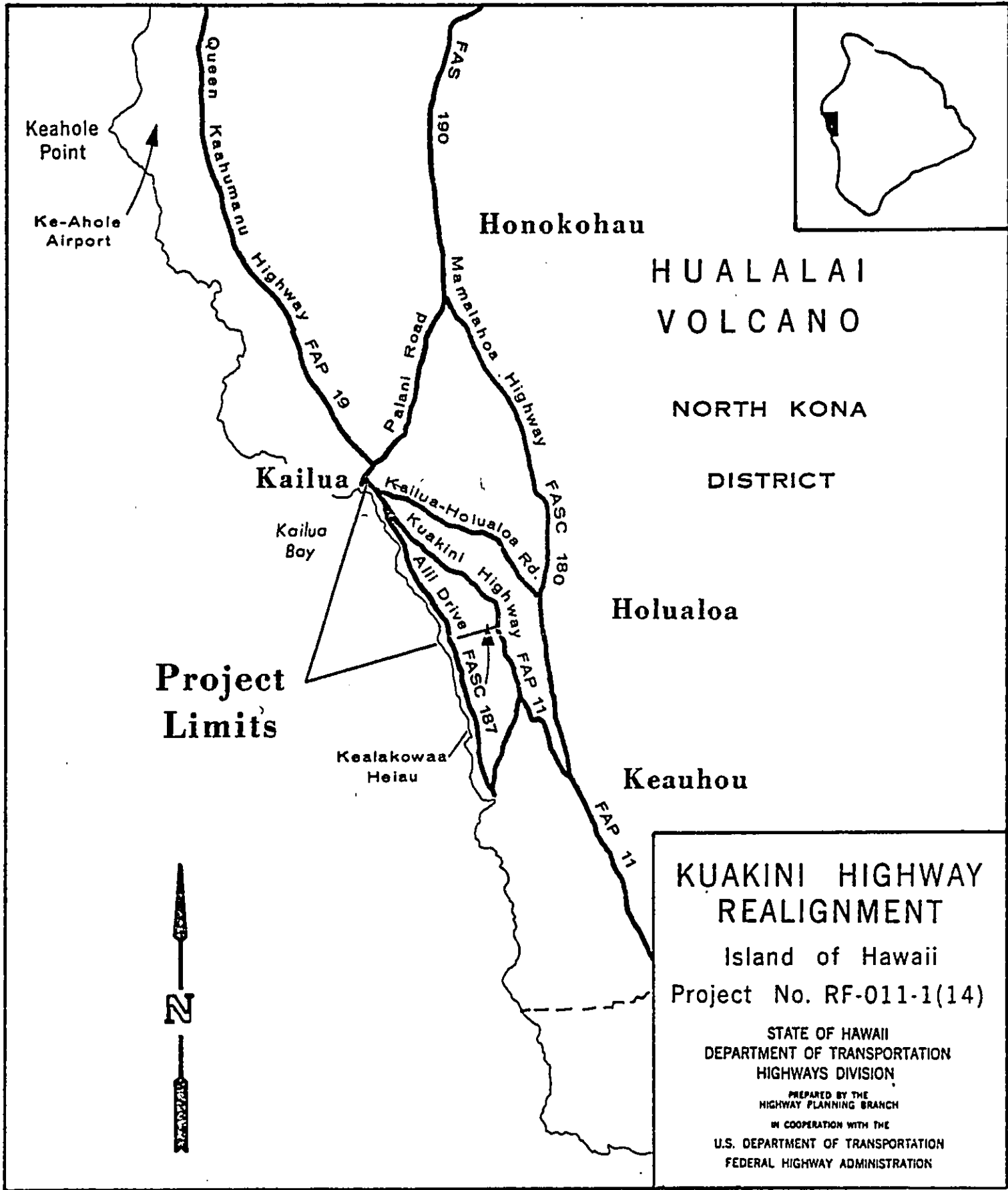
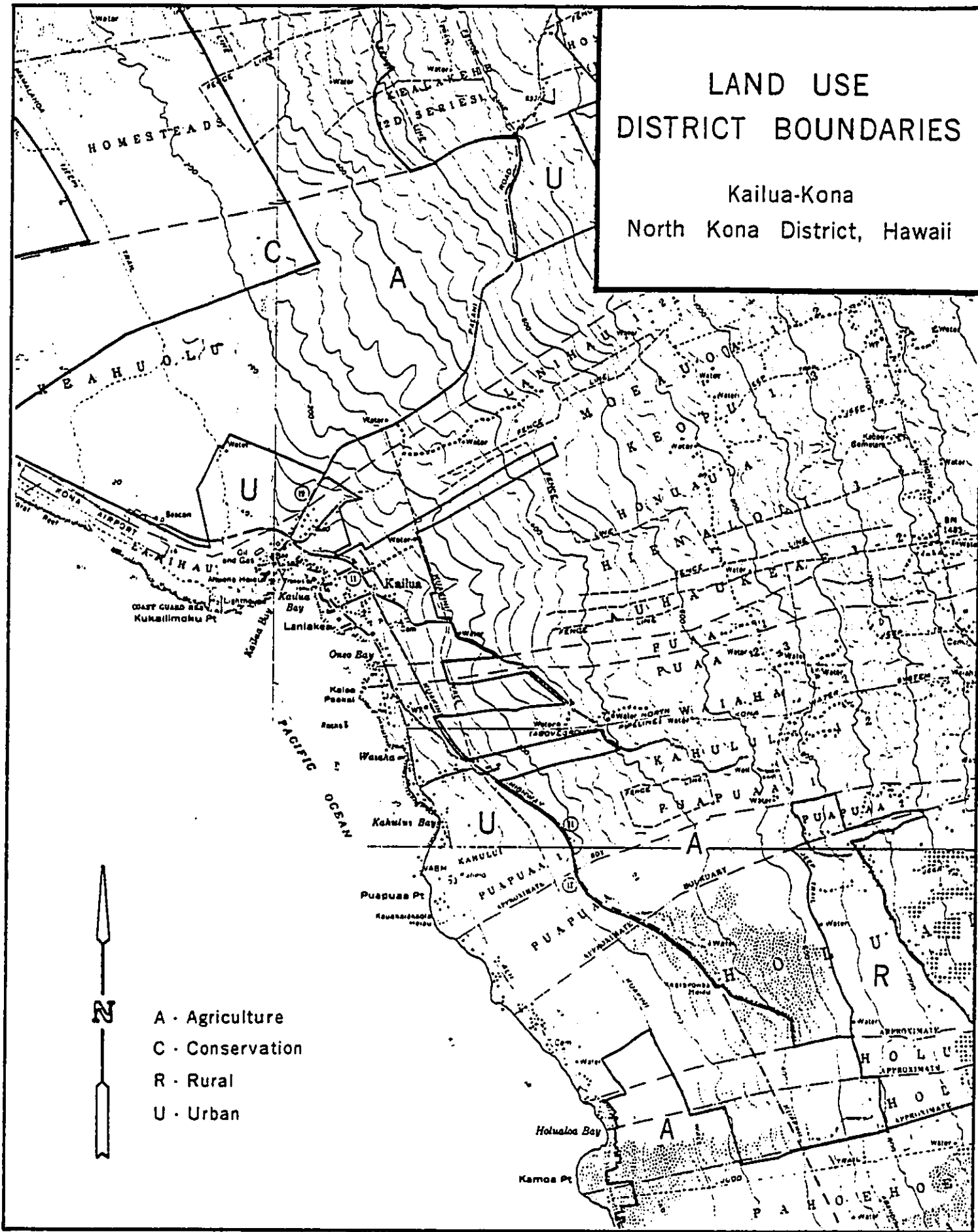
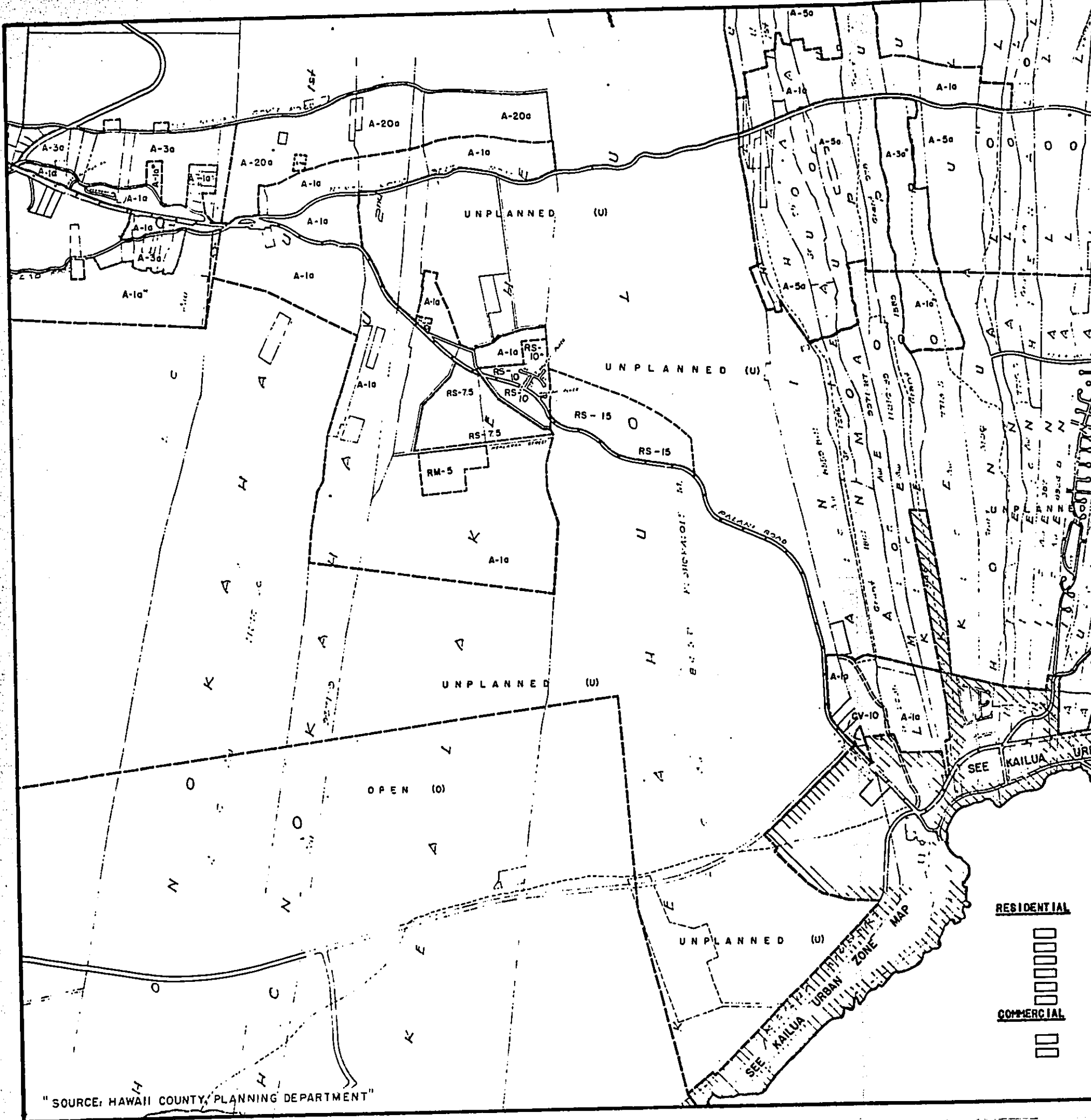


Figure 1



Source: State of Hawaii, Land Use Commission
Department of Planning & Economic Development

Figure 2



"SOURCE: HAWAII COUNTY PLANNING DEPARTMENT"



ZONE MAP

TIAL
 UUUUUU
 TIAL
 UUUUUU

RS-7.5	SINGLE-FAMILY	7,500 SQ. FT.
RS-10	SINGLE-FAMILY	10,000 SQ. FT.
RS-15	SINGLE-FAMILY	15,000 SQ. FT.
RD-3.75	DOUBLE-FAMILY	3,750 SQ. FT./UNIT
RM-1.25	MULTIPLE-FAMILY	1,250 SQ. FT./UNIT
RM-F	MULTIPLE-FAMILY	5,000 SQ. FT./UNIT

CN-10	NEIGHBORHOOD-COMMERCIAL	10,000 SQ. FT.
CV-10	VILLAGE-COMMERCIAL	10,000 SQ. FT.

AGRICULTURE

	A-1a	AGRICULTURE	1 ACRE
	A-9a	AGRICULTURE	3 ACRES
	A-5a	AGRICULTURE	5 ACRES
	A-20a	AGRICULTURE	20 ACRES

UNPLANNED

	U	UNPLANNED
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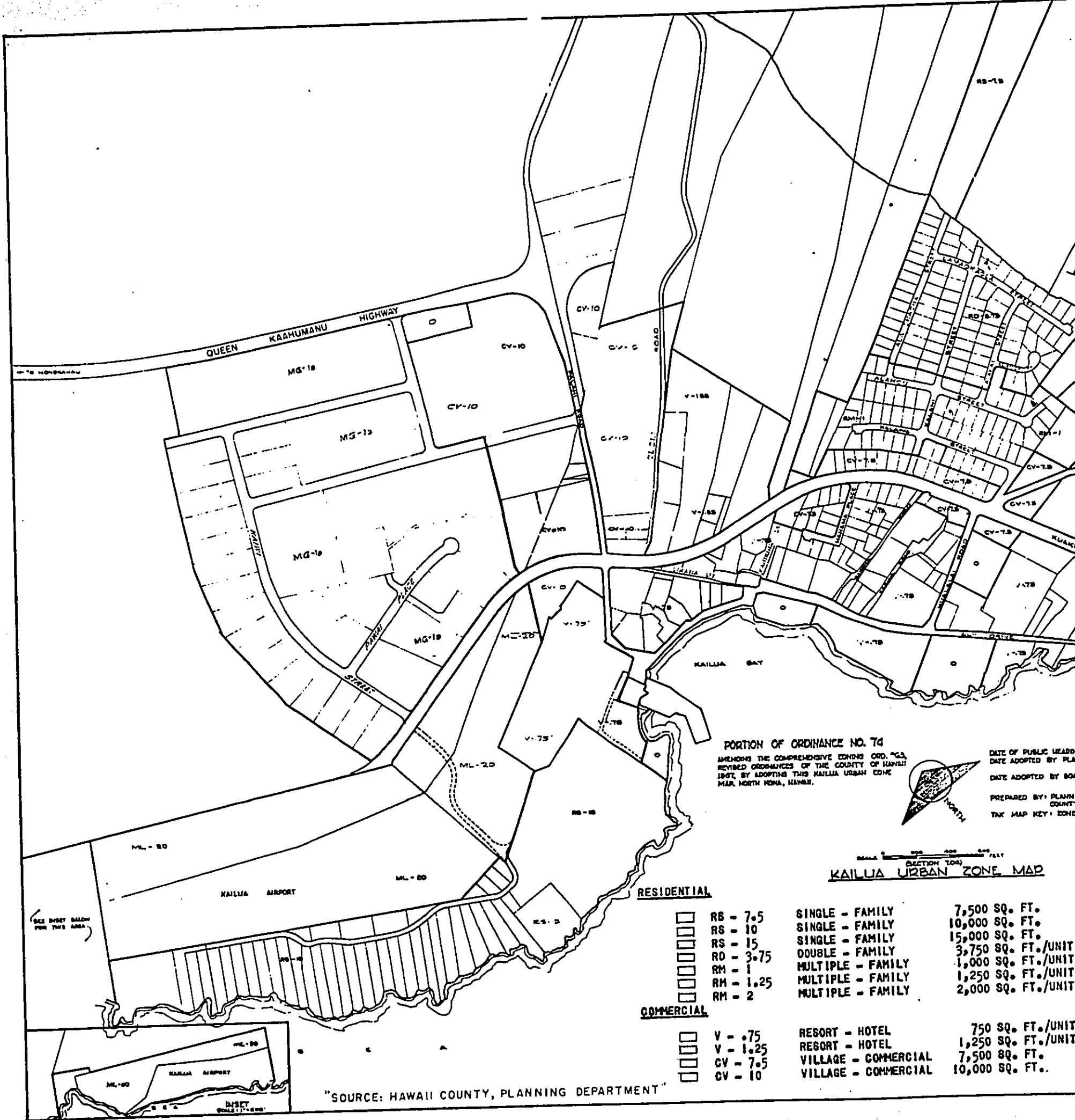
OPEN

	O	OPEN
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FOREST RESERVE

	F/R	FOREST RESERVE
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FIGURE 3 A



PORTION OF ORDINANCE NO. 74
 AMENDING THE COMPREHENSIVE ZONING ORD. '63,
 REVISED ORDINANCES OF THE COUNTY OF HAWAII
 1967, BY ADOPTING THIS KAILUA URBAN ZONE
 MAP, NORTH HONOLULU, HAWAII.

DATE OF PUBLIC HEARING
 DATE ADOPTED BY PLANNING BOARD
 DATE ADOPTED BY BOARD OF SUPERVISORS
 PREPARED BY: PLANNING DEPARTMENT
 COUNTY OF HAWAII
 TAX MAP KEY: ZONING



SCALE 0 200 400 600 800 FEET
 SECTION 1000
KAILUA URBAN ZONE MAP

RESIDENTIAL

- RB - 7.5
- RS - 10
- RS - 15
- RD - 3.75
- RM - 1
- RM - 1.25
- RM - 2

- SINGLE - FAMILY 7,500 SQ. FT.
- SINGLE - FAMILY 10,000 SQ. FT.
- SINGLE - FAMILY 15,000 SQ. FT.
- DOUBLE - FAMILY 3,750 SQ. FT./UNIT
- MULTIPLE - FAMILY 1,000 SQ. FT./UNIT
- MULTIPLE - FAMILY 1,250 SQ. FT./UNIT
- MULTIPLE - FAMILY 2,000 SQ. FT./UNIT

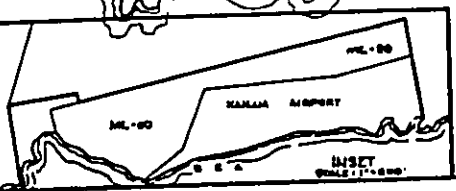
COMMERCIAL

- V - .75
- V - 1.25
- CV - 7.5
- CV - 10

- RESORT - HOTEL 750 SQ. FT./UNIT
- RESORT - HOTEL 1,250 SQ. FT./UNIT
- VILLAGE - COMMERCIAL 7,500 SQ. FT.
- VILLAGE - COMMERCIAL 10,000 SQ. FT.

"SOURCE: HAWAII COUNTY, PLANNING DEPARTMENT"

SEE INSET BELOW FOR THIS AREA



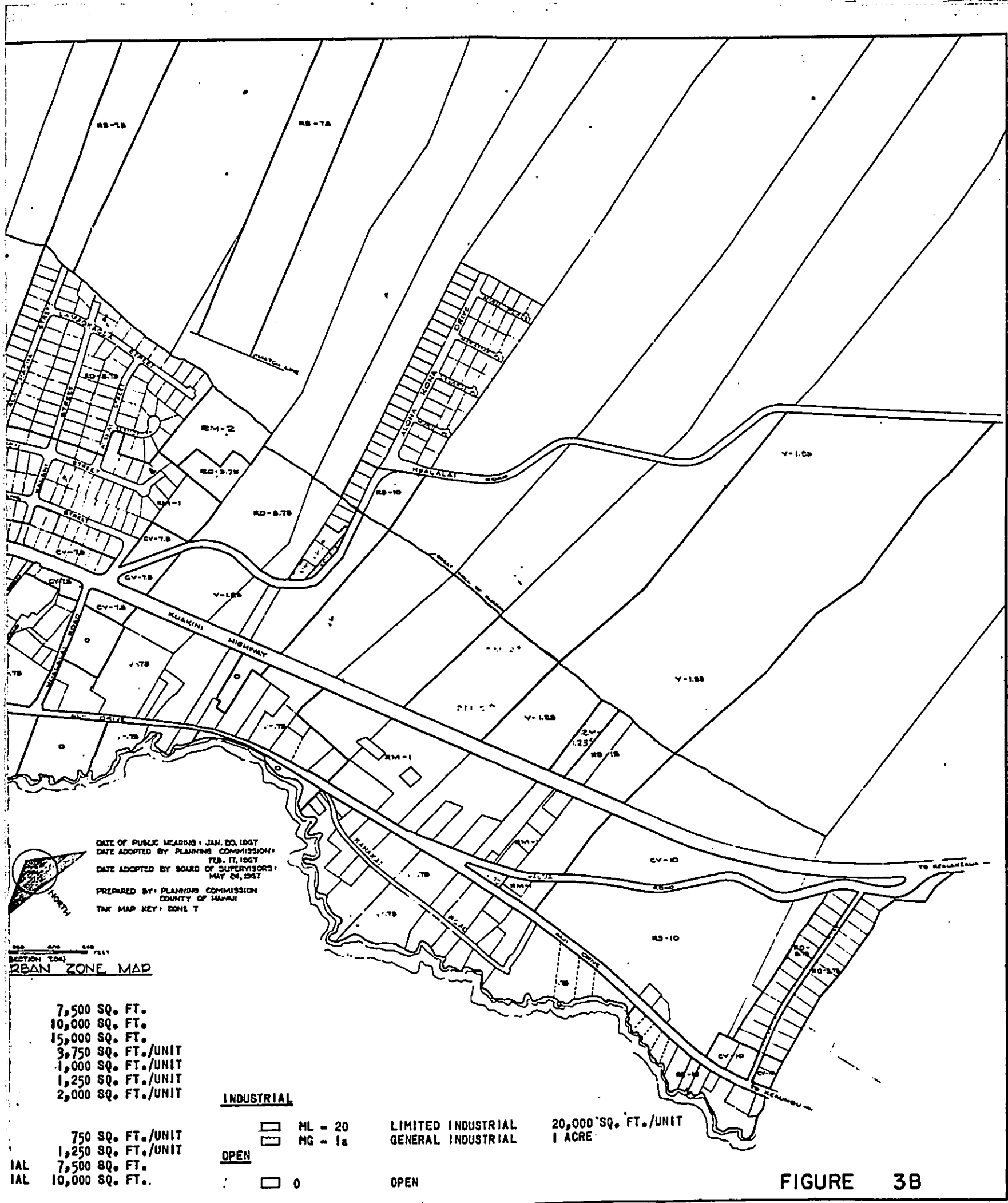
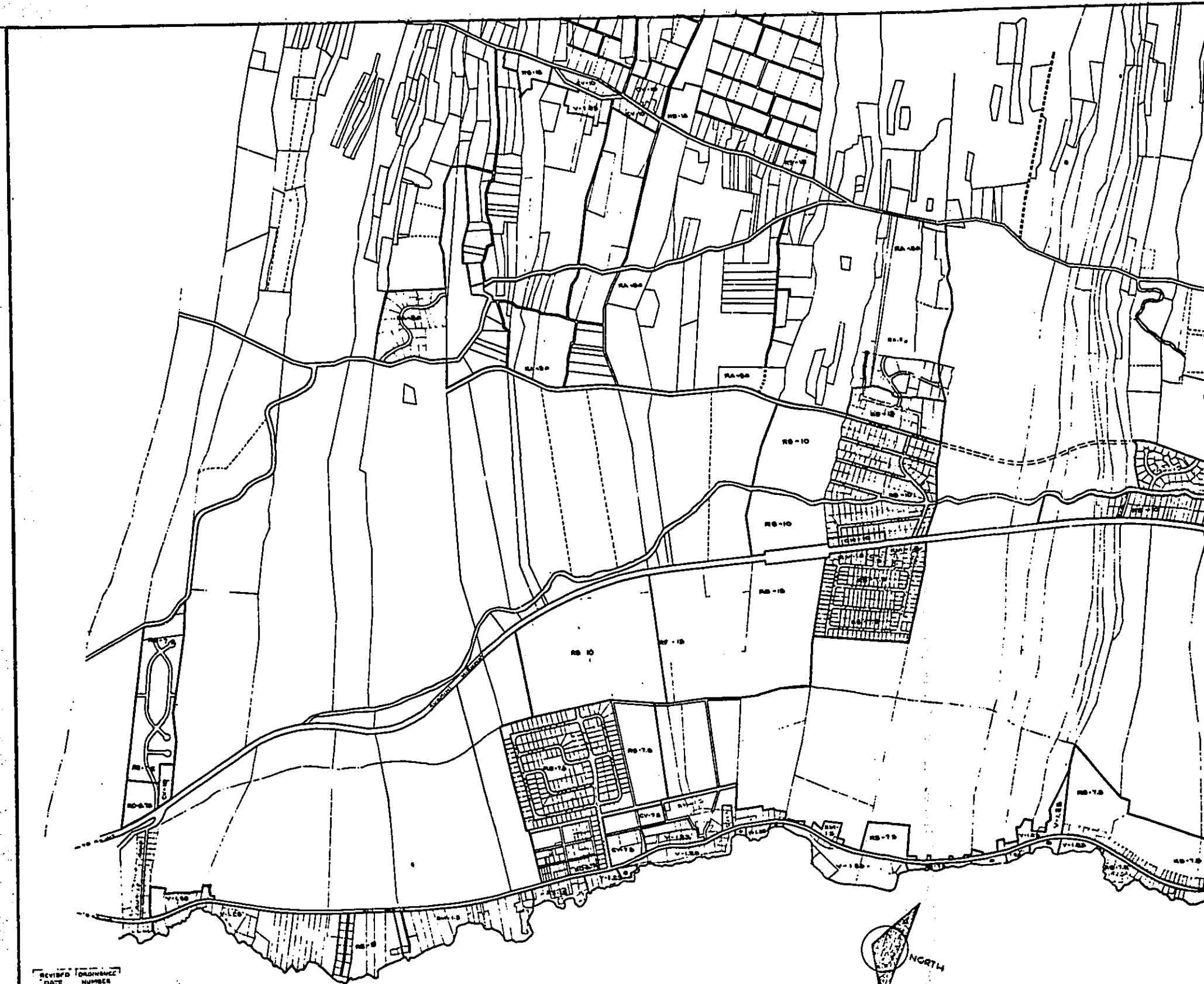


FIGURE 3B



"SOURCE: HAWAII COUNTY, PLANNING DEPARTMENT"

REVISED DATE	ORDINANCE NUMBER
8-15-66	125
8-1-66	151
11-29-66	166
11-20-66	170
2-27-67	233
1-22-67	234
10-22-67	287
12-18-67	288
8-31-71	419
8-31-71	420
11-2-71	421
8-27-72	477
1-10-73	517
1-10-73	518
1-10-73	519
1-10-73	520
1-10-73	521

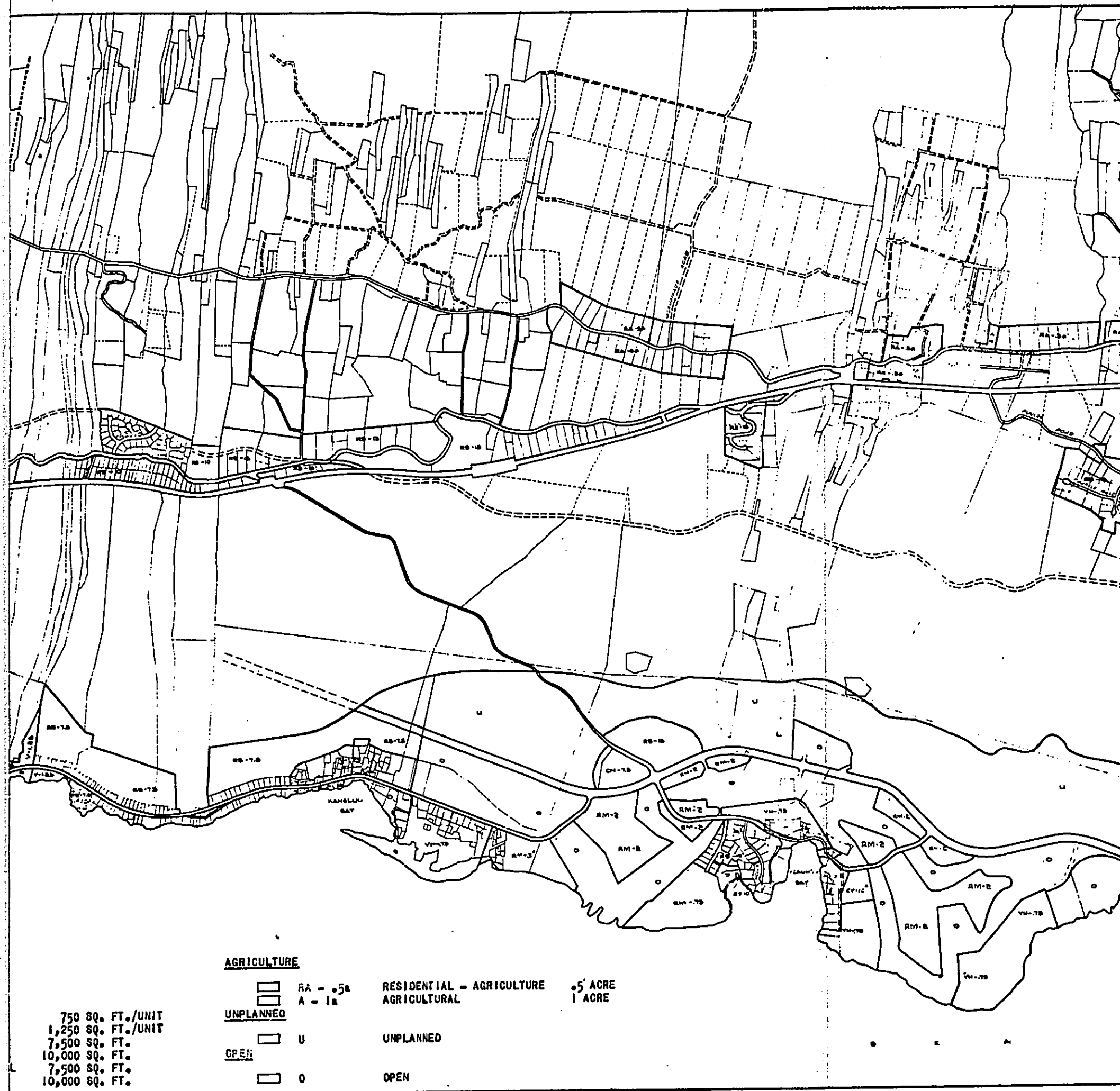
RESIDENTIAL

	RB - 7.5	SINGLE - FAMILY	7,500 SQ. FT.
	RB - 10	SINGLE - FAMILY	10,000 SQ. FT.
	RB - 15	SINGLE - FAMILY	15,000 SQ. FT.
	RM - .75	MULTIPLE - FAMILY	750 SQ. FT./UNIT
	RM - 1.5	MULTIPLE - FAMILY	1,500 SQ. FT./UNIT
	RM - 2	MULTIPLE - FAMILY	2,000 SQ. FT./UNIT
	RM - 3	MULTIPLE - FAMILY	3,000 SQ. FT./UNIT
	RD - 3.75	DOUBLE - FAMILY	3,750 SQ. FT./UNIT

COMMERCIAL

	VH - .75	RESORT - HOTEL	750 SQ. FT./UNIT
	V - 1.25	RESORT - HOTEL	1,250 SQ. FT./UNIT
	CV - 7.5	VILLAGE - COMMERCIAL	7,500 SQ. FT.
	CV - 10	VILLAGE - COMMERCIAL	10,000 SQ. FT.
	CN - 7.5	NEIGHBORHOOD - COMMERCIAL	7,500 SQ. FT.
	CN - 10	NEIGHBORHOOD - COMMERCIAL	10,000 SQ. FT.





750 SQ. FT./UNIT
 1,250 SQ. FT./UNIT
 7,500 SQ. FT.
 10,000 SQ. FT.
 7,500 SQ. FT.
 10,000 SQ. FT.

AGRICULTURE

RA - 0.5a
 A - 1a

UNPLANNED

U

OPEN

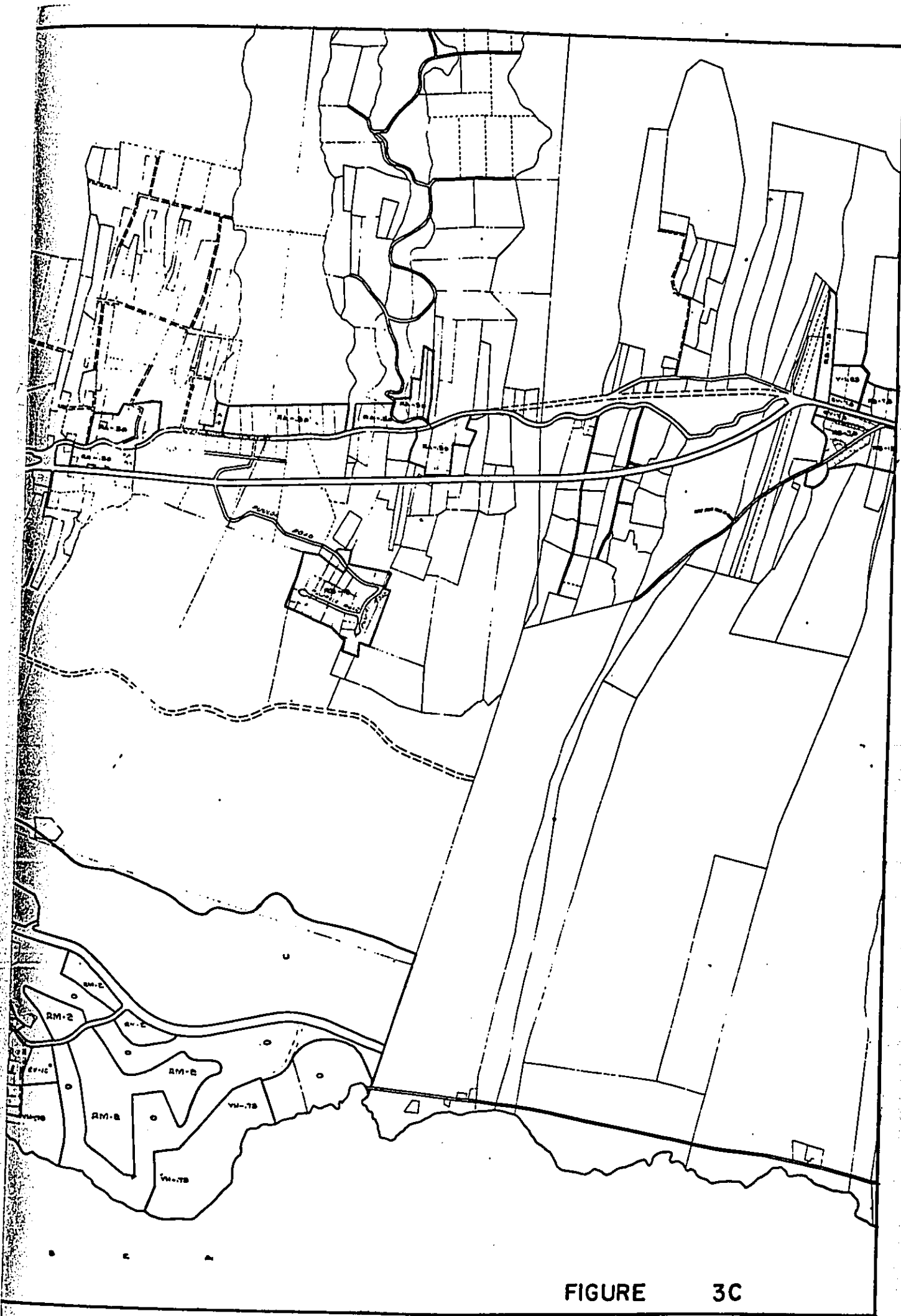
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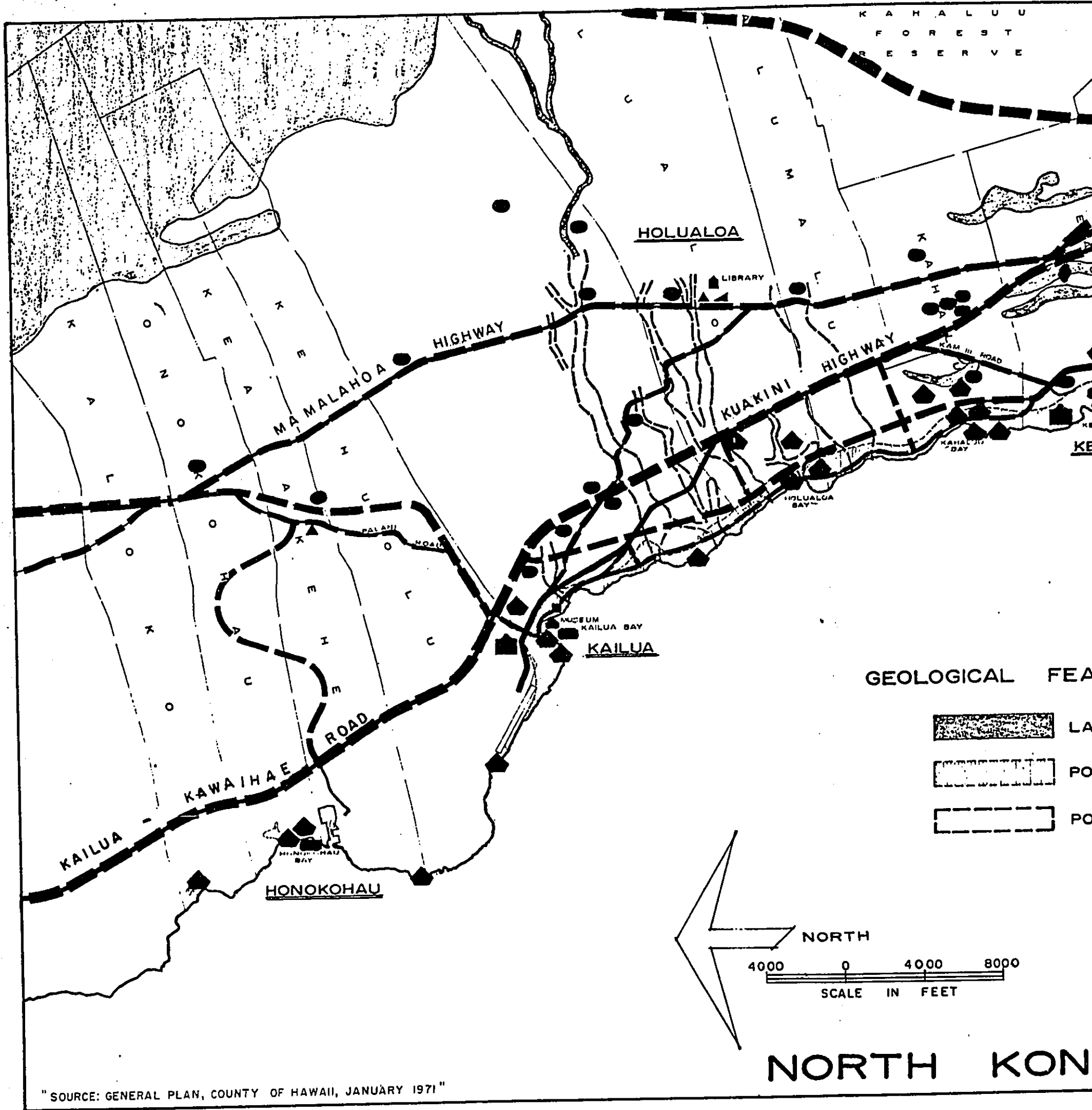
RESIDENTIAL - AGRICULTURE 0.5 ACRE
 AGRICULTURAL 1 ACRE

UNPLANNED

OPEN

O E A





KAHALUU
FOREST
RESERVE

HOLUALOA

LIBRARY

HIGHWAY

HIGHWAY

KUAKINI

MAMALAHOA

KAILUA


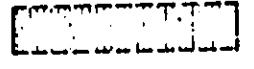

KAWAIIHAE

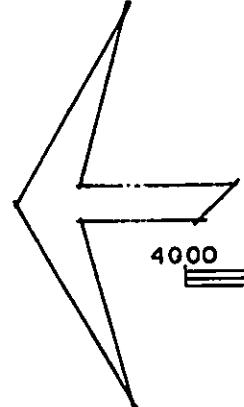
ROAD

MUSEUM
KAILUA BAY
KAILUA

HONOKOHAU

GEOLOGICAL FEAT

-  LA
-  PO
-  PO

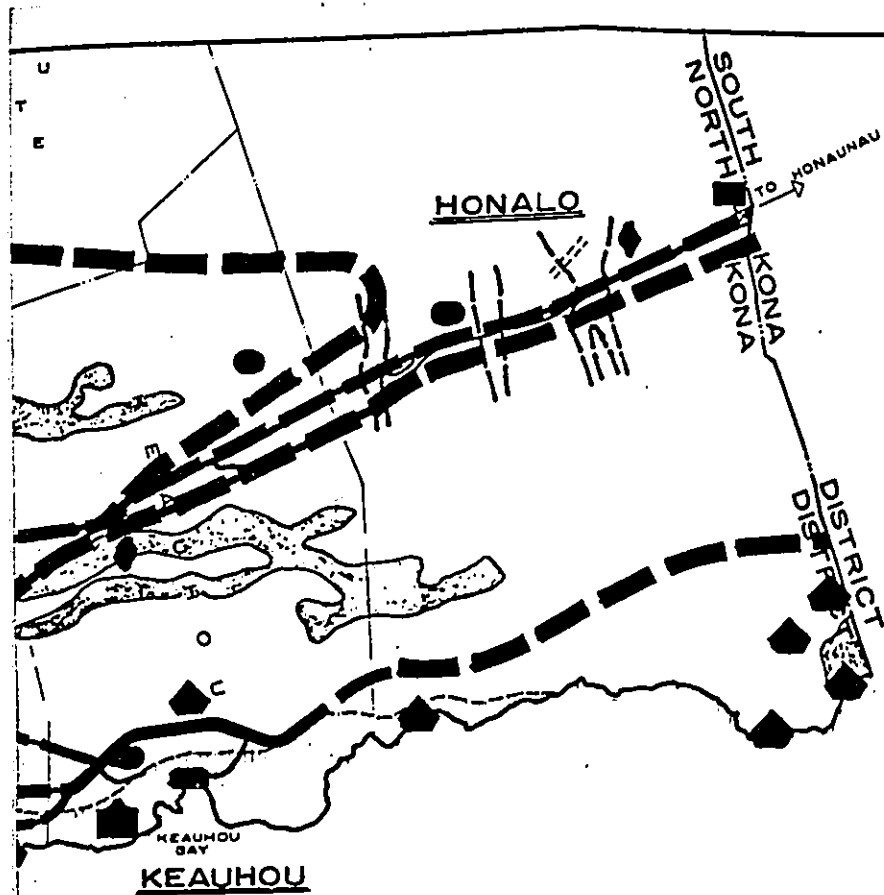


NORTH

4000 0 4000 8000
SCALE IN FEET

NORTH KON

"SOURCE: GENERAL PLAN, COUNTY OF HAWAII, JANUARY 1971"



FACILITIES MAP

PUBLIC & CULTURAL FACILITIES, PUBLIC UTILITIES & SAFETY AND TRANSPORTATION

- ▲ ELEMENTARY, ▲ INTERMEDIATE,
- CIVIC CENTER
- FIRE STATION
- HOSPITAL
- ◆ HISTORICAL SITES
- ▲ LIBRARY OR MUSEUM
- WATER TANKS, RESERVOIRS, SPRINGS
- SEWER (TREATMENT PLANTS)
- ◆ ELECTRICITY (PLANTS)
- DRAINAGE (CHANNELS)
- WHARF OR HARBOR
- ▭ AIRPORT TERMINAL

FEATURES

- ▨ LANDS OF 20% SLOPE OR OVER
- ▨ POTENTIAL TSUNAMI INUNDATION AREAS
- ▨ POTENTIAL FLOOD HAZARD AREAS

CIRCULATION :

- PRIMARY ARTERIAL
- SECONDARY ARTERIAL
- COLLECTOR STREET

EXISTING



KONA DISTRICT

S

MAP

AL FACILITIES, PUBLIC TY AND TRANSPORTATION

TARY,  INTERMEDIATE,  HIGH SCHOOL

ENTER

ATION

L

AL SITES

OR MUSEUM

TANKS, RESERVOIRS, SPRINGS (COUNTY)

(TREATMENT PLANTS)

CITY (PLANTS)

GE (CHANNELS)

OR HARBOR

TERMINAL










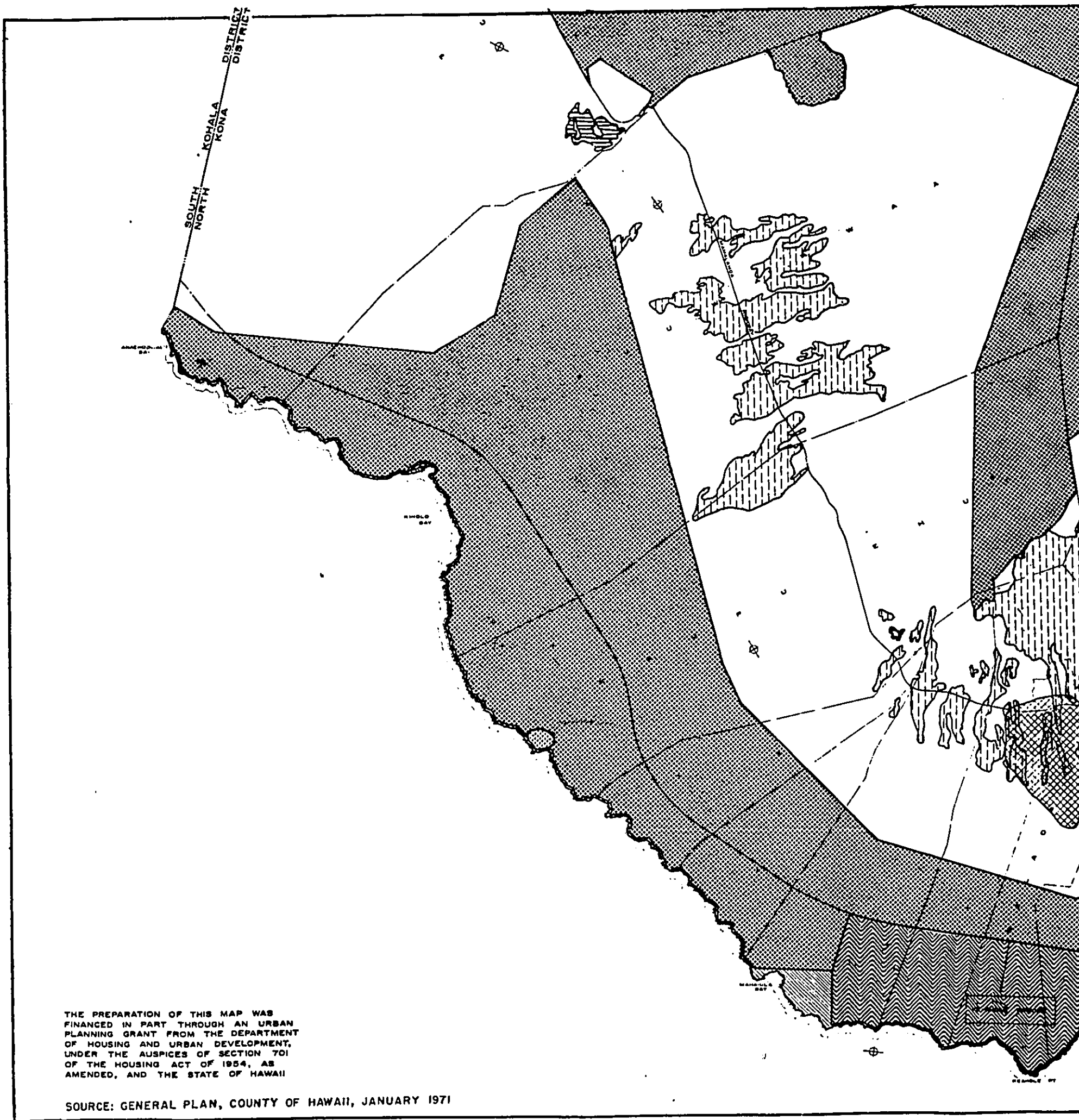
	EXISTING	IMPROVE	PROPOSED
ARTERIAL			
ARY ARTERIAL			
OR STREET			

FIGURE 3D



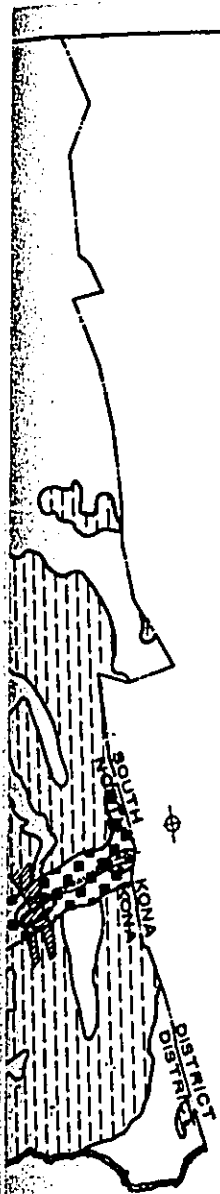
THE PREPARATION OF THIS MAP WAS FINANCED IN PART THROUGH AN URBAN PLANNING GRANT FROM THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, UNDER THE AUSPICES OF SECTION 701 OF THE HOUSING ACT OF 1954, AS AMENDED, AND THE STATE OF HAWAII




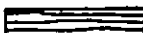
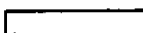
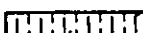



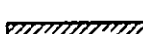

SOURCE: GENERAL PLAN, COUNTY OF HAWAII, JANUARY 1971



ORDINANCE NO. 439
 REPEALING ORDINANCE NO. 317
LAND USE ALLOCATION MAP
COUNTY OF HAWAII
GENERAL PLAN
 DATE OF PUBLIC HEARING: JULY 9, 1971
 DATE OF APPROVAL: DECEMBER 22, 1971
 PREPARED BY: PLANNING DEPARTMENT
 COUNTY OF HAWAII

NORTH KONA DISTRICT



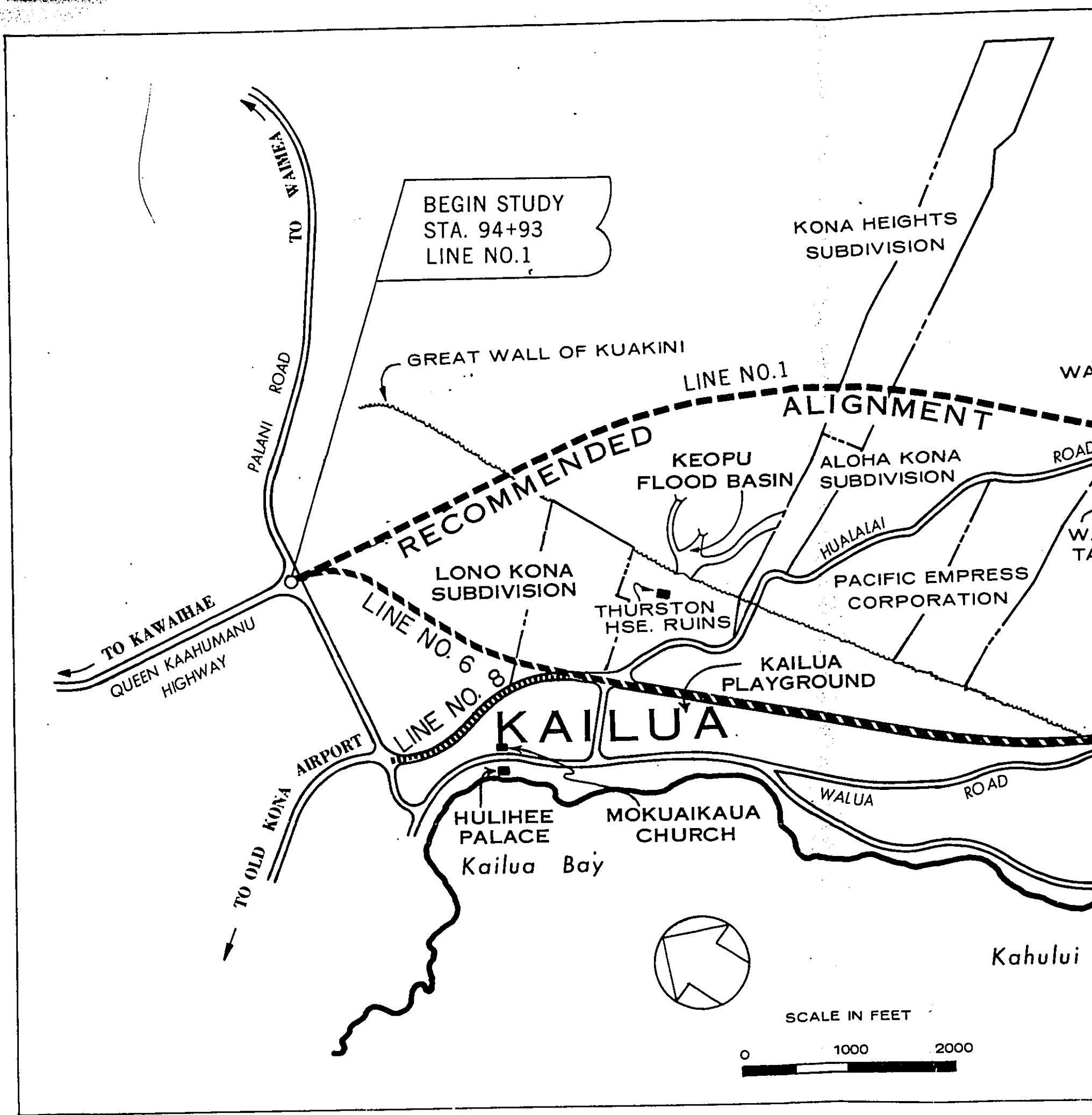
-  MEDIUM DENSITY
-  LOW DENSITY
-  INDUSTRIAL
-  INTENSIVE AGRICULTURAL
-  EXTENSIVE AGRICULTURAL
-  ORCHARDS
-  RESORT
-  OPEN AREA
-  CONSERVATION
-  FLOOD PLAIN
-  ALTERNATE URBAN EXPANSION
(LOW, MEDIUM, & HIGH DENSITY USES ONLY)

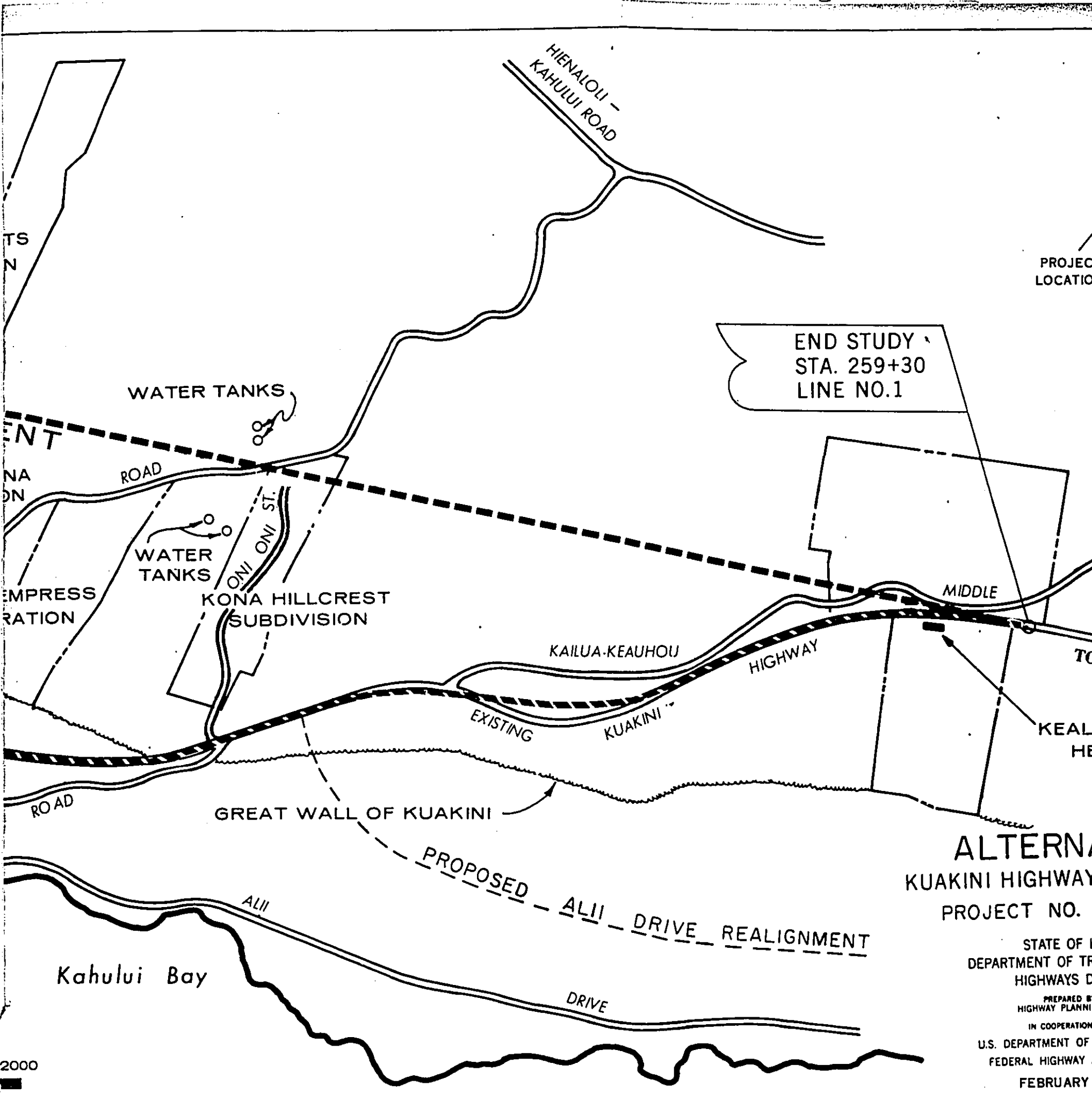
CASE NO. 439
 ORDINANCE NO. 317
 LOCATION MAP
 OF HAWAII
 ZONING PLAN

HEARING: JULY 6, 1971
 DECEMBER 22, 1971
 PLANNING DEPARTMENT
 COUNTY OF HAWAII

DISTRICT

FIGURE 3E





END STUDY
 STA. 259+30
 LINE NO.1

**ALTERNATE
 KUAKINI HIGHWAY
 PROJECT NO. 1**

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 PREPARED BY
 HIGHWAY PLANNING
 IN COOPERATION
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 FEBRUARY 1964

2000

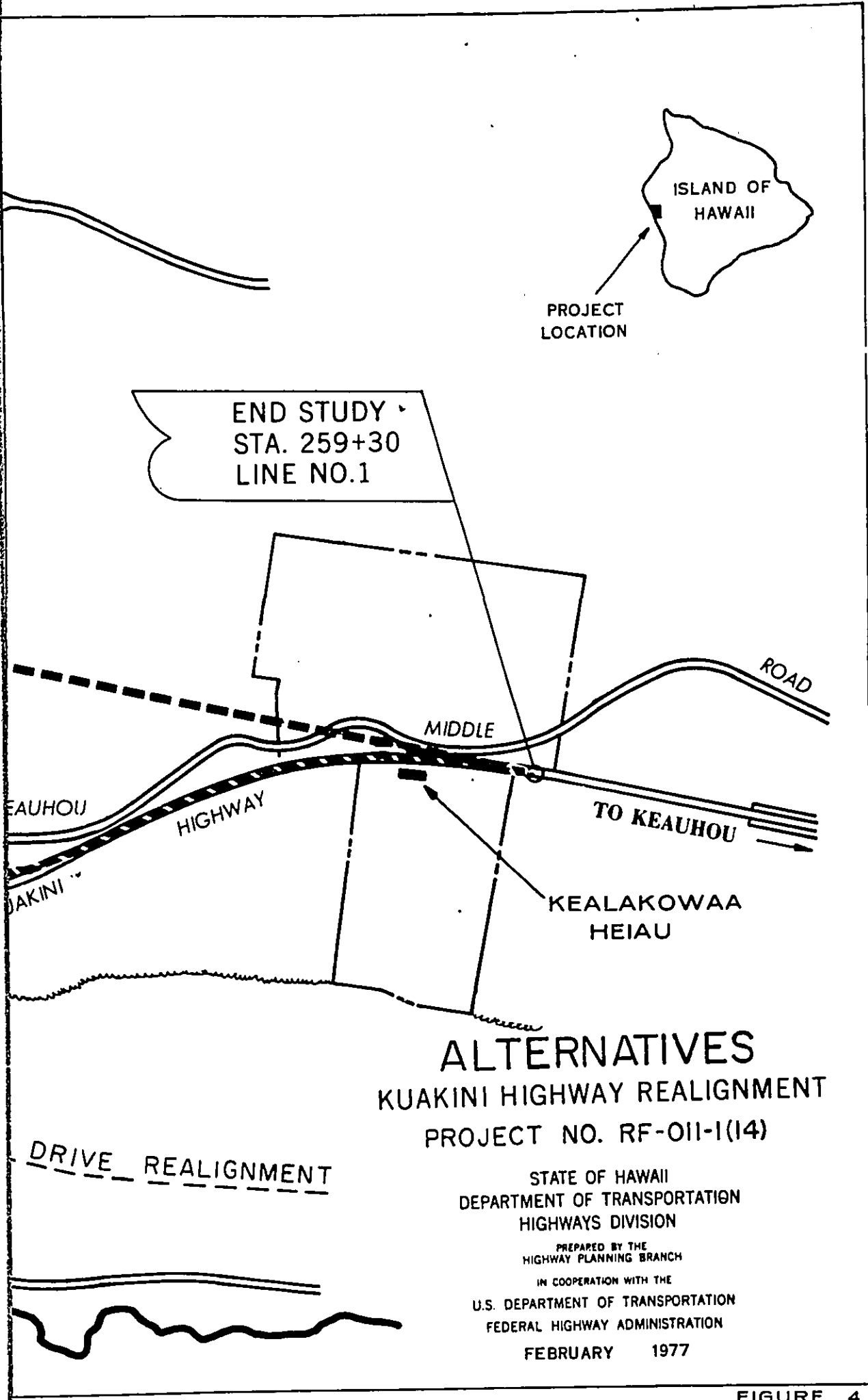
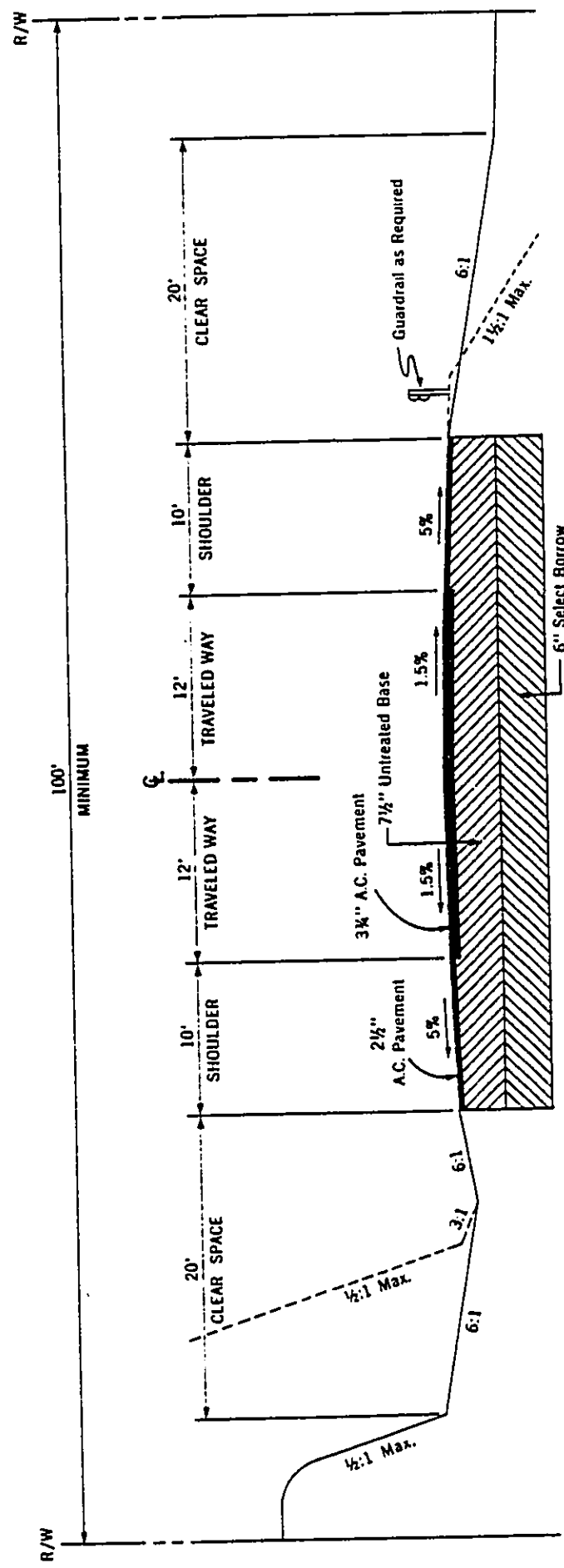
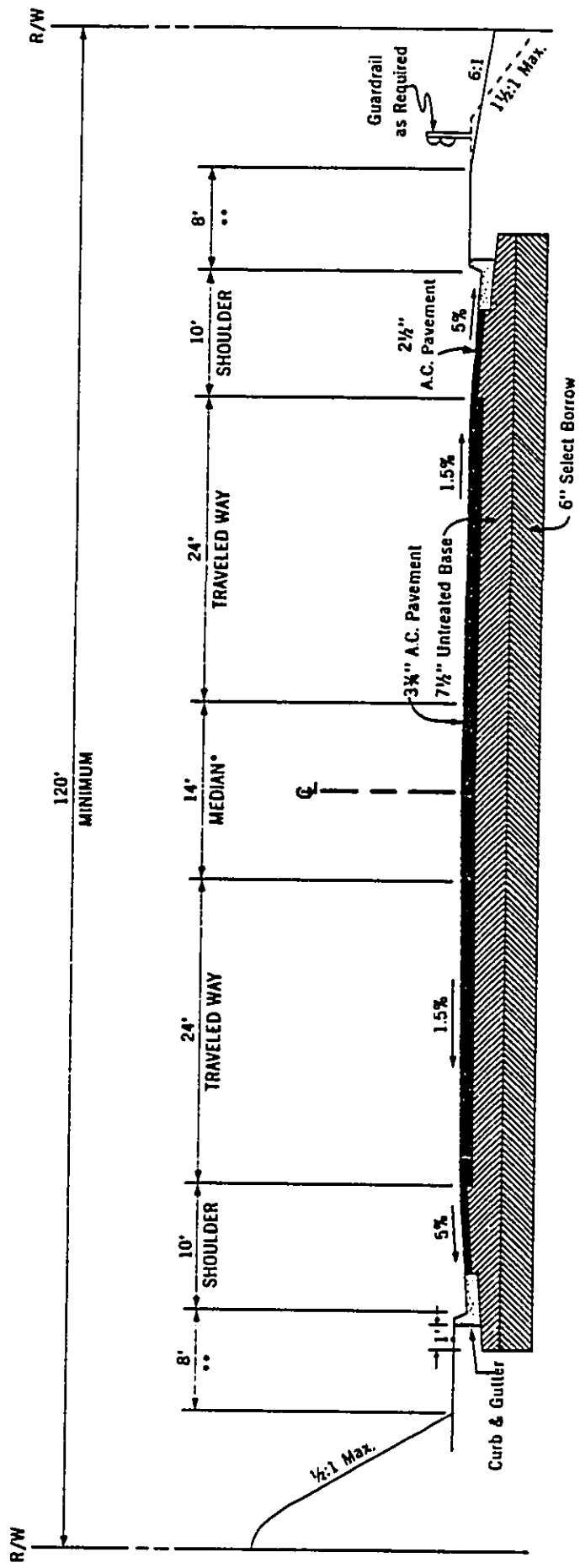


FIGURE 4



TYPICAL SECTION
 KUAKINI HIGHWAY REALIGNMENT
 LINE 6, TWO-LANE SEGMENT

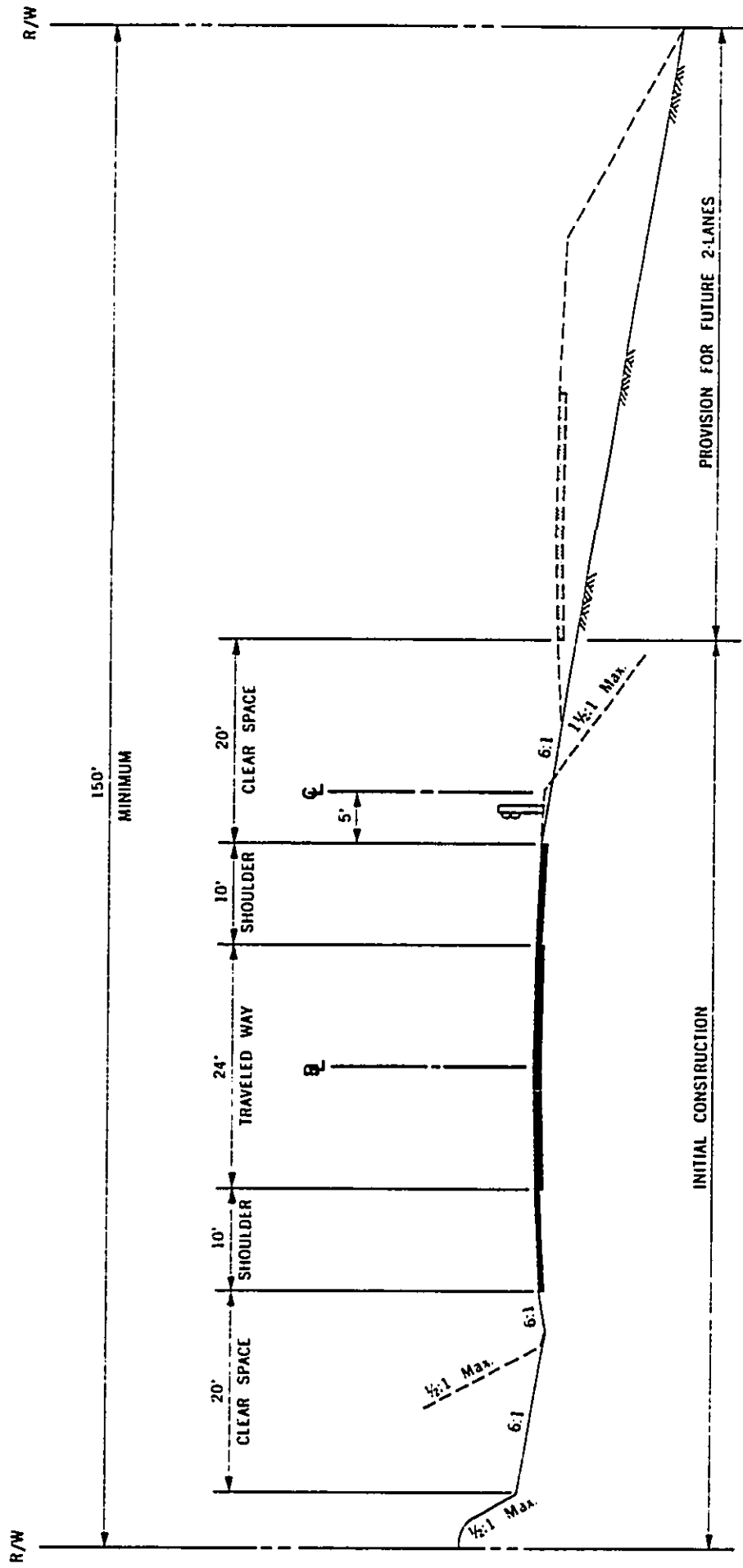
Figure 5



*Crossable with left-turn channelization at intersections.
 **Space provision for bikeway.

TYPICAL SECTION
 KUAKINI HIGHWAY REALIGNMENT
 LINE 8
 &
 LINE 6, FOUR-LANE SEGMENT

Figure 6



TYPICAL SECTION
 KUAKINI HIGHWAY REALIGNMENT
 LINE 1
 (RECOMMENDED)

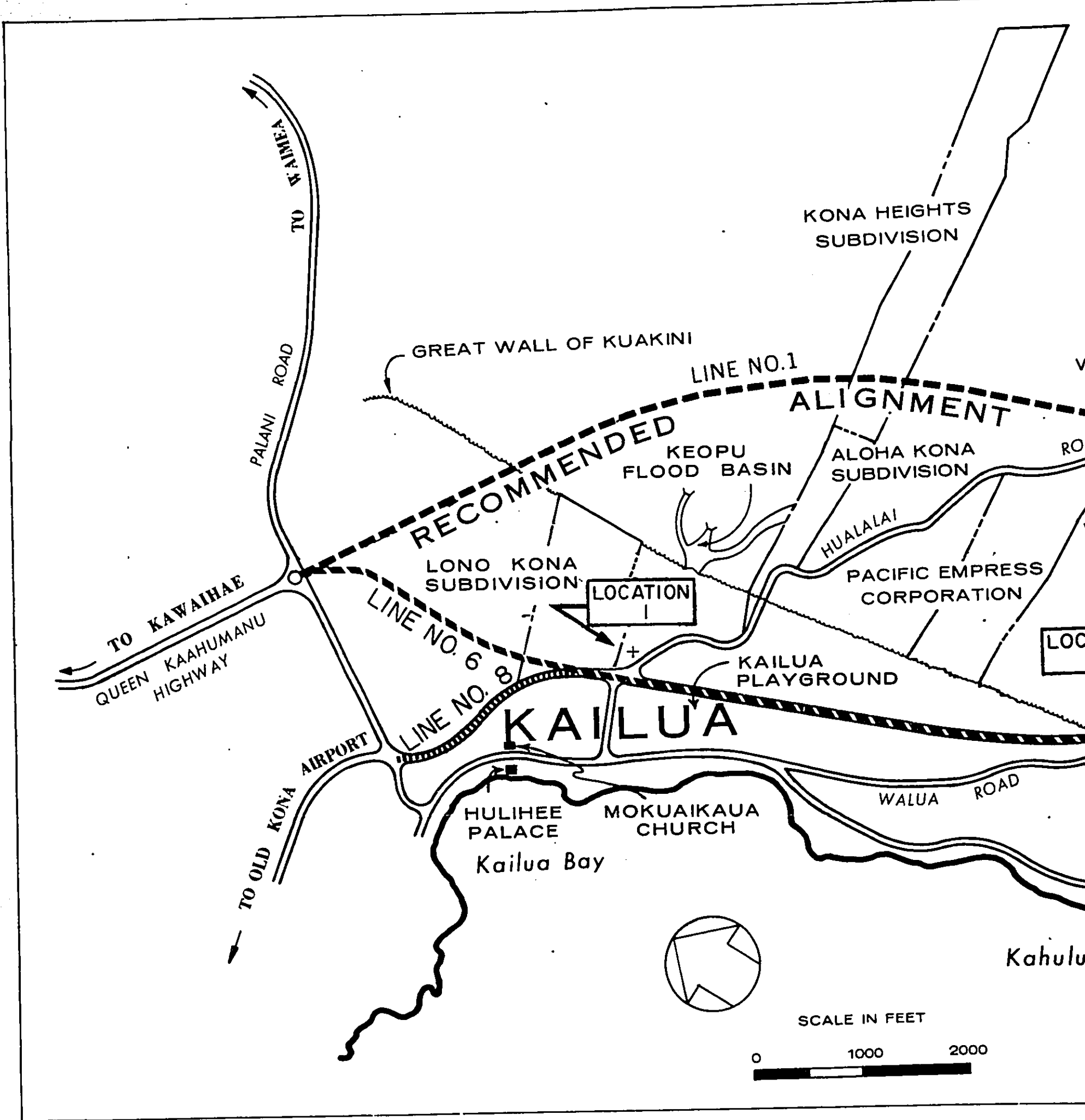
Figure 7

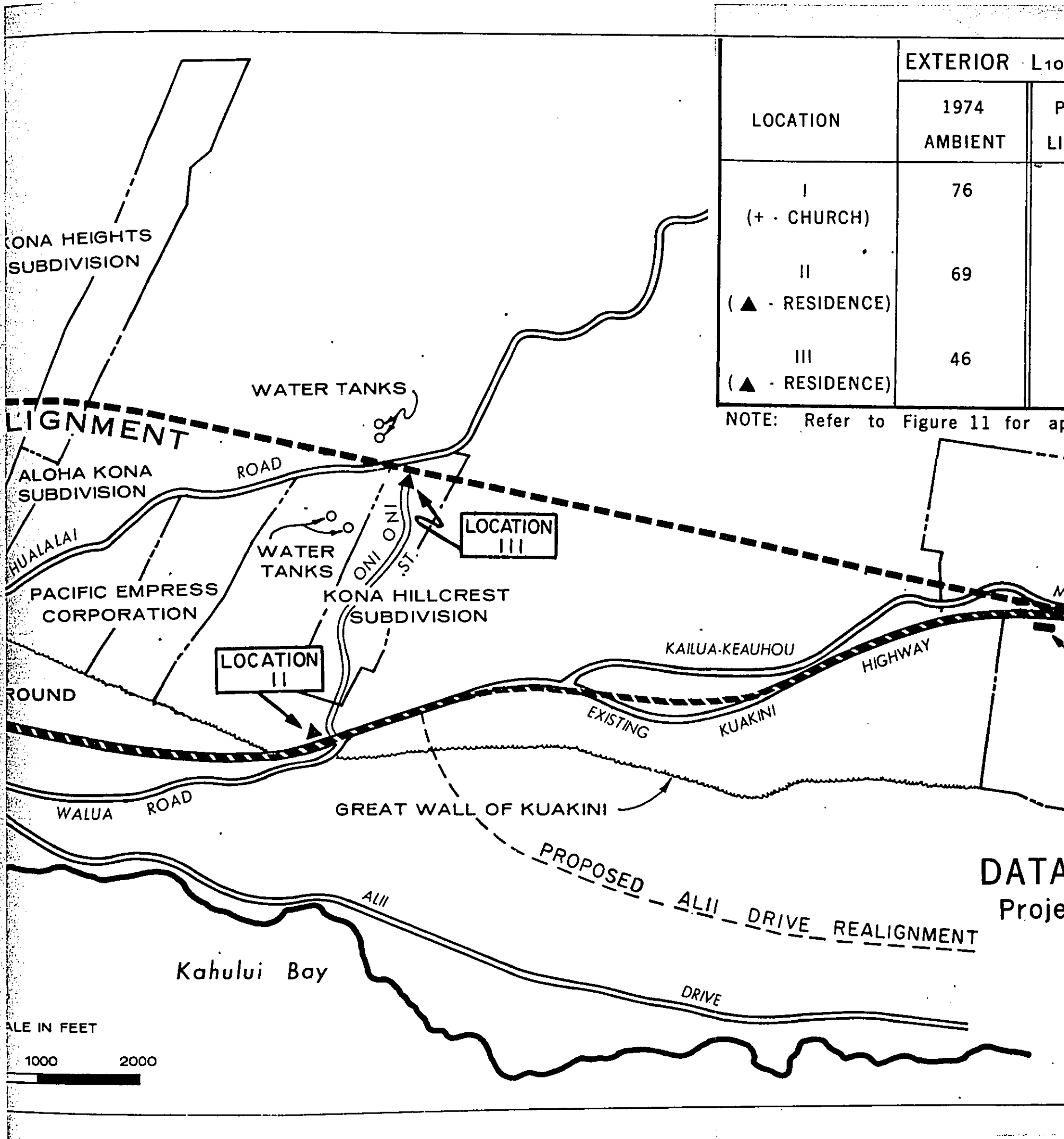
KUAKINI HIGHWAY REALIGNMENT

Project No. RF-011-1(14)

COMPARATIVE DATA

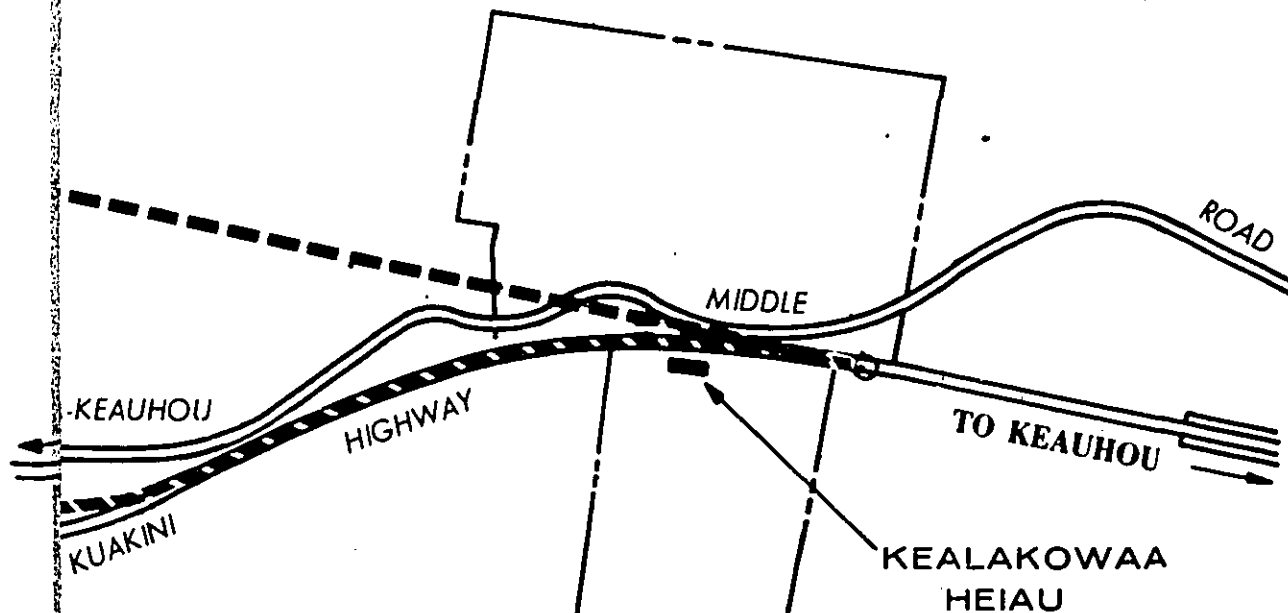
	LINE NUMBER		
	1	6	8
I. DESIGN FACTORS			
ROW Min. Width (feet)			
1. 4-Lane Section	None	120	120
2. 2-Lane Section	150	100	None
Roadway Lengths (miles)			
1. 4-Lane Section	None	2.42	2.96
2. 2-Lane Section	3.11	0.54	None
Design Speed (MPH)	60	50	50
Maximum Grade	4.5%	4.2%	4.0%
II. COSTS IN \$1000			
Construction	2,694	3,213	3,263
Preliminary Engineering	245	292	297
Rights-of-Way	2,739	4,136	3,484
TOTAL	5,678	7,641	7,044
III. SOCIAL EFFECTS			
No. of Parcels Affected	57	68	97
No. of Residences Affected	0	12	0
No. of Businesses Affected	0	7	5





LOCATION	EXTERIOR L ₁₀ (dBA) DURING PEAK HOUR			DESIGN STANDARD
	1974 AMBIENT	PREDICTED - 1995 LINE 1	LINE 6&8	
I (+ - CHURCH)	76	78	81	70
II (▲ - RESIDENCE)	69	73	75	70
III (▲ - RESIDENCE)	46	64	N/A	70

NOTE: Refer to Figure 11 for appropriate traffic assignment.



NOISE
DATA AND LOCATION
 Project No. RF-011-2(14)

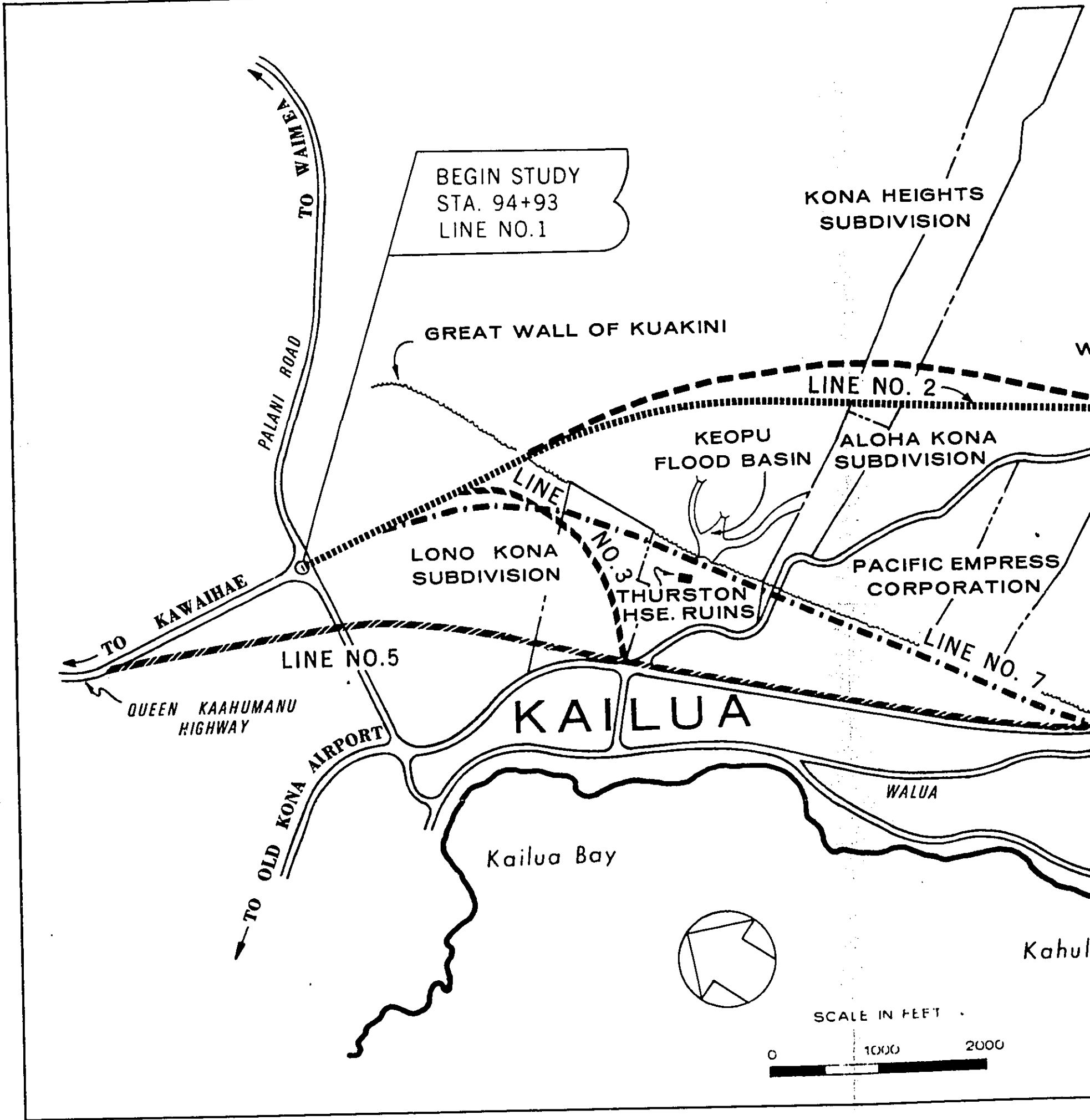
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

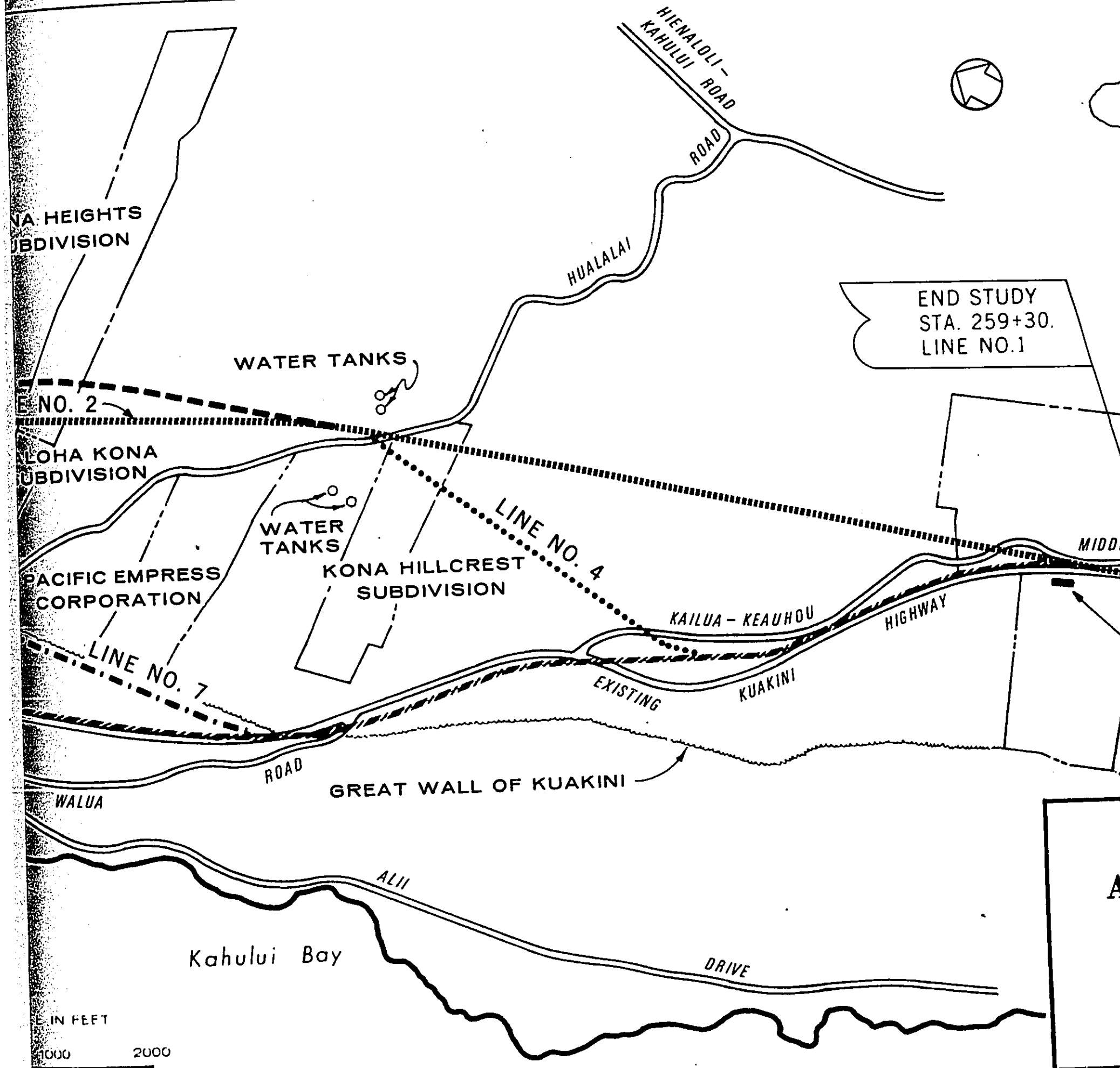
PREPARED BY THE
 HIGHWAY PLANNING BRANCH

IN COOPERATION WITH THE
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

FEBRUARY 1977

Figure 9





NA. HEIGHTS
UBDIVISION

HIALALAI -
KAHULUI ROAD
ROAD



HUALALAI

END STUDY
STA. 259+30.
LINE NO.1

WATER TANKS

LINE NO. 2

ALOHA KONA
UBDIVISION

WATER
TANKS

LINE NO. 4

PACIFIC EMPRESS
CORPORATION

KONA HILLCREST
SUBDIVISION

LINE NO. 7

KAILUA - KEAUKOU

HIGHWAY

MIDDLE

EXISTING

KUAKINI

ROAD

GREAT WALL OF KUAKINI

WALUA

ALII

Kahului Bay

DRIVE

SCALE IN FEET



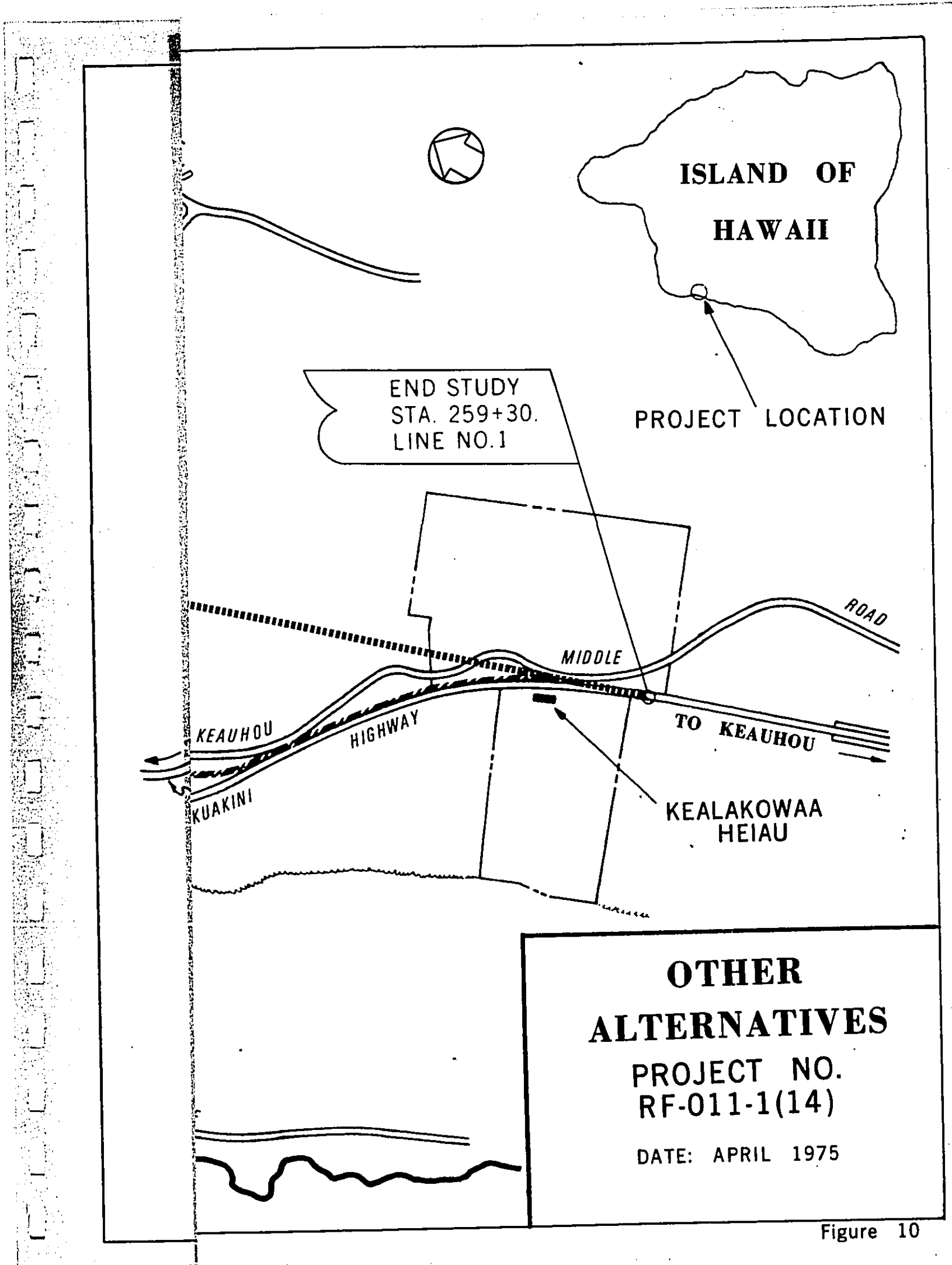
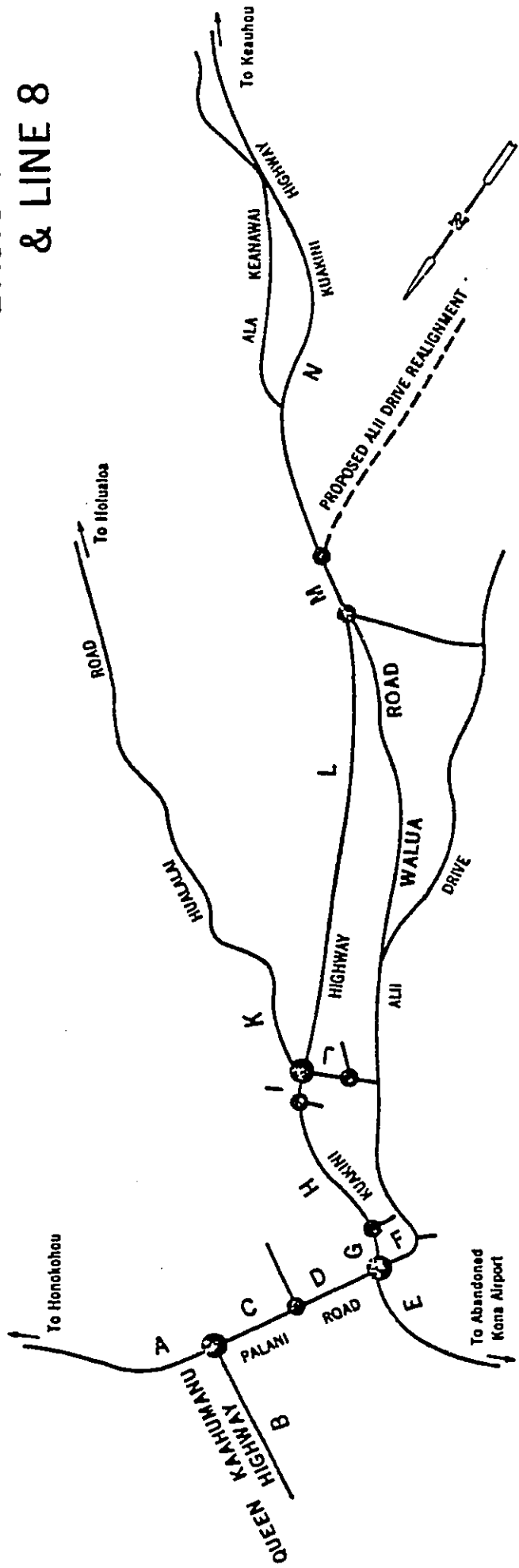


Figure 10

BASIC SCHEME & LINE 8



SEGMENTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1975	2340	3610	5640	6290	500	8080	10730	11060	11730	9380	950	7580	9210	7030
1985	3360	6450	9360	10520	900	12650	17540	18050	19100	14680	1330	12630	15180	11930
1995	4350	9310	13070	14750	1300	17110	24290	24980	26410	19860	1690	17710	21170	16830
K	75	90	85	87	70	68	87	83	80	90	75	74	79	74
D	95	120	115	115	115	115	115	115	115	115	115	75	75	35
T	65	100	90	90	90	90	90	90	90	90	90	65	65	40
24														

KUAKINI HIGHWAY REALIGNMENT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PREPARED BY THE
HIGHWAY PLANNING BRANCH
IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

PROJECT NO. RF-011-2 (14)
AUGUST 1974

TA 74-11

ADT = Average Daily Traffic

K = Peak Hour Traffic x 100

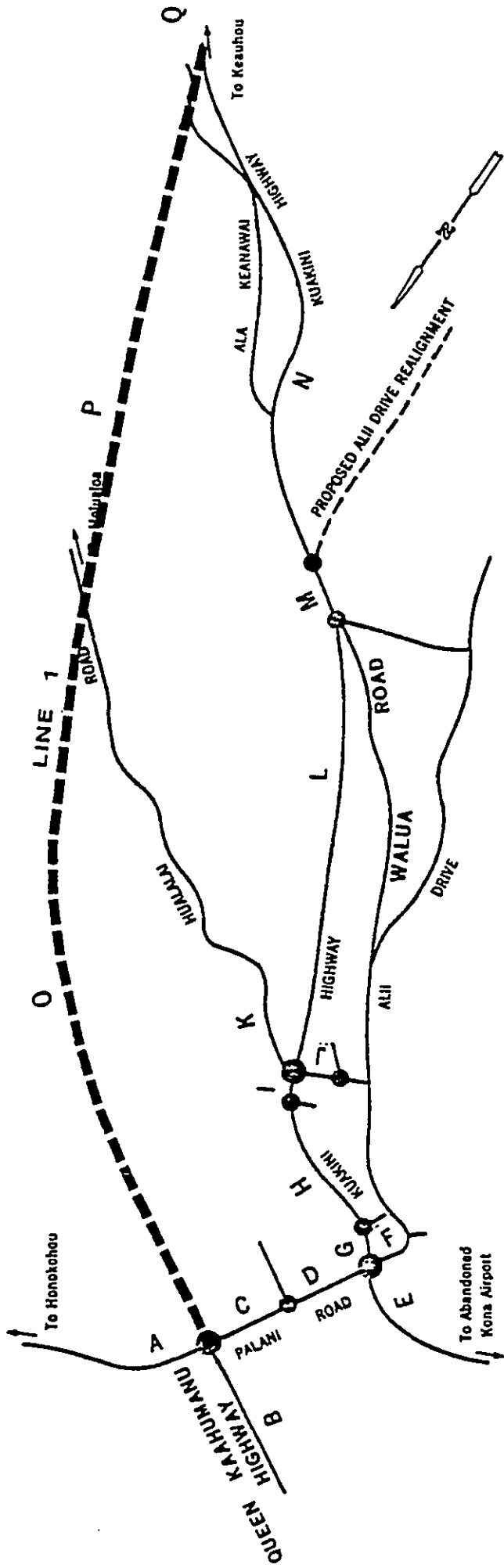
ADT

D = Directional Distribution

T = % Trucks

Figure 11

Line 1



KUAKINI HIGHWAY REALIGNMENT

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 PREPARED BY THE
 HIGHWAY PLANNING BRANCH
 IN COOPERATION WITH THE
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

PROJECT NO. RF-011-2 (14)
 AUGUST 1974
 TA 74-11

SEGMENTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1975	2340	3610	4911	5520	500	8080	9370	9640	10190	9380	830	5710	7340	5150	1940	1870	7030
1985	3360	6450	7960	9040	900	12650	15120	15550	16390	14680	1160	9390	11950	8680	3330	3230	11930
1995	4350	9310	11090	12640	1300	17110	20870	21450	22590	19850	1470	13180	16640	12260	4700	4530	16830
K	75	90	82	86	70	68	86	83	80	90	76	74	82	74	76	75	74
D	93	120	115	115	115	115	115	115	115	115	75	75	75	35	35	35	35
T	65	100	90	90	90	90	90	90	90	90	65	65	65	40	40	40	40

ADT = Average Daily Traffic

K = Peak Hour Traffic x 100

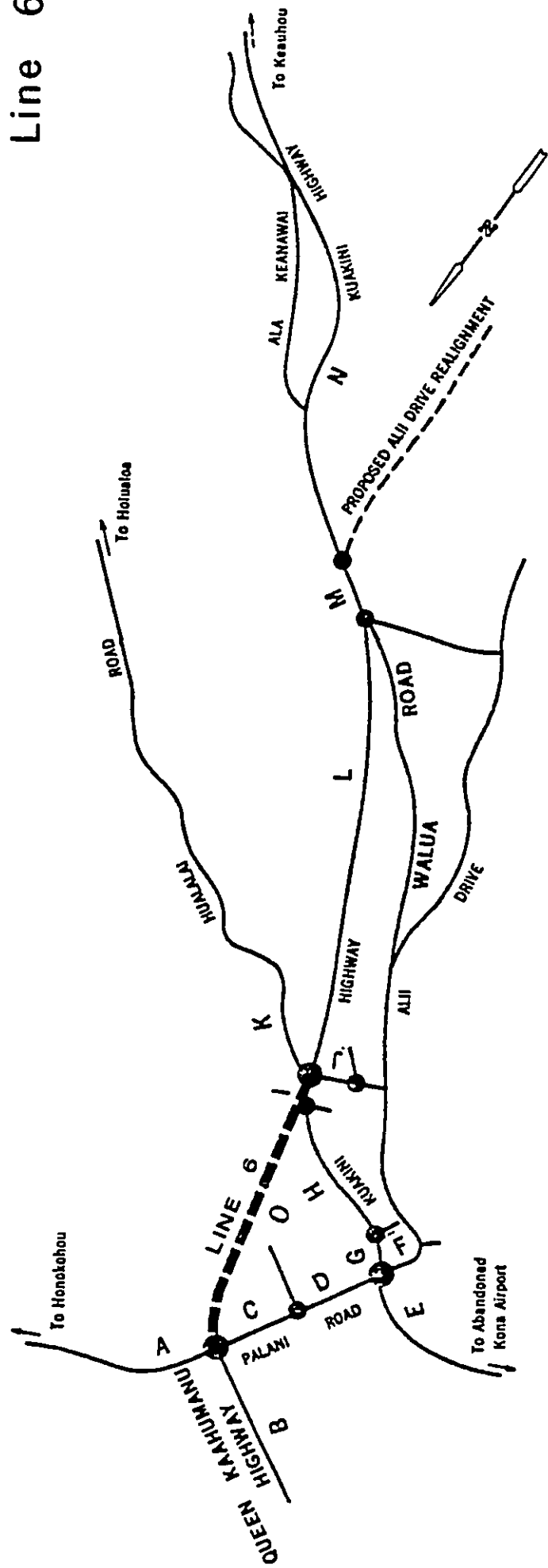
ADT

D = Directional Distribution

T = % Trucks

Figure 11

Line 6



KUAKINI HIGHWAY REALIGNMENT

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 PREPARED BY THE
 HIGHWAY PLANNING BRANCH
 IN COOPERATION WITH THE
 U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

PROJECT NO. RF-011-2 (14)
 AUGUST 1974
 TA 74-11

SEGMENTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1975	2340	3610	1920	2520	500	8080	8420	8750	10340	9380	950	7580	9210	7030	3760	11730
1985	3360	6450	3180	4260	900	12650	13550	14070	16560	14680	1330	12630	15180	11930	6260	19100
1995	4350	9310	4980	5970	1300	17110	18590	19280	22660	19860	1690	17710	21170	16830	8790	26410
K	75	90	85	92	70	68	87	81	75	90	75	76	79	74	85	80
D	95	120	115	115	115	115	115	115	115	115	115	115	115	115	115	115
T	65	100	90	90	90	90	90	90	90	90	90	65	65	40	90	90

ADT = Average Daily Traffic

K = Peak Hour Traffic x 100

D = Directional Distribution

T = % Trucks

Figure 11

TABLE 1. ACCIDENT DATA

Year	Multi-Vehicle In Transport	NO. OF ACCIDENTS					Parked Vehicle or R/OFF Road*	All Others	Total
		Fixed Objects	Pedestrian	Overturn					
FAP 11, Queen	30	8	1	0	8*	3	51		
1970	37	23	1	4	0	2	67		
1971	33	22	2	1	2	3	63		
Kaahumanu Hwy. to Mamalahoa Hwy.	28	19	2	3	1	2	55		
1973	25	23	2	2	2	4	58		
1974	49	15	2	6	0	1	73		
1975									

TABLE 2. COMPARISON WITH SIMILAR FACILITY

Period	Multi-Vehicle In Transport	AVERAGE NO. OF ACCIDENTS					Parked Vehicles or R/OFF Road	All Others	Total
		Fixed Objects	Pedestrian	Overturn					
FAP 11, Same as above	34	18	2	3	2	3	61		
1970-1975									
FAP 11, Kealahou to Napooho Road	18	11	3	1	2	1	35		
1970-1975									

Source: State of Hawaii, Department of Transportation, Land Transportation Facilities Division

APPENDIX B

CONCEPTUAL STAGE RELOCATION PROGRAM

CONCEPTUAL STAGE RELOCATION PROGRAM PLAN
KUAKINI HIGHWAY REALIGNMENT
PROJECT NO. RF-011-1(14)

Prepared by the
Highways Division
Right-of-Way Branch

The conceptual stage relocation program plan together with the housing availability data for the subject project is hereby submitted.

The following is a discussion of our findings, the relocation problems that we may encounter, if any, and their probable solutions for each of the various routes under consideration for the subject project:

General Description and Location of the Project Impact Area:

The proposed Kuakini Highway Realignment, Project No. 11A-03-69, presents three (3) route locations situated at Kailua-Kona, North Kona District, Island of Hawaii.

Kailua-Kona is a section of the North Kona area and is a tourist oriented community. It is also a community noted for big game fishing. The population of the North Kona Division in 1970 was 4,832. The Caucasian (44%), Japanese (23%) and the Hawaiians (19.3%) make up the dominant ethnic or racial groups in the North Kona area. The median income for families was \$9,000 - \$9,999 and for unrelated individuals \$2,000 - \$2,999. (Community Profile - Population Characteristics and Socio-Economic Characteristics is attached for information). (Attachment #1).

Line 1 (Mauka Route)

This route, one of several under consideration, involves 57 parcels of land of which 13 are by whole-taking and 44 by partial-taking. This route begins from where the present Kailua-Kawaihae Road ends at Palani Street. The bulk of the land involved will be agricultural land owned by individuals and used primarily as pastureland. It is anticipated that no

dwellings will be affected by this route although several vacant lots in a subdivision will be affected. It is anticipated that no new homes will be built within the proposed alignment. Hence, there will be no relocation of any individual, family, farm, business or non-profit organization. There will be no relocation problem and there will be no adverse sociological impact as a result of the taking of the land. If the owners of the lots decide to build, there will be no problem as there are quite a few lots available for sale within the same subdivision. It is our recommendation that this route be given the most serious consideration for the proposed Kuakini realignment.

Line 6

The right-of-way for this alignment is broken down into two sections.

a. Palani Road to Hualalai Road

This section involves only 19 parcels of land of which 7 are whole takings and 12 partial takings. This section starts at the Queen Kaahumanu Highway Palani Street junction and swings toward the existing Kuakini Road. It is anticipated that 5 business (apartment complex), a store (retail grocery) and a car rental operation will be affected by this route and will have to be relocated. The rental business to be affected is an apartment complex that has 12 units (3 story-twin buildings, 2 units on each floor, all 2 bedrooms). Although there are presently only six units occupied, an assumption is made that all units will be in occupancy and that twelve families or individuals will be displaced. The units rent from \$255 to \$275 a month. It is generally anticipated that there will be no problems relocating the tenants from this apartment complex.

The availability study indicates that the present rental for 2-bedroom apartments ranges from \$300 to \$375. The rental charged to the tenants, ranging from \$255 to \$275, indicates that they will be able to rent a comparable decent, safe and sanitary replacement housing unit within their financial means. No problem is anticipated for the tenants to be displaced.

It is anticipated that problems will be encountered in the relocation of the businesses affected by this route.

The following are businesses anticipated to be relocated:

1. Kona Laundry and Dry Cleaning
2. Ho Fa Inn (Restaurant & Bar)
3. Rental Operation (Apartment Complex, John W. Dick & Jacob Klossen, owners)
4. Tropical Rent-A Car (Car Rental)
5. Store (Retail-Grocery, Fujitani, owner)

This route will eliminate the only laundry/dry-cleaning plant and Chinese food restaurant in the community, besides the other three businesses to be affected. This alignment will have adverse effects on the owners or operators, employees, the community and the businesses because of the scarcity of available commercial properties in the area.

b. Hualalai Road to Kealakowaa Heiau

This section, the realignment of the existing Kuakini Highway beyond Hualalai Road toward Keauhou, involves 49 parcels of land of which 3 parcels are by whole-taking and 46 parcels are by partial-taking.

An estimated 2 businesses plus several signs, a light standard and a portable liquid gas tank are anticipated to be affected by this route. Of the two businesses affected, one is a service station and the other is a savings and loan company.

It is not anticipated that problems will be encountered in the relocation of the businesses, signs, and light standards on this route.

The two businesses anticipated to be relocated are:

1. Union Oil Service
2. Pioneer Savings and Loan Association of Hawaii

These two businesses are presently occupying properties which would be partially taken by this route. The savings and loan company is occupying a building which will be partially affected, hence, the savings and loan company will have to relocate from its present location in the building to another office space within the building. There are several vacant office spaces within the building to easily accommodate the savings and loan company. The Union Service Station will also be able to relocate on the remaining property and reconstruct the station to operate on the same level as previously.

As evidenced by the aforementioned presentation, it is our recommendation that consideration be given to Line 1 to avoid relocation of families, individuals, businesses, farms and non-profit organizations.

The indications provided by our study are applicable as of the present. Future surveys might indicate otherwise at such point in time.

Line 8

This line is broken down into two sections.

a. Existing Kuakini, Palani to Hualalai Road

This section, the widening of the existing Kuakini Highway, involves 48 parcels of land of which 9 parcels are by whole-taking and 39 parcels by partial-taking. There are no residential displacements affected by this section. It is anticipated that three businesses will be affected, two service stations and a small liquor store. Of the two service stations to be affected, one may be able to be redesigned at their present location and operate without relocating. It is also anticipated that several signs and light standards will be affected and will be relocated within the properties involved. The other station will definitely be forced to relocate from its present location.

It is anticipated that there will be problems encountered in the relocation of the businesses on this route. There are very few, if any, commercial zoned properties available for sale or lease that will be feasible to put up a service station.

b. Hualalai Road to Kealakowaa Heiau

Refer to Line 6.

Conclusion

Although our survey indicates that of the 3 different lines under consideration, one route will not affect any dwellings or other improvements, while three routes will affect families and the other two will affect businesses, no undue sociological and economic impact on the residential displacements is expected but some degree of economic and sociological impact will result for the businesses.

All Federally-aided highway programs must comply with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The State of Hawaii has appropriate legislation and the State Department of Transportation also has an organization equipped and staffed to administer a relocation assistance program in accordance with the Federal law.

An examination of the Federal law as well as the State program which is described in the Relocation Advisory Assistance and Relocation Payments Brochure, reveals that certain statutory limits exist with respect to replacement housing payments that can be made to tenant owner displacees. Under the typical relocation assistance program, a displaced tenant will be eligible for up to a maximum of \$4,000 which is paid over a period of four years in annual installments which, in actuality, amount to a maximum \$83.33 per month rental subsidy or, in the case of an owner, a lump sum payment of up to \$15,000 can be made to enable him to purchase a comparable decent, safe and sanitary replacement dwelling. These payments are in addition to moving payments and other services to which the relocatee is entitled.

Due to the high cost of rental and "for sale" homes in Hawaii, the above benefit maximums sometimes are insufficient to accommodate the satisfactory relocation of families displaced by public projects. State and Federal regulations require that a person or family must be relocated within his financial means. This simply means that a tenant must be relocated in such a way that the replacement dwelling will not increase his "out of pocket" costs in terms of rent, over and above what was paid at the property relocated from, considering the rental subsidy paid by the State.

The treatment of homeowners is similar although the payment, if any, is made on a lump sum basis to enable him to buy a house comparable to what he had, and therefore, be no worse off financially in terms of housing cost than he was before.

Although the conceptual relocation study made for this project shows there is no indication that the statutory requirements would have to be exceeded to satisfactorily relocate families, it is possible that such a situation can exist. Where this is the case, a procedure called "housing of last resort" (Section 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970) can be relied on to satisfactorily relocate displaced families.

Housing of last resort can take several forms as follows:

1. Land improved with an existing dwelling can be purchased.
2. Existing dwellings can be rehabilitated.
3. New dwellings can be constructed.
4. State acquired dwellings from the right-of-way project can be relocated and refurbished.

All these various methods are accomplished under the auspices of the State highway agency and such housings so provided is either rented to the highway displacee or made available for sale to him, depending on his occupancy status. In addition to the above alternatives, if justified, the replacement housing payment can be increased beyond the statutory limits to allow a relocatee to purchase on his own or rent a dwelling within his financial means. Under this procedure, the owner relocatee would simply be paid an amount in excess of \$15,000 on a lump sum basis or in the case of a tenant, the maximum four-year subsidy payment total of \$4,000 would be exceeded.

Federal and State procedures also have additional safeguards in the sense that construction cannot be authorized to begin on any project until such time as all displacees have satisfactorily relocated to comparable DSS housing within their financial means or such housing is in place and has been made available to the relocatee.

At the time an alternative alignment is selected for this project which would involve the creation of utilization of last resort housing a detailed study for housing of last resort will be initiated so that the relocatees can be accommodated in a manner compatible with the scheduling of the highway project development of construction.

Appendix B

Businesses, Farms & Non-Profit Organizations

Our relocation assistance program contains no mandate to furnish comparable quarters, facilities, or location for displaced businesses, farms, or non-profit organizations. Nevertheless, several elements of the State's assistance program for this type of relocatee are worthy of mention as follows:

1. Actual moving costs up to 50 miles will be paid.
2. Searching costs incurred in connection with the obtainment of a new business site can be reimbursed.
3. In lieu of items 1 and 2 above, a fixed payment based upon the net income of the business not to exceed \$10,000 can be paid if the business cannot be established in the area or cannot be reestablished without a substantial loss of existing patronage.
4. Benefits of the small business disaster loan program under Section 7(b)(3) of the Small Business Act (15 U.S.C. 636 (b)(3)) may be available to eligible businesses displaced because of a highway project. As of 7/9/73, loans up to 30 years at 5 3/8% per annum would be available to eligible business relocatees and to those businesses outside of the project (but not displaced) where substantial economic injury results because of the highway project.
5. State relocation advisory services are available.

Since several small businesses may be affected by this project, item No. 4 may be particularly helpful in this instance.

COMMUNITY PROFILE - SOCIO-ECONOMIC CHARACTERISTICS
1970 CENSUS

	Place <u>North Kona Div.</u>	
	<u>Number</u>	<u>Percent</u>
ORIGIN (Total population = 4,832)		
Foreign born	<u>279</u>	<u>5.8</u>
Native born of native parents	<u>3,568</u>	<u>73.8</u>
Born in state of residence	<u>3,257</u>	<u>67.4</u>
Born in different state	<u>881</u>	<u>18.2</u>
RESIDENCE IN 1965 (Pop. 5 yrs. & over = 4,391)		
Same house	<u>2,243</u>	<u>51.1</u>
Different house, same county	<u>750</u>	<u>17.1</u>
Different county, same state	<u>435</u>	<u>9.9</u>
Different state	<u>572</u>	<u>13.0</u>
EDUCATION (Pop. 25 yrs. & over = 2,634)		
8 yrs. or less completed	<u>760</u>	<u>28.9</u>
Completed high school	<u>1,738</u>	<u>66.0</u>
4 yrs. or more college	<u>231</u>	<u>8.8</u>
Median school yrs.	<u>12.1</u>	
EMPLOYMENT (Pop. 16 yrs. & over = 3,632)		
In civilian labor force, male	<u>1,347</u>	<u>78.8</u>
In civilian labor force, female	<u>675</u>	<u>43.5</u>
In armed forces	<u>0</u>	<u>--</u>
Employed	<u>1,925</u>	<u>95.2</u>
Unemployed	<u>97</u>	<u>4.8</u>
Prof. and technical workers	<u>163</u>	<u>8.5</u>
Managerial & admin. workers	<u>134</u>	<u>7.0</u>
Laborers and farm workers	<u>236</u>	<u>12.3</u>
INCOME		
Median income, families	<u>\$9,000-9,999</u>	
Median income, unrel. individuals	<u>2,000-2,999</u>	
Families below poverty level	<u>147</u>	<u>12.0</u>
Families below \$10,000	<u>622</u>	<u>50.9</u>
Families above \$25,000	<u>85</u>	<u>7.0</u>
HOUSING		
Total housing units	<u>1,982</u>	
All occupied units	<u>1,431</u>	
Owner-occupied units	<u>639</u>	<u>44.7</u>
Median value, owner occupied	<u>\$35,000-49,999</u>	
Median rent, renter occupied	<u>\$150-199</u>	
Lacking all or some plumbing	<u>376</u>	<u>19.0</u>
Lacking telephone	<u>283</u>	<u>19.8</u>
1.51 or more persons per room	<u>202</u>	<u>14.1</u>
One-unit structures	<u>1,360</u>	<u>68.6</u>

COMMUNITY PROFILE - POPULATION CHARACTERISTICS
1970 CENSUS

County Hawaii Island Hawaii Place North Kona Div.
Division _____

NUMBER OF PERSONS

Year	Population	Change from previous census	
		Number	Percent
1970	4,832	381	8.6
1960	4,451	844	23.4
1950	3,607		

GENERAL CHARACTERISTICS

	Number	Percent
Under 5 years of age	441	9.1
Under 18 years of age	1,747	36.2
65 years and over	394	8.2
Median age	28.6	
Persons 14 years and over		
Married, male	1,112	59.5
Married, female	1,085	65.2
Total number of persons		
Male	2,559	53.0
Female	2,273	47.0
Number of households.		
Persons per household	1,431	
	3.36	
Living in group quarters	17	
Number of families		
Husband and wife	1,131	100.0
Other male head	989	87.4
Female head	46	4.1
	96	8.5

ETHNIC GROUPS

Caucasian	2,125	44.0
Negro	7	0.1
American Indian	14	0.3
Japanese	1,118	23.1
Chinese	177	3.7
Filipino	406	8.4
Hawaiian	934	19.3
Korean	21	0.4
Other	30	0.6

AVAILABLE HOUSES

FOR RENT

	<u>Address</u>	<u>Bdrm.</u>	<u>Bath</u>	<u>Rent/ Cost</u>	<u>Firm or Person Ct.</u>	<u>Date</u>
1.	Alii Drive (Miliai House)	1	1	375.	Ron Burla	11/1/73
2.	Kalani St. (Duarte House)	3	1½	300.	" "	"
3.	Hillcrest #95	3	1½	270.	" "	"
4.	Kona Isle Apts. E2	2	2	300.		
5.	Kona Isle Apts. E3	2	2	300.		
6.	Kona Isle Apts. B37	2	2	350.		
7.	Casa Emdeko 205	2	2	370.		
8.	Casa Emdeko 336	2	2	400.		
9.	Kona Magic Isle 313	1	1	210.		
10.	Aloha Kona Subdivision TMK 7-5-23-37	3	1½	325.	Kona Realty	10/31/73
11.	Alii Kai Lot 18	3	1½	275.	" "	"

AVAILABLE HOUSES FOR SALE

1.	Kona Highlands (7,500 sf) TMK 7-3-11-55	3	2	63,000	Ron Burla	11/1/73
2.	Kona Highlands (7,500 sf) TMK 7-3-12-50	3	2	75,000	" "	"
3.	Palani St. 1 acre TMK 7-4-9-23	3	2	85,000	" "	"

Appendix B

AVAILABLE HOUSES FOR SALE

	<u>Address</u>	<u>Bdrm.</u>	<u>Bath</u>	<u>Rent/ Cost</u>	<u>Firm or Person Ct.</u>	<u>Date</u>
4.	Seaview (7,500 sf) TMK 7-7-16-65	2	1½	37,000		
5.	Kahaluu Beach (7,500 sf) TMK 7-8-14-72	3	2	62,500 (lease)		
6.	Keauhou (7,500 sf) TMK 7-8-12-89	3	2	65,000		
7.	Kona Heights (7,500 sf) TMK 7-5-26-55	3	2	57,000		
8.	Kona Heights (7,500 sf) TMK 7-5-26-58	3	2	58,000		
9.	Kona Heights (7,500 sf) TMK 7-5-26-51	3	2	58,000		
10.	Lono Kona (7,500 sf) TMK 7-5-22-71	3	2	36,500		
11.	Alii Kai (8,397 sf) TMK 7-6-19-13	2	1	32,500	Kona Realty	10/31/73
12.	Lehua St. (8,397 sf) TMK 7-6-19-23	3	1	37,500		
13.	Lehua St. (8,641 sf) TMK 7-6-18-82	3	2	44,900		
14.	Kuakini Houselot (10,019 sf) TMK 7-7-14-2	3	1	40,000		
15.	Kona Sunset V (10,000 sf) TMK 7-7-13-12	3	1	49,000		
16.	Hualalai Rd. (39,204 sf) TMK 7-6-10-6	2	1	30,000		

MAJOR SUBDIVISION UNDER CONSTRUCTION

Queen Liliuokalani Village (Palani Street, Kailua Kona.)
Presently Unit 1B is being built (122 units, 3 and 4 bedrooms)
Price range from \$30,000 to \$40,000.
Eventually 2,000 homes will be built.
Kenny Young - Broker.

APPENDIX C

SECTION 639

TEMPORARY WATER POLLUTION CONTROL (SOIL EROSION)

The following Section shall be made a part of the Standard Specifications:

"SECTION 639 - TEMPORARY PROJECT WATER POLLUTION CONTROL (SOIL EROSION)"

639.01 Description. This work shall consist of temporary control measures as shown on the plans, required by these specifications or as ordered by the Engineer during the life of the contract to control water pollution, through use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion and siltation control measures as described herein shall be applied to any erodible material of this project, including local material sources and work areas and all haul roads.

The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion control features specified elsewhere in the contract to the extent practicable to assure economical, effective and continuous erosion control throughout the construction and postconstruction period.

The temporary or permanent drainage facilities shall be installed as required by these specifications or as ordered by the Engineer.

639.02 Materials.

A. Mulches may be bagasse, hay, straw, fiber mats, netting, wood cellulose, bark, wood chips, or other suitable material acceptable to the Engineer and shall be reasonably clean and free of noxious weeds and deleterious materials.

B. Slope drains may be constructed of pipe, fiber mats, rubble, portland cement concrete, bituminous concrete, plastic sheets, or other material acceptable to the Engineer that will adequately control erosion.

C. Grass shall be a quick growing species (such as rye grass, Italian rye grass, or cereal grasses) suitable to the area providing a temporary cover which will not later compete with the permanent cover.

D. Fertilizer and soil conditioners shall be a standard commercial grade acceptable to the Engineer. Fertilizer shall conform to the requirements of Subsection 712.18(A).

E. Others.

Appendix C

639.03 Erosion Control Conference. An erosion control conference shall be held prior to the start of the applicable construction to discuss the sequence of work, plans and proposals for accomplishment of temporary and permanent erosion control.

The Contractor shall plan, design and submit to the Engineer, at least 10 days prior to the scheduled conference,

diagrams which indicate the installation of each erosion control feature in exact relation to the sequence of each construction operation, and

plans (drawings) which illustrate approximate locations and typical details of each erosion control feature, and drainage patterns. Whenever it is expected that drainage patterns are to be critically altered by the progress of the construction, a separate drawing shall be submitted for each phase.

No work shall be started until the erosion control plans, sequence of operations and methods of operations have been submitted and accepted by the Engineer.

639.04 Construction Requirements. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface area of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut slopes shall be seeded and mulched as the excavation proceeds to the extent considered desirable and practicable.

The Contractor will be required to incorporate all erosion control features into the project as shown on the accepted plans and schedule. The accepted plans and schedules shall be modified to correct conditions that develop during construction that were not foreseen during the design or preconstruction stage.

The Contractor shall limit the surface area of earth material exposed by grubbing, stripping of topsoil, excavation, borrow and embankment operations to that which is necessary to perform the next operation within a given area and his capability and progress in keeping the finish grading, mulching, seeding, and other such pollution control measures current in accordance with the accepted plans and schedule. Unless specifically authorized by the Engineer, the grubbing of vegetative root mat and stumps, and the stripping of topsoil shall be confined within the limits of excavation which shall be actively and continuously prosecuted within 15 days; and, excavation, borrow and embankment construction shall be confined to the minimum area necessary to accommodate the Contractor's equipment and work force engaged in the earth moving work; and the surface area of earth material exposed shall not at any time exceed 750,000 square feet without prior approval of the Engineer. Any area remaining bared or cleared for more than 15 days which is not within the limits of active construction or excavation shall be hydro-mulch seeded or remedied within 3 days as directed by the Engineer at the Contractor's expense without cost to the State.

The Contractor shall, at the end of each work operation in any one day, shape the earthwork in such a manner as to control and direct the runoff of rainwater. He shall construct earth berms along the top edges of embankments or any critical area within the project such as along the right-of-way or streams, water channels or any bodies of water to intercept runoff water. Temporary slope drains shall be provided to carry runoff from cuts and embankments. The slope drains may be of flexible or rigid construction but shall be capable of being readily shortened or extended as the cut or fill advances. A portable flume shall be provided at the entrance to the temporary slope drains. Controlled discharges shall be provided for all waters impounded, directed or controlled by project activities or erosion control measures.

Cut slopes shall be shaped, topsoiled and planted or finished as specified as the work progresses unless otherwise directed by the Engineer. In no case shall exposed surface be greater than 15 feet in height. Whenever major excavation is suspended or halted and the slope is bared for more than 15 consecutive days or for more than 15 days in any 30-day period, the exposed surfaces shall be hydro-mulch seeded or protected as directed by the Engineer at the Contractor's expense without cost to the State.

Fill slopes shall be finished as specified and in accordance with the requirements of cut slopes hereinbefore described. In addition, the Contractor shall take extra precaution to protect and preserve the finished and previously seeded areas from any damages and spillover materials placed in the upper lifts of embankment.

Construction of berms, cofferdams or diversions in or near the vicinity of streams, ponds, waterways or any body of water shall be of approved materials.

Failure to conform with the above requirements will be cause for suspension of all operations.

All brush, limbs and root mat, except stumps cleared on the project shall be used to the fullest extent possible to construct silt barriers as noted on the plans or as directed by the Engineer. Whenever rock excavation is available on the project, an 8 to 15 inch layer of such materials shall be dump spread over the lower region of embankments in the immediate vicinity of stream crossings and shall be used to cover ditches, channels and other drainage ways leading away from cuts and fills; however all drainage ways shall be prepared to receive the rock excavation to the extent necessary to avoid reducing their cross-section. In the event rock excavation is not available on the project, materials as specified in Subsection 639.02 (A) shall be used as directed by the Engineer.

The Engineer may increase or decrease the amount of surface area of erodible earth material to be exposed at one time by clearing and grubbing, excavation, borrow and fill operations as determined by his analysis of project conditions.

In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal or State or local agencies, the more restrictive laws, rules, or regulations shall apply.

639.05 Method of Measurement and Basis of Payment. In the event that temporary erosion and pollution control measures are required due to the Contractor's convenience, negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense. Temporary erosion and pollution control work required, which is not attributed to the Contractor's convenience, negligence, carelessness or failure to install permanent controls, will be performed as ordered by the Engineer.

Where the work to be performed is not attributed to the Contractor's convenience, negligence, carelessness or failure to install permanent controls and falls within the specifications for a work item that has a contract price, the units of work will be paid for at the proper contract price. Should the work not be comparable to the project work under the applicable contract items, the Contractor will be ordered to perform the work on a force account basis, or by agreed unit prices.

The work involved in shaping the earthwork to control or to direct the runoff of rainwater at the end of each work operation in any one day and to construct and maintain earth berms, swales, temporary slope drains, and cofferdams or diversions in or near the vicinity of streams, ponds, waterways or any body of water or anywhere within the limits of the project and any other erosion work as called for in these specifications and, work necessary for the Contractor's convenience and operation shall be at the Contractor's expense and no measurement or payment will be made, unless otherwise specified.

The work involved in dump spreading rock excavation material, when available on the jobsite, or other materials when rock excavation is not available on the project as described in paragraph 9 of Subsection 639.04 will be paid for on a force account basis or by agreed unit prices.

In case of repeated failures on the part of the Contractor to control erosion, pollution, and/or siltation, the Engineer reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering costs will be charged to the Contractor and appropriate deductions made from the Contractor's monthly progress estimate.

Temporary pollution control may include construction work outside the right of way where such work is necessary as a result of roadway construction such as borrow pit operations, haul roads and equipment storage sites.

The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor."

APPENDIX D

DLNR CLEARANCE FORM

STATE OF HAWAII

TO: Department of Transportation

FROM: Department of Land and Natural Resources

CLEARANCE FORM

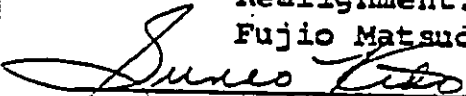
COORDINATION OF HIGHWAY PROJECTS
WITH
LAND AND NATURAL RESOURCES INTERESTS

This is to certify that Project No. 11A-03-69

Kuakini Highway Realignment

has been reviewed by this Department and insofar as economically practicable,
has been coordinated in terms of land and natural resources interests in
accordance with Section 109, Title 23, United States Code.

NOTE: The Department of Land and Natural Resources has plans for
installing a pipeline within the proposed Kuakini Highway
Realignment. (Refer to letter dated July 22, 1970 to Dr.
Fujio Matsuda, Director, Department of Transportation from DLNR.)


Chairman and Member
Board of Land and Natural Resources
Department of Land Natural Resources

7/27/70
Date

APPENDIX E

AIR QUALITY

Total Pollutant Burden Methodology

This approach involves estimating only motor vehicle and stationary sources pollutant emissions associated with a particular transportation plan or program and does not include relating the resultant emissions to pollutant concentrations and forecasting air quality. The approach is thus appropriate for making relative comparisons between transportation system alternatives or between systems for different years.¹

The analysis procedure first approximates pollutant emissions ($Q_1, Q_2, Q_3, \dots, Q_n$) for each segment of highway in the project vicinity. These quantities are then totalled to provide emissions (Q) for the entire project area. Detailed mathematical computations involved in this analysis are summarized by the following:

1. $Q_1 = VMT_1 \times CEF$
 - a. VMT_1 (Vehicle Miles Traveled)
= ADT (Average Daily Traffic)
x Length of Segment 1
 - b. CEF (Corrected Emission Factor)
= Emission Factor x Speed
Correction Factor

^{1/} U.S. Department of Transportation, Federal Highway Administration, and U.S. Environmental Protection Agency, "Guidelines for Analysis of Consistency Between Transportation and Air Quality Plans and Programs," April 1975

$$2. \quad Q = Q_1 + Q_2 + Q_3 \dots Q_n$$

n = number of highway segments

Emission quantities of carbon monoxide, hydrocarbons, and nitrogen oxides have been estimated for 1975 and 1985, on a daily and hourly basis.

JOHN A. BURNS
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801
July 18, 1974

DIRECTOR'S OFFICE

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DEPT. OF HEALTH
TRANSPORTATION

WALTER B. QUISENBERRY, M.P.H., M.D.
DIRECTOR OF HEALTH

WILBUR S. LUMMIS JR., M.S., M.D.
DEPUTY DIRECTOR OF HEALTH

RALPH B. BERRY, M.P.H., M.D.
DEPUTY DIRECTOR OF HEALTH

HENRI P. MINETTE, M.P.H., DR.P.H.
DEPUTY DIRECTOR OF HEALTH

In reply, please refer to
File: EPHS-PTR

The Honorable E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Admiral Wright:

Subject: Air Quality Analysis for Kuakini Highway
Kailua-Kona, Hawaii, Project No. 11A-03-69

The following are the results of our air quality analysis for the proposed project alternatives. Only information which summarizes our findings are enclosed.

Overall Area Study

An analysis of vehicular emissions was estimated from an area which included all highway segments affected by each proposed alternative. This analysis was used to determine which alternative would have the most favorable effect on overall ambient air quality.

Highway segments included in overall study area:

1. Basic configuration and Line 8 alternative consisted of highway segments C, D, G, H, I, K, L and N.
2. Line 1, Line 6 and Line 7 alternatives consisted segments C, D, G, H, I, K, L, N, O and P.

Findings:

1. Table 1.1 summarizes the daily and peak morning hour estimated emission rate. It is evident from Table 1.1 that even without improvements, the year 1985 would result in a decrease in emission for any of the pollutants considered. Table 1.1 also shows that for the year 1985, any of the proposed improvements would result in an additional decrease in carbon monoxide and hydrocarbon emissions below the basic 1985 no improvement condition, whereas nitrogen oxide emissions would increase.

Appendix E

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2. Table 1.2 summarizes the percentage change in emissions for the year 1985 with and without highway improvements. Note that alternatives Line 8 and Line 6 result in the least emissions of carbon monoxide and hydrocarbons, whereas Line 1 and Line 7 result in the least emissions for nitrogen oxide.

Selective Area Study

An analysis for vehicular emissions was estimated from selected highway segments which connect three major intersections. This analysis was used to determine which alternative would result in the least emissions due to traffic flow through these intersections.

Highway segments included in selective area study:

1. Basic configuration, Line 8, Line 1 and Line 7 alternatives consisted of highway segments C, D, G, H and I.
2. Line 6 alternative consisted of highway segments C, D, G, H, I and P.

Findings:


1. Table 2.1 shows that even without improvements a decrease in emissions would result for the highway segments connecting the three major intersections. For the year 1985, any of the proposed alternatives would result in an additional decrease in carbon monoxide and hydrocarbon emissions. Except for Line 8, all other alternatives would also result in an additional decrease in nitrogen oxide emissions.
2. Table 2.2 indicates that the Line 6 alternative would result in a significant reduction in emissions over the connecting highway segment as compared to other alternatives.

Conclusion

1. Implementation of any of the proposed alternatives would for the year 1985, result in an additional decrease in overall emissions for carbon monoxide and hydrocarbons. The resulting increase in nitrogen oxide emissions would not have a significant impact on overall ambient air quality.
2. Implementation of the Line 6 alternative would result in the least emission over the highway segment connecting the three major intersections.

All traffic input data assumptions and calculations which were used in our analysis are available for your review at the Pollution Technical Review Branch

Very sincerely,


WALTER B. QUISENBERRY, M.D.
Director of Health

Enclosures

Appendix E

OVERALL AREA STUDY
TABLE 1.1. SUMMARY OF DAILY AND PEAK HOUR (A.M.)
ESTIMATED EMISSION RATES

HIGHWAY ALTERNATIVE	CO		HC		NO _x	
	1975	1985	1975	1985	1975	1985
Daily Emission Rate - grams/day						
Basic	622145	516351	92361	48447	119456	77502
Line 8		419805		40136		86381
Line 1		487239		45905		80507
Line 6		431329		40553		85815
Line 7		457978		46171		82915
Peak Hour (A.M.) Emission Rate - grams/hr.						
Basic	47819	39926	7102	3741	9368	5963
Line 8		32532		3109		6634
Line 1		37438		3522		6145
Line 6		33267		3126		6562
Line 7		35514		3569		6373

TABLE 1.2. SUMMARY OF PERCENTAGE CHANGE IN POLLUTANTS
FOR 1985 USING 1975 BASIC CONFIGURATION AS BASE YEAR

HIGHWAY ALTERNATIVE	DAILY			PEAK HOUR (A.M.)		
	CO	HC	NO _x	CO	HC	NO _x
Change Without Improvements - %						
Basic	-17.0	-47.5	-35.1	-16.5	-47.3	-36.3
Additional Change With Improvements - %						
Line 8	(-15.5)	(-9.0)	+7.4	(-15.5)	(-8.9)	+7.2
Line 1	- 4.7	-2.8	(+2.5)	- 5.2	-3.1	(+1.9)
Line 6	(-13.7)	(-8.5)	+7.0	(-13.9)	(-8.7)	+6.9
Line 7	- 9.4	-2.5	(+4.5)	- 9.2	-2.4	(+4.4)

Note: + denotes increase
- denotes decrease
() denotes most favorable configuration

Appendix E

SELECTIVE STUDY AREA - HIGHWAY
SEGMENTS C, D, G, H, I
TABLE 2.1. SUMMARY OF DAILY AND PEAK HOUR (A.M.)
ESTIMATED EMISSION RATES

HIGHWAY ALTERNATIVE	CO		HC		NO _x	
	1975	1985	1975	1985	1975	1985
Daily Emission Rate - grams/day						
Basic	174680	156299	26178	14121	32368	20281
Line 8		131991		12690		21592
Line 1		132397		12022		17510
*Line 6		108900		9742		13563
Line 7		139224		12563		17973
Peak Hour (A.M.) Emission Rate - grams/hr.						
Basic	14609	13151	2190	1189	2904	1710
Line 8		11123		1068		1818
Line 1		11038		1002		1459
*Line 6		8929		800		1116
Line 7		11651		1053		1509

*Highway segment "P" also included

TABLE 2.2. SUMMARY OF PERCENTAGE CHANGE IN POLLUTANTS
FOR 1985 USING 1975 BASIC CONFIGURATION AS BASE YEAR

HIGHWAY ALTERNATIVE	DAILY			PEAK HOUR (A.M.)		
	CO	HC	NO _x	CO	HC	NO _x
Change Without Improvements - %						
Basic	-10.5	-46.1	-37.3	-10.0	-45.7	-41.1
Additional Change With Improvements - %						
Line 8	-13.9	-5.5	+4.1	-13.9	-5.5	+3.7
Line 1	-13.7	-8.0	-8.6	-14.5	-8.5	-8.6
*Line 6	(-27.1)	(-16.7)	(-20.7)	(-28.9)	(-17.6)	(-18.9)
Line 7	- 9.8	- 6.0	- 7.1	-10.3	- 6.2	-6.9

Note: + denotes increase
- denotes decrease
() denotes most favorable configuration

*Highway segment "P" also included

Appendix E

AIR QUALITY ANALYSIS
FOR KUAKINI HIGHWAY REALIGNMENT

Utilizing the
Environmental Protection Agency's
"HIWAY" Computerized Model

by

Department of Transportation

Estimated 1-hour concentrations of carbon monoxide (CO) were calculated for receptor locations along the highway right-of-way line and at the nearest sensitive receptors off the highway. Analysis of these calculations indicated that receptors experiencing the worst concentrations were located along the westerly right-of-way line of Kuakini Highway between Palani Road and Hualalai Road. For 1985, the highest concentration of CO was 4.4 milligrams per cubic meter (mg/m^3) which would be experienced with Line 1 being constructed and the existing Kuakini Highway remaining unimproved. Should Kuakini Highway be improved (Lines 6 or 8), the highest level of CO would be 3.3 milligrams per cubic meter. This compares favorably with the 1975 concentration of 8.3 mg/m^3 and the State and Federal Standards of 10 mg/m^3 and 40 mg/m^3 , respectively.

The input data for Line 8 and a tabulation of the concentrations between Palani Road and Hualalai Road follow:

Appendix E

The emission factors were obtained from EPA's Compilation of Air Pollutant Emission Factors, AP-42, Supplement No. 2, September 1973.

DATA:

Peak hour traffic - 1044 vph (1975), 1700 vph (1985)

Traffic distribution - 75/25

Parallel wind

Stability class - F

Wind Speed - 1.0 meters/second

Vehicle operating speeds - 28 and 32 mph

Perpendicular Downwind distance from pavement
edge - 29 feet

Emission height - 0.6 meters

Height of limiting lid - 500 meters

Kuakini Highway Realignment

Project No. RF-011-1(14)

HIGHEST LEVEL OF CONCENTRATION

Alternatives	Carbon Monoxide Concentration* (mg/m ³)		
	Existing Condition 1975	1985	1995
1. No Improvement Kuakini Highway	8.3	5.1	6.7
2. Line 1 Kuakini Highway	---	.41	0.92
3. Line 6 or 8	8.3	3.3	4.4

* At ROW Line during peak hour

AIR QUALITY ANALYSIS
FOR KUAKINI HIGHWAY REALIGNMENT
UTILIZING THE
CALIFORNIA LINE SOURCE MODEL
(CALINE-2)

By

DEPARTMENT OF TRANSPORTATION

CALINE-2 is a simplified method of air quality analysis which has the direct capability of estimating the highest 1-hour and 8-hour carbon monoxide (CO) concentrations. The original version of the California Line Source Model utilized a system of equations based on the Gaussian line dispersion formula and in this respect, is very similar to the preceding "HIWAY" computerized model.

Analysis procedures were simplified through the development of nomographs; however, this revised technique became suitable only for low-volume urban and rural facilities where air quality is not a problem and only for first estimates of air quality impacts. 1/

Data and assumptions which were used in this study are shown below. Note that "worst case" conditions were simulated.

Parallel wind
Stability Class-F
Wind Speed - 2 mph
Background CO level = 1 to 2 ppm
0% Cold Starts, 0% Hot Starts
Traffic Forecasts 2/ (see TA 77-15)

1/ U. S. Department of Transportation, Federal Highway Administration, Fundamentals of Air Quality, Implementation Package 76-5, 1976

2/ State of Hawaii, Department of Transportation, Land Transportation Facilities Division, TA 77-15, September 1977

The concentration of CO was studied for a residence in the Kona Hillcrest subdivision (see attached map), located approximately 110 feet from the proposed highway (Line 1). The results are shown on the attached table, "Highest Level of Concentration."

From the table, it can be concluded that:

- (1) The proposed improvement is in compliance with Federal standards of 40 mg/m^3 and 10 mg/m^3 for the highest 1-hour and 8-hour CO concentrations, respectively.
- (2) This project is also in compliance with State standards which are 10 mg/m^3 and 5 mg/m^3 for 1-hour and 8-hour CO concentrations, respectively.
- (3) As a consequence of (1) and (2) above, further detailed studies are not required.

KUAKINI HIGHWAY REALIGNMENT
PROJECT NO. RF-011-1(14)
HIGHEST LEVEL OF CONCENTRATION

	1-HOUR (mg/m ³)	AVE: 8-HOUR (mg/m ³)
1975	3.69	3.25
1985	2.98	2.81
1995	2.93	2.77

TRAFFIC ASSIGNMENT PROJECT TA 77-15
KUAKINI HIGHWAY REALIGNMENT
PROJECT NO. RF-011-1(14)
SEPTEMBER 1977

PURPOSE:

Data requested by LT-PA for planning and air quality studies.

REQUIREMENTS:


1. Maximum peak 8-hour traffic for 1975, 1985, and 1995.
2. 1975, 1985, and 1995 maximum peak 8-hour and maximum peak 1-hour by 6000 gross vehicle weight and 8500 gross vehicle weight classifications for:
 - a. Percentage of Light Duty vehicles
 - b. " of Light Duty gas trucks
 - c. " of Heavy Duty diesel trucks
 - d. " of Heavy Duty gas trucks

BASIC CONDITIONS:

1. The traffic data developed for Scheme 1 and 2 of the proposed Kuakini Highway Realignment is to be used for this project.

ASSUMPTIONS:

1. Truck Weight Counting Station C-20-A, Mamalahoa Highway at Honolii Bridge, will be used to classify trucks by type and gross vehicle weight.
2. Station C-8-G, Kuakini Highway at Halehau Heiau, will be used to determine vehicle type classification percentages.
3. The ADTs from TA 76-6, Kuakini Highway Realignment, will be used for interpolating the required maximum peak 1-hour and maximum peak 8-hour traffic.
4. Traffic data derived at Continuous Counting Station CC-16, Mamalahoa Highway, 0.1 mile north of Kona Experimental Station Road, will be used to determine a comparison of the average and highest traffic of the year.



Planning Survey Engineer

St/
9/23/77

September 29, 1977

DATE

MEMORANDUM

TO: LT-PA

ATTN: G. Shigano

FROM: LT-PH

The following data are submitted for your information:

NAME OF PROJECT: Kuakini Highway Realignment

PROJECT NO: RF-011-1(14)

SECTION: Palani Road to Kuakini Highway intersection

TRAFFIC DATA:

	<u>Maximum Peak-Hour</u>	<u>Maximum Peak 8-Hour</u>
Current ADT (1975)	<u>430</u>	<u>1650</u>
Interim ADT (1985)	<u>930</u>	<u>3600</u>
Design ADT (1995)	<u>1390</u>	<u>5350</u>

% Light Duty Vehicles 82.3 77.8

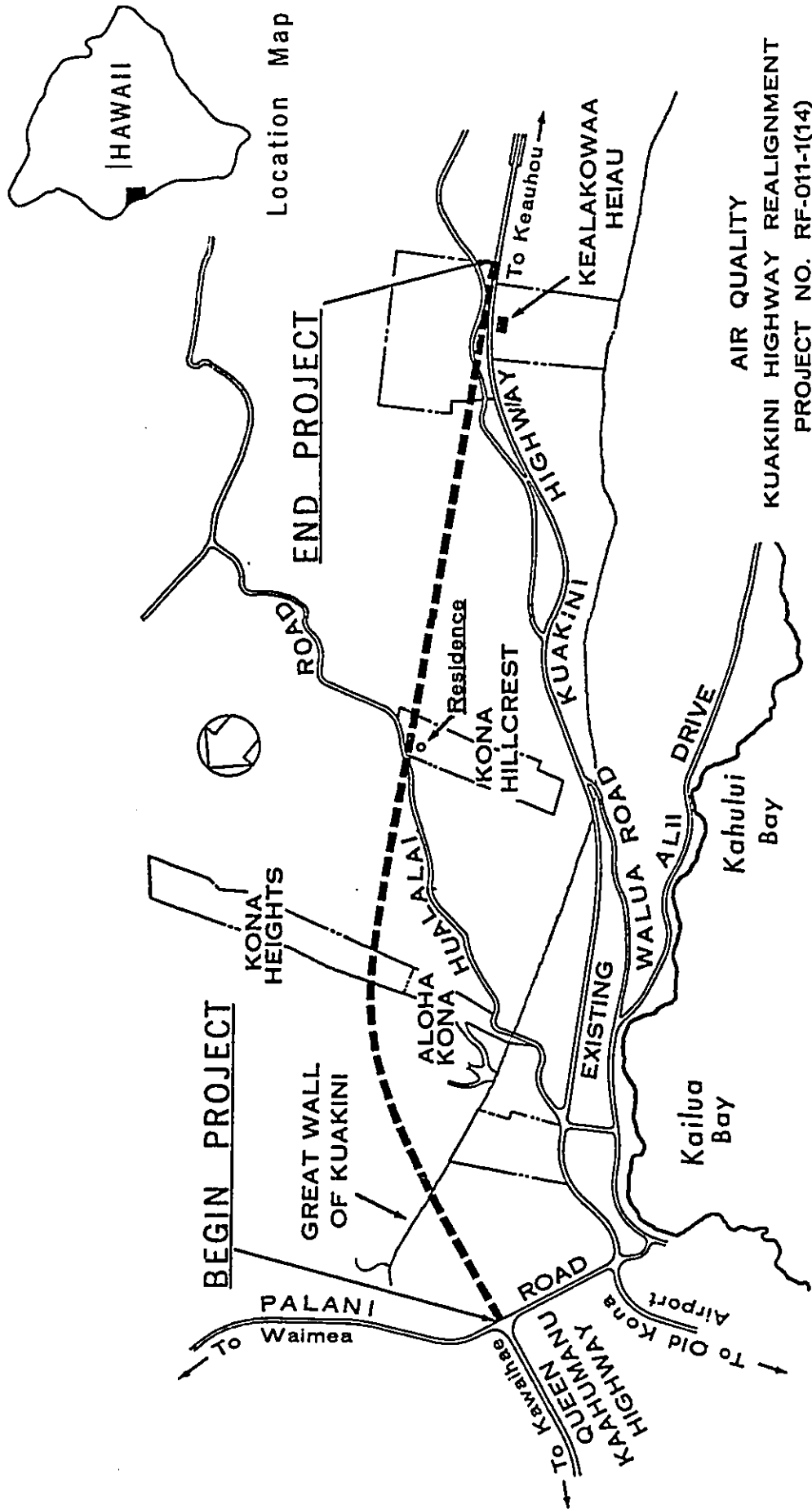
	<u>Maximum Peak-Hour*</u>				<u>Maximum Peak 8-Hour**</u>			
	<u><6000</u>	<u>>6000</u>	<u><8500</u>	<u>>8500</u>	<u><6000</u>	<u>>6000</u>	<u><8500</u>	<u>>8500</u>
% Light Duty Gas Trucks	<u>11.3</u>	<u>----</u>	<u>15.5</u>	<u>----</u>	<u>12.1</u>	<u>----</u>	<u>16.7</u>	<u>----</u>
% Heavy Duty Gas Trucks	<u>----</u>	<u>5.2</u>	<u>----</u>	<u>1.0</u>	<u>----</u>	<u>6.8</u>	<u>----</u>	<u>2.2</u>
% Heavy Duty Diesel Trucks	<u>----</u>	<u>1.2</u>	<u>----</u>	<u>1.2</u>	<u>----</u>	<u>3.3</u>	<u>----</u>	<u>3.3</u>

*By Gross Vehicle Weight

Ref. No. TA 77-15

Page 2 of 2

Appendix E



AIR QUALITY
 KUAKINI HIGHWAY REALIGNMENT
 PROJECT NO. RF-011-1(14)

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
 JULY 1977

APPENDIX F

WATER QUALITY - DOH

George R. Ariyoshi
GOVERNOR



George Yuen
DIRECTOR OF HEALTH
Audrey W. Mertz
DEPUTY DIRECTOR OF HEALTH

DIRECTOR'S OFFICE

JUL 11 12 35 PM 1975

TRANSPORTATION

DEPARTMENT OF HEALTH

STATE OF HAWAII
P. O. BOX 918
HILO, HAWAII 96720

RECEIVED
JUL 11 4 00 PM 1975
DEPT. OF HEALTH
HONOLULU, HAWAII

July 8, 1975

Mr. E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Through: District Health Officer, Hawaii *AT*

Subject: Kuakini Highway Realignment, Island of Hawaii
Project No. R.F.-011-2 (14), Water Quality

We concur that the proposed highway construction will not have an adverse impact on the water quality of the area.

Endre Toth

Endre Toth, P.E.
Environmental Engineer, Hawaii

cc: Mr. G. Kodani

APPENDIX G

DRAFT EIS AND EIS PREPARATION

NOTICE MAILING LISTS

DRAFT ENVIRONMENTAL IMPACT STATEMENT

AND

EIS PREPARATION NOTICE

MAILING LIST

<u>FEDERAL AGENCIES</u>		<u>No. of DEIS Copies</u>
o Agricultural Stabilization and Conservation Service U.S. Department of Agriculture	1833 Kalakaua Avenue Honolulu, Hawaii 96815	1
o Soil Conservation Service U.S. Department of Agriculture	Alexander Young Building Room 440 Honolulu, Hawaii 96813	1
Forest Service U.S. Department of Agriculture	530 South Hotel Street Honolulu, Hawaii 96813	1
U.S. Department of Agriculture	Office of the Secretary Washington, D.C. 20250	1
o * Federal Aviation Administration Department of Transportation	1833 Kalakaua Avenue Honolulu, Hawaii 96815	1
o Director, Office of Environ- mental Project Review U.S. Department of the Interior	18th and "C" Streets, NW Washington, D.C. 20242	12
Department of Housing and Urban Development	P.O. Box 3377 Honolulu, Hawaii 96801	1
o Department of Housing and Urban Development	450 Golden Gate Avenue P.O. Box 36003 San Francisco, CA 94102	1
o Department of Health, Education and Welfare	Federal Office Building 50 Fulton Street San Francisco, CA 94102	1
* Council on Environmental Quality	722 Jackson Place, NW Washington, D.C. 20006	5

*Not sent EIS Preparation Notice

o Submitted comments on the Draft EIS

Appendix G

National Bureau of Standards U. S. Department of Commerce	Administration Building Washington, D. C. 20234	1
U. S. Department of Commerce National Marine Fisheries Service	2570 Dole Street Honolulu, Hawaii 96822	1
Environmental Protection Agency	Bishop Trust Building 1000 Bishop Street, Rm. 601 Honolulu, Hawaii 96813	1
oEnvironmental Protection Agency Region IX	100 California Street San Francisco, CA 94111	2
oAdvisory Council on Historic Preservation Attn: Mr. Robert Garvey Executive Director	801 19th Street NW Suite 618 Washington, D. C. 20006	1
oDepartment of Commerce Attn: Dr. Sydney R. Galler Deputy Assistant	Secretary for Environ- mental Affairs Washington, D.C. 20230	1
Mr. Ernest E. Sligh, Director Environmental Impact Division Office of Environmental Programs Federal Energy Administration	New Post Office Building 12th & Pennsylvania Ave, NW Washington, D.C. 20461	5

1
1
1
2
1
1
5

Congressional Representatives

o The Honorable Hiram L. Fong	2121 Dirksen Senate Office Bldg. Washington, D. C. 20510	1
The Honorable Daniel K. Inouye	442 Russell Senate Office Bldg. Washington, D. C. 20510	1
The Honorable Spark M. Matsunaga	442 Cannon House Office Bldg. Washington, D. C. 20515	1
The Honorable Patsy T. Mink	2338 Rayburn House Office Bldg. Washington, D. C. 20515	1

* State Legislators

The Honorable Jack K. Suwa Representative, 1st District	P. O. Box 8 Kurtistown, Hawaii 96760	1
The Honorable Stanley H. Roehrig Representative, 2nd District	80 Pauahi Street Hilo, Hawaii 96720	1
The Honorable Herbert A. Segawa Representative, 2nd District	P. O. Box 1476 Hilo, Hawaii 96720	1
The Honorable Yoshito Takamine Representative, 3rd District	P. O. Box 608 Honokaa, Hawaii 96727	1
The Honorable Stanley I. Hara Senator, 1st District	203 Kilauea Avenue Hilo, Hawaii 96720	1
The Honorable Richard Henderson Senator, 1st District	P. O. Box 747 Hilo, Hawaii 96720	1
The Honorable John T. Ushijima Senator, 1st District	P. O. Box 964 Hilo, Hawaii 96720	1
The Honorable Minoru Inaba Representative, 4th District	P. O. Box 233 Kealakekua, Hawaii	1

State Agencies

o Department of Agriculture	Attn: John Farias, Jr.	1
o Department of Accounting and General Services	Attn: Hideo Murakami	1
o Department of Defense	Attn: Maj. Gen. Valentine A. Siefermann	1
Department of Education	Attn: James Eddington	1
o Department of Health	Attn: Shinji Soneda	3
o Department of Land and Natural Resources	Attn: Christopher Cobb	3
o Department of Planning and Economic Development	Attn: Hideto Kono	1
Department of Social Services and Housing	Attn: Ronald Lin	1
o Office of Environmental Quality Control	Attn: Dr. Richard Marland	10

University of Hawaii

o Environmental Center	Attn: Dr. Doak Cox Maile Way 10 Honolulu 96822	4
Water Resources Research Center	Attn: Dr. Stephen Lau 2540 Dole Street Honolulu 96822	1

* State Public Libraries

State Library Branch		15
Kailua-Kona Library	P.O. Box 1688 Kailua-Kona 96740	1

* Other Public Libraries

University of Hawaii (Sinclair and Hamilton)	Attn: Mrs. Muraoka	2
DPED Library	Attn: Anthony Oliver c/o DPED	1
Municipal Library	City & County of Honolulu Honolulu	1
State Archives		
Legislative Reference Bureau		

* News Media

Honolulu Star Bulletin	Attn: Mr. Hobart Duncan 605 Kapiolani Blvd. Honolulu 96813	1
Honolulu Advertiser	Attn: Mr. George Chaplin 605 Kapiolani Blvd. Honolulu 96813	1
Hawaii Tribune Herald, Ltd.	P.O. Box 767 Hilo, Hawaii 96720	1
West Hawaii Today	P.O. Box D Kealahou, Hawaii 96750	1

COUNTY OF HAWAII PROJECTS

o County Council County of Hawaii	25 Aupuni Street Hilo, Hawaii 96720	1
o Department of Planning Attn: Mr. Raymond Suefuji	25 Aupuni Street Hilo, Hawaii 96720	2
o Department of Public Works Attn: Mr. Edward Harada	25 Aupuni Street Hilo, Hawaii 96720	1
o Department of Parks and Recreation Attn: Mr. Milton Hakoda	25 Aupuni Street Hilo, Hawaii 96720	1
o Department of Water Supply Attn: Mr. Akira Fujimoto	P. O. Box 1820 Hilo, Hawaii 96720	1
Department of Research and Development Attn: Mr. Clarence Garcia	25 Aupuni Street Hilo, Hawaii 96720	1

Public Utilities

Hawaiian Telephone Company	115 Kalakaua Street Hilo, Hawaii 96720	1
o Hawaii Electric Light Co., Inc.	P. O. Box 1027 Hilo, Hawaii 96720	1
Gasco, Inc., Hawaii Division	945 Kalaniana'ole Avenue Hilo, Hawaii 96720	1

Kona Civic Organizations

- o Kona Outdoor Circle
President - Peal Rein
c/o Ron Burla & Assoc.
P. O. Box 1148
Kailua-Kona, Hawaii 96740
- Kona Civic Club
c/o Rufus Spaulding
Kailua-Kona, Hawaii 96740
- Ms. Clara Kahumoku
Hawaiian Civic Club
RR #1, Box 201B
Kailua-Kona, Hawaii 96740
- Mr. Harvey Yoshimura
Kona Jaycees
P. O. Box 385
Holualoa, Hawaii 96725
- Mr. Jim Potter
West Hawaii Committee
P. O. Box 1761
Kailua-Kona, Hawaii 96740
- Mr. Bill Parish
Kona Soil and Water Conservation
Kainaliu-Kona, Hawaii 96750
- Ms. Virginia Isbell
Kona Citizens Planning Council
Box 926
Kealahou, Hawaii 96750
- Mr. W. J. Paris, Jr.
Cattlemen's Association
Kealahou, Hawaii 96750
- Ms. Jenny Parijs
Life of the Land
General Delivery
Pahoa, Hawaii 96778
- Mr. Joe Tassil
Organizations Kona
RR #1, Box 249-B
Holualoa, Hawaii 96725
- o Mr. Dave Walker
Kona Board of Realtors
c/o McCormack Realty
P. O. Box 1360
Kailua-Kona, Hawaii 96740
- o Mr. George Brenner, President
Kona Chamber of Commerce
P.O. Box 635
Kailua-Kona, Hawaii 96740
- o Mr. Fred Honda, President
Kona Hotel Managers Association
Keauhou Beach Hotel
Keauhou, Kona, Hawaii 96740
- Kona Traffic Committee
c/o Joseph Bottero
Kailua-Kona, Hawaii 96740
- Mr. Alan Tyler
Kona Conservation Group
RR #1, Box 125
Captain Cook, Hawaii 96704
- Historic Hawaii Foundation
2616 Pali Highway
Honolulu, Hawaii 96817
- o Mr. W. Y. Thompson
Executive Secretary
Hawaii Leeward Planning
Conference
P.O. Box 635
Kailua, Hawaii 96740

APPENDIX H

COMMENTS AND RESPONSES
ON
EIS PREPARATION NOTICE

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
OFFICE OF THE GOVERNOR
550 HALEKAUWILA ST.
ROOM 301
HONOLULU, HAWAII 96813

DIRECTOR'S OFFICE

RICHARD E. MARLAND, PH.D.
DIRECTOR

TELEPHONE NO.
548-8915

OCT 24 1 18 PM '75

DEPT. OF
TRANSPORTATION

October 23, 1975

MEMORANDUM

TO: The Honorable E. Alvey Wright, Director
Department of Transportation

FROM: *for* Richard E. Marland, Director *R. E. Marland*
Office of Environmental Quality Control

SUBJECT: Kuakini Highway Realignment, Island of Hawaii,
Project No. RF-011-1(14)

Thank you for the opportunity to comment on the subject project during your consultation process. However, due to our present staff shortage, we are not involving ourselves at the consultation stage.

We will inform you when and if we are able to participate in the consultation process.

Attachment

Appendix H

2736

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
1428 SO. KING STREET
HONOLULU, HAWAII 96814

JOHN FARIAS, JR.
CHAIRMAN, BOARD OF AGRICULTURE
DIRECTOR'S OFFICE
DEPUTY TO THE CHAIRMAN

Nov 10 8 25 AM '75

DEPT. OF
TRANSPORTATION

2835
2836

November 5, 1975

MEMORANDUM

To: E. Alvey Wright, Director
Department of Transportation

Subject: Request for Comments
Kuakini Highway Realignment,
Island of Hawaii,
Project No. RF-011-1(14)

The Department of Agriculture has reviewed this EIS Preparation Notice and has determined that Line 1 will have the greatest impact on agricultural land use potential. The other alternatives will serve areas where the urbanization process is well advanced. Choice of Line 1 would tend to expand urbanization in a mauka direction.

We request that this Department be kept informed on this environmental impact statement.

Thank you for the opportunity to comment.

John Farias, Jr.
John Farias, Jr.
Chairman, Board of Agriculture

NOV 10 2 10 PM 1975

Appendix H

11-10-75 11:10 AM

GEORGE R. ARIYOSHI
GOVERNOR



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

December 3, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA
2.26021

Mr. John Farias, Jr.
Chairman, Board of Agriculture
Department of Agriculture
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Farias:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your comments on the project's EIS
Preparation Notice.

The impact of Line 1 upon agricultural lands will be
addressed in the draft EIS as an unavoidable adverse impact.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
 REGIONAL OFFICE
 50 FULTON STREET
 SAN FRANCISCO, CALIFORNIA 94102
 Office of Environmental Affairs

2667

RECEIVED
 OFFICE OF
 THE REGIONAL DIRECTOR
 OCT 16 2 11 PM '75

October 14, 1975

E. Alvey Wright
 Director
 Department of Transportation
 869 Punchbowl Street
 Honolulu, Hawaii 96813

Your Reference: HWY-PA
 2.24763

DIRECTOR'S OFFICE
 OCT 16 12 40 PM '75
 DEPT. OF
 TRANSPORTATION

Dear Mr. Wright:

The Preparation Notice for the Kuakini Highway Realignment Project has been reviewed.

The material provided does not provide adequate information to permit a complete review of all aspects related to the concerns of the Department of Health, Education and Welfare. We assume that the growth inducing potential of this project; the cumulative effects of this project and others in the area, and; the increased requirements for public services (energy, water, sewerage, schools, hospitals, etc.) will be addressed in the draft EIS.

Sincerely,

James D. Knochenhauer
 Regional Environmental Officer

Appendix H

RECEIVED
 OCT 16 1975
 DIRECTOR'S OFFICE

GEORGE R. ARIYOSHI
GOVERNOR



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

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

November 28, 1975

IN REPLY REFER TO:

HWY-PA
2.25923

Mr. James D. Knochenhauer
Regional Environmental Officer
Department of Health, Education
and Welfare
Regional Office
50 Fulton Street
San Francisco, California 94102

Dear Mr. Knochenhauer:

Subject: Kuakini Highway Realignment,
Island of Hawaii
Project No. RF-011-1(14)

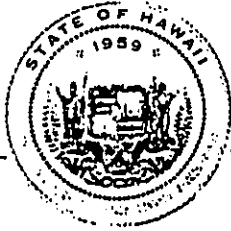
Thank you for your letter of October 14, 1975, regarding your review of the Environmental Impact Statement Preparation Notice for the subject project.

Please be assured that the draft EIS will attempt to address the concerns of the Department of Health, Education, and Welfare. We sincerely appreciate your interest in this project, and will be forwarding a copy of the draft EIS for your review.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H



DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

Kamamalu Building, 250 South King St., Honolulu, Hawaii • Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

November 19, 1975

RECEIVED

GEORGE R. ARIYOSHI
Governor

HIDETO KONO
Director

FRANK BRIVANEK
Deputy Director

NOV 21 2 07 PM '75

DEPARTMENT OF TRANSPORTATION
DIVISION

Ref. No. 5858

DIRECTOR'S OFFICE
NOV 21 12 48 PM '75
DEPT. OF TRANSPORTATION

The Honorable E. Alvey Wright
Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:

Subject: Environmental Impact Statement Preparation Notice for
Kuakini Highway Realignment, Kailua-Kona, Hawaii,
Project No. RF-011-1(14)

Thank you for your letter of October 6, 1975, requesting our
comments regarding the subject EIS Preparation Notice.

We suggest your EIS discuss the anticipated impacts of highway
realignment on adjoining land uses, development trends and related demands
for public facilities and services in the area. Accordingly, we suggest
close coordination of the proposed project with the appropriate Hawaii
County agencies.

It is felt that provisions for relocative assistance to displaced
families and businesses receive further discussion.

Sincerely,

Frank Brivaneck
for HIDETO KONO

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

December 4, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA
2.26034

The Honorable Hideto Kono
Director
Department of Planning and
Economic Development
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Kono:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your comments on the EIS Preparation Notice.

Your suggestions will be followed in developing the draft
environmental impact statement.

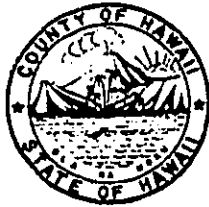
Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

HERBERT T. MATAYOSHI
MAYOR

EDWARD K. HARADA
CHIEF ENGINEER



COUNTY OF HAWAII
DEPARTMENT OF PUBLIC WORKS
25 AUPUNI ST.
HILO, HAWAII 96720

1971
BUREAUS AND DIVISIONS:
AUTOMOTIVE EQUIPMENT & MOTOR POOL
BUILDING CONSTRUCTION & INSPECTION
PLANS AND SURVEYS
ROAD CONSTRUCTION AND MAINTENANCE
SEWERS AND SANITATION
TRAFFIC SAFETY AND CONTROL

October 21, 1975

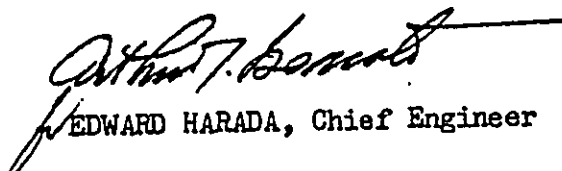
OCT 23 1 49 PM '75
DEPT. OF TRANSPORTATION
DIRECTOR'S OFFICE

Admiral E. Alvey Wright, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

SUBJECT: Letter HWY-PA 2.24763
Re: Environmental Impact Statement Preparation Notice
Kuakini Highway Realignment
Island of Hawaii
Project No. RF-011-1(14)

Thank you for the opportunity to review the subject E.I.S. notice.

Line 1 proposal appears to be the preferable recommended North-South route. However, in the design phase particular attention should be given to the drainage study at Kona Heights Subdivision and the connection across Hualalai Road. We also suggest one major east-west connector other than the existing Palani Road be considered in the study. You will note on the map in the enclosed copy of the Alii Highway Public Hearing Presentation (Alii Drive proposed realignment) that a suggested connection between the proposed Line 1 route and Kuakini Highway is delineated on the south side of the Kona Hillcrest Subdivision. The corridor for the Alii Drive realignment up to Kuakini Highway was adopted pursuant to public hearing.


EDWARD HARADA, Chief Engineer

Enc.

cc: Mayor
Planning Department

OCT 25 3 19 PM '75

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
DOUGLAS S. SAKAMOTO
WALLACE AOKI

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

IN REPLY REFER TO:
HWY-PA
2.25974

December 1, 1975

Mr. Edward Harada
Chief Engineer
County of Hawaii
Department of Public Works
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Harada:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your comments on the EIS preparation notice. Please be assured that adequate drainage facilities will be provided at the Kona Heights Subdivision and the Hualalai Road intersection.

Construction of east-west connector roads are not a part of this study. However, we have no objections to the extension of Alii Drive to Line 1 should it be adopted.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

2936

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



DIRECTOR'S OFFICE

CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

DEPUTY TO THE CHAIRMAN
ROBERT A. HAMASU

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HONOLULU, HAWAII 96809

DEPT. OF TRANSPORTATION

DIVISIONS:
AIRCRAFT ENGINES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

NOV 24 1 42 PM 1975

NOV 24 8 01 AM 1975

November 20, 1975

Honorable E. Alvey Wright
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Admiral Wright:

We have reviewed the EIS preparation notice for the Kuakini Highway Realignment.

Historic and archaeological sites will be affected by this project. Accordingly, it is being handled under procedures established by federal historic preservation laws. Consultations are now in progress between your department and the State Historic Preservation Officer.

We have also examined the various corridors with a view toward installing a waterline in the corridor selected. We find corridors 6 or 8 require lines capable of greater pressures and will result in critical hydraulic problems. From this stand, corridor 1 would be preferable.

Very truly yours,

Christopher Cobb
CHRISTOPHER COBB
Chairman of the Board

cc: Ms. Jane Silverman
Mr. Robert Chuck

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

December 4, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES G. SWANSON

IN REPLY REFER TO:
HWY-PA
2.26035

The Honorable Christopher Cobb
Chairman of the Board
Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Cobb:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for advising us that Lines 6 and 8 will encounter critical hydraulic problems. This will be included in the draft EIS as an adverse impact.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H



IN REPLY REFER TO:

L7619
(WR)PSE

United States Department of the Interior DIRECTOR'S OFFICE

NATIONAL PARK SERVICE
WESTERN REGION
450 GOLDEN GATE AVENUE, BOX 36063
SAN FRANCISCO, CALIFORNIA 94103

November 14, 1975

2899
NOV 19 12 44 PM '75
NOV 19 1975
DEPT. OF TRANSPORTATION

Mr. E. Alvey Wright
Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:

We have reviewed the Environmental Impact Statement Preparation Notice for Kuakini Highway Realignment Project and offer the following comments for your consideration. These comments are provided on a technical assistance basis only as they do not represent formal review comments from the Department of the Interior.

We recommend that an archeological survey be conducted by a professional archeologist over all areas where ground disturbance will occur. If significant cultural resources are discovered they should be described and evaluated for their National Register potential. If they meet the criteria for nomination, as set forth in Title 36, CFR 800.10, they should be nominated to the National Register of Historic Places.

The environmental statement should indicate that the National Register of Historic Places has been consulted to determine whether or not National Register properties are to be affected by the project.

If National Register properties are to be affected, procedures established in Section 106 of the National Historic Preservation Act of 1966 should be followed.

The environmental statement should also indicate that the State Historic Preservation Officer has been consulted or include a copy of his comments regarding the project's effects upon properties either listed on or in the process of nomination to the National Register of Historic Places.



Appendix H

Copies of all archeological reports should be sent to the National Park Service, Western Archeological Center, P.O. Box 49008, Tucson, Arizona 85717 in accordance with Section 3(a) of Public Law 93-291.

We appreciate the opportunity to comment on this preparation notice and hope these comments will be helpful in developing a draft environmental statement for this project.

Sincerely,

Bruce M. Kilgore

Bruce M. Kilgore
Associate Regional Director,
Professional Services

GEORGE R. ARIYOSHI
GOVERNOR



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

December 4, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.26031

Mr. Bruce M. Kilgore
Associate Regional Director,
Professional Services
National Park Service,
Western Region
U.S. Department of the Interior
450 Golden Gate Avenue
Box 36063
San Francisco, California 94102

Dear Mr. Kilgore:

Subject: Kuakini Highway Realignment
Project No. F-011-1(14)

Thank you for your comments relative to the project's impact on cultural resources.

No sites listed in the National Register will be affected; however, the State Historic Preservation Officer and the Federal Highway Administration have determined that two eligible sites, the Kona Field System and the Great Wall of Kuakini may be adversely affected. Therefore, we will be complying with the provisions of Section 106 of the National Historic Preservation Act of 1966 and Title 36, CFR, Part 800, in developing the draft environmental statement.

Thank you for your assistance. We will be requesting your office's review of the draft EIS.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

KONACOAST

December 4, 1975

State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Attention: Mr. Kenneth Au, Project Manager

Subject: Request for Comments
Kuakini Highway Realignment
Island of Hawaii
Project No. RF-011-1(14)

Gentlemen:

The possible routing alternates for the subject project were thoroughly discussed in public hearings in 1970. At that time, the Kona Chamber of Commerce went on record, together with an overwhelming majority of Konans, (and we have yet to find a dissenting voice, incidentally) as favoring Line No. 1.

That Line presents by far the least amount of disruption to Kailua Village and provides the greatest amount of facility for access between South Kona and North Kona and South Kohala. It provides a route that maintains a certain amount of elevation and momentum for the trucks that carry goods into South Kona from the Port of Kawaihae, thus saving both fuel and time, and aiding in maintaining a cost of living at least not too much greater than that of Honolulu.

Environmentally, Lines 6 and 8 would decimate the village atmosphere of Kailua with the heavier traffic loading, the attendant increase in fumes and noise, and the increase in danger to the pedestrian traffic we are attempting to tailor the village around.

We feel that Line No. 1 passes through an area that can sustain the type of construction proposed with relatively mild disruption to the existing environment. In the subject area there are no areas of truly native vegetation, only Hale Koa and pastureland.

Appendix H

Mr. Kenneth Au, Project Manager
December 4, 1975
Page Two

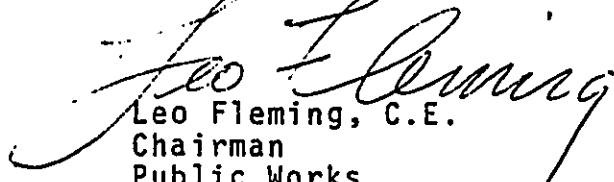
From a public safety aspect also; in times of eruption and tsunami, as we had this past weekend, we must have emergency access that is not connected to Alii Drive. This was again emphasized to us as it has been in the past in time of tornado and heavy rains with flooding.

In summation, we feel strongly that there can be no alternative routing but Line No. 1 and vigorously support same. We prefer to work with, rather than against government, but would be forced into an adversary position if any other routing were selected.

We thank you for this opportunity to comment and ask that we be kept informed on your progress on what we consider to be a vital transportation link in Kona's immediate future.

Sincerely,

KONA CHAMBER OF COMMERCE



Leo Fleming, C.E.
Chairman
Public Works
and Transportation Committee

LF:ma

cc: Ed Harada
Charles Schuster

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

January 8, 1976

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA
2.26544

Mr. Leo Fleming, C.E.
Chairman
Public Works and
Transportation Committee
Kona Chamber of Commerce
P.O. Box 635
Kailua-Kona, Hawaii 96740

Dear Mr. Fleming:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your comments on the EIS Preparation Notice.

The draft EIS will contain the results of a quantitative analysis for noise and air pollution. Generally, noise levels will be lowered along Kuakini Highway should Line 1 be constructed. On the other hand, the lowest projection for carbon monoxide concentrations along Kuakini Highway will occur if Line 6 or 8 is constructed. However, these concentrations will not create any air pollution problems as they are well below State and Federal Standards.

We agree that Line 1 will have minimal impacts to the environment. However, we have been informed by the State Historic Preservation Officer that two historic sites eligible for the National Register, the Great Wall of Kuakini and the Kona Field System, will be adversely affected. We are now working with them to ensure that proper mitigation measures are taken prior to any construction.

Appendix H

Mr. Leo Fleming
Page 2

HWY-PA 2.26544

Thank you for voicing your support for Line 1. We look forward to your participation at the upcoming informational meeting.

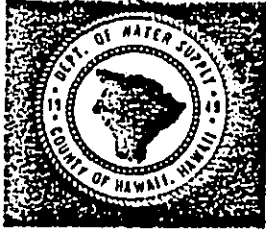
Sincerely,



E. ALVEY WRIGHT
Director

Appendix H

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DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

P. O. BOX 1820

HILO, HAWAII 96720

25 AUPUNI STREET

2647

October 10, 1975

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DEPT. OF
TRANSPORTATION

OCT 14 8 15 AM '75

DIRECTOR'S OFFICE

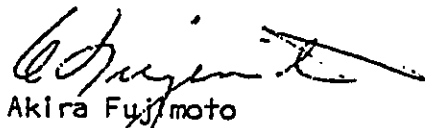
Mr. E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Re: Proposed Kuakini Highway Realignment, Island of Hawaii
Project No. RF-011-1(14)

This is in reference to your letter of October 6 requesting our comments on the proposed alternate routes for the Kuakini Highway realignment.

As you may know, we want to install a waterline with the proposed realignment project and line No. 1 would be perfect for us. We, therefore, request that you consider choosing this alignment.

Thank you for allowing us to comment on your proposed project.


Akira Fujimoto
Manager

WHS

Appendix H

... Water brings progress...

GEORGE R. ARIYOSHI
GOVERNOR



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

November 14, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA
2.25351

Mr. Akira Fujimoto, Manager
Department of Water Supply
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Fujimoto:

Subject: Kuakini Highway Realignment
Island of Hawaii
Project No. RF-011-1(14)

Thank you for your letter dated October 19, 1975, stating your preference of Line 1 for the subject project.

Collocation of your waterline will be considered during the project's design phase. Please be assured that procedures have been developed to inform you of our progress.

We sincerely appreciate your interest. If you have any questions, please contact us at your earliest convenience.

Sincerely,

Ryokichi Higashionna
for E. ALVEY WRIGHT
Director

NS:pz/km

Appendix H

2720

Advisory Council
On Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

DIRECTOR'S OFFICE

OCT 22 1 51 PM '75

October 16, 1975

DEPT. OF
TRANSPORTATION

Mr. E. Alvey Wright
Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:

This is in response to your request of October 6, 1975 for comments to assist in the preparation of an Environmental Impact Statement for the Kuakini Highway Realignment, Project No. RF-011-1(14), Hawaii County, Hawaii. Pursuant to Section 106 of the National Historic Preservation Act of 1966 and Sections 1(3) and 2(b) of Executive Order 11593, "Protection and Enhancement of the Cultural Environment" of May 13, 1971, the Advisory Council is charged with the responsibility of providing Federal agencies with comments on their undertakings which affect cultural resources. Until the Council has been notified by a Federal agency that it has determined an undertaking will affect a property included in or eligible for inclusion in the National Register of Historic Places, the Council is unable to comment.

The Council on Environmental Quality's guidelines for compliance with the National Environmental Policy Act of 1969 directs Federal agencies to forward copies of environmental statements prepared for undertakings which will have an impact on historical resources to the Advisory Council for review and comment. Because the Federal Highway Administration is involved in the proposed development of the Kuakini Highway Realignment a copy of the environmental statement will be sent to the Advisory Council for review and comment because of the project's relationship to the Great Wall of Kuakini and other cultural resources in the area included in or eligible for inclusion in the National Register.

Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council will be unable to provide substantive comments on the environmental statement unless it contains evidence of the following:

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

Appendix H

- I. Compliance with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470[f]). The Council must have evidence that the most recent listing of the National Register of Historic Places has been consulted (see Federal Register, February 4, 1975 and monthly supplements each first Tuesday thereafter) and that either of the following conditions is satisfied:
 - A. If no National Register property is affected by the project, a section detailing this determination must appear in the environmental statement.
 - B. If a National Register property is affected by the project, the environmental statement must contain an account of steps taken in compliance with Section 106 and a comprehensive discussion of the contemplated effects on the National Register property. (36 C.F.R. Part 800 details compliance procedures.)

- II. Compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" of May 13, 1971.
 - A. Under Section 2(a) of the Executive Order, Federal agencies are required to locate, inventory, and nominate eligible historic, architectural and archeological properties under their control or jurisdiction to the National Register of Historic Places. The results of this survey should be included in the environmental statement as evidence of compliance with Section 2(a).
 - B. Until the inventory required by Section 2(a) is complete, Federal agencies are required by Section 2(b) of the Order to submit proposals for the transfer, sale, demolition, or substantial alteration of federally owned properties eligible for inclusion in the National Register to the Council for review and comment. Federal agencies must continue to comply with Section 2(b) review requirements even after the initial inventory is complete, when they obtain jurisdiction or control over additional properties which are eligible for inclusion in the National Register or when properties under their jurisdiction or control are found to be eligible for inclusion in the National Register

subsequent to the initial inventory.

The environmental statement should contain a determination as to whether or not the proposed undertaking will result in the transfer, sale, demolition or substantial alteration of eligible National Register properties under Federal jurisdiction. If such is the case, the nature of the effect should be clearly indicated as well as an account of the steps taken in compliance with Section 2(b). (36 C.F.R. Part 800 details compliance procedures.)

- C. Under Section 1(3), Federal agencies are required to establish procedures regarding the preservation and enhancement of non-federally owned historic architectural, and archeological properties in the execution of their plans and programs.

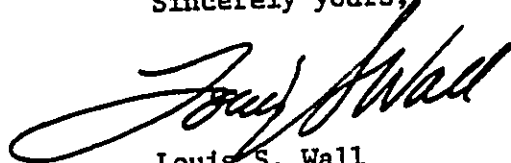
The environmental statement should contain a determination as to whether or not the proposed undertaking will contribute to the preservation and enhancement of non-federally owned districts, sites, buildings, structures and objects of historical, architectural or archeological significance.

III. Contact with the State Historic Preservation Officer.

The procedures for compliance with Section 106 of the National Historic Preservation Act of 1966 and the Executive Order 11593 require the Federal agency to consult with the appropriate State Historic Preservation Officer. The State Historic Preservation Officer for Hawaii is Jane L. Silverman, Chairman, Department of Land and Natural Resources, P. O. Box 621, Honolulu, Hawaii 96809.

Should you have any questions or require any additional assistance, please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946.

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

November 28, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.25924

Mr. Louis S. Wall
Assistant Director
Office of Review and Compliance
Advisory Council on Historic
Preservation
1522 K Street N.W.
Washington, D. C. 20005

Dear Mr. Wall:

Subject: Kuakini Highway Realignment,
Island of Hawaii
Project No. RF-011-1(14)

Thank you for your letter dated October 16, 1975,
regarding the Environmental Impact Statement Preparation
Notice for the subject project.

Please be assured that this project will comply with
the procedures set forth in 36 C.F.R. Part 800 and that the
concerns of the Advisory Council will be properly addressed.
The State Historic Preservation Officer (SHPO) has been
consulted, and has recently made a "determination of adverse
effect" relative to historic resources in the project vicinity.
Documentation of the coordinations between the SHPO and the
Federal Highway Administration will be contained in the draft
EIS.

We sincerely appreciate your comments and recommendations
and will look to your office for guidance on historical matters.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

2755



WEST HAWAII COMMITTEE

POST OFFICE BOX 1761 / KAILUA-KONA, HAWAII 96740

October 27, 1975

Mr. E. Alvey Wright, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

RE: HWY-PA
2@24763

DIRECTOR'S OFFICE
OCT 29 12 44 PM '75
DEPT. OF
TRANSPORTATION

Subject: Request for Comments, Kuakini Highway Realignment,
Island of Hawaii, Project No. RF-011-1 (14)

West Hawaii Committee fully supports Line 1 as the best
alternative for the above project.

Line 1 will divert more thru traffic from the Kailua Village-
Kuakini Highway area, and greatly lessen the growing traffic
congestion on Kuakoni from Palani Road to Walua Road. Thus,
providing more safety and better driving conditions for all.

Sincerely,

James L. Potter
James L. Potter
President

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
859 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

E. ALVEY WRIGHT
DIRECTOR
DEPUTY DIRECTORS
DOUGLAS S. SAKAMOTO
WALLACE AOKI

December 1, 1975

IN REPLY REFER TO:
HWY-PA
2.25973

Mr. James L. Potter
President
West Hawaii Committee
P. O. Box 1761
Kailua-Kona, Hawaii 96740

Dear Mr. Potter:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for informing us of the West Hawaii Committee's position that Line 1 will provide safety and better driving conditions for all.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

2739

**UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE**

440 Alexander Young Building, Honolulu, Hawaii 96813

October 22, 1975

Mr. E. Alvey Wright, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:


Subject: EIS Preparation Notice - Kuakini Highway Realignment,
Island of Hawaii, Project No. RF-011-1(14)

We have reviewed the subject preparation notice and have the following questions or comments:

1. Page 6, item (h) Proposed Mitigation Measures--Is the mentioned reservoir the Keopu Flood Basin?
2. Widening of the roads along the existing alignment (Lines 6 and 8) may affect the roadside inlets into the Keopu Channel.
3. Alignment No. 1 crosses Keopu Stream above the Keopu Flood Basin. There are no indications of bridge size and other factors that may affect the proper functioning of the flood channel and debris basin. Disturbance in the stream area may cause unusual debris loads to move downstream into the flood control system.

Thank you for the opportunity to review this document.

Sincerely,


Francis C. H. Lum
State Conservationist

Acting

DIRECTOR'S OFFICE
OCT 24 1 09 PM '75
DEPT. OF
TRANSPORTATION



Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

E. ALVEY WRIGHT
DIRECTOR
DEPUTY DIRECTORS
DOUGLAS S. SAKAMOTO
WALLACE AOKI

December 1, 1975

IN REPLY REFER TO:
HWY-PA
2.25972

Mr. Francis C. H. Lum
State Conservationist
U. S. Department of Agriculture
Soil Conservation Service
440 Alexander Young Building
Honolulu, Hawaii 96813

Dear Mr. Young:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your comments on our EIS Preparation Notice alerting us to the potential drainage problems. Our responses to your comments follow:

1. The statement pertaining to the reservoir was applicable to an alignment that has been eliminated from further consideration and should have been deleted from the preparation notice.
2. We agree the roadside inlets into Keopu Channel may be affected and we will be responsible for coordinating their relocation should either Line 6 or 8 be adopted.
3. Design of all drainage facilities will be based on a 50-year storm and measures will be taken to insure the proper functioning of the flood channel and debris basin.

Appendix H

2707

245 North Kukui Street, Honolulu, Hawaii 96817, Telephone (808) 537-5966

AMERICAN  LUNG ASSOCIATION of Hawaii

October 20, 1975

OCT 21 12 48 PM '75
TRANSPORTATION
DEPT. OF
DIRECTOR'S OFFICE

E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Admiral Wright:

Re: Kuakini Highway Realignment, Island of Hawaii
Project No. RF-011-1(14)

This is in reply to your letter of October 6, 1975 (HWY-PA 2.24763) seeking comments on the environmental effects of the subject highway realignment.

In your assessment of the proposed highway's impact on air quality, we suggest that you do the following:

1. Estimate the annual fluctuation of daily emissions of the three major automotive pollutants, i.e., carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx), over the design life of the proposed highway. These estimates should take into consideration changes in traffic volume, variations in average route speed, percentage of heavy duty vehicle traffic, etc.
2. From section 1. above, determine the critical year for each of the three pollutants. Critical year is the year in which the emissions of a given pollutant reach a peak after which they decline due to improved emission control devices and/or changes in traffic volume and road conditions.
3. For each critical year, calculate ambient concentrations under worst case and most probable meteorological conditions at various distances from the highway. This is done only for CO and HC. NOx is not dealt with because of its precursor role in atmospheric photochemical reactions and its uncertain removal rate from the atmosphere. Although HC also participates in photochemical reactions, its statutory standard has an averaging period of only 3 hours (versus 24 hours for NOx) which is felt to be short enough to permit an order-of-magnitude estimation of its concentrations. CO is the best suited for this procedure since it is relatively inert in the atmosphere. For comparison with Federal and State standards, estimates of concentrations should be calculated for the following time averaging periods:

Appendix H

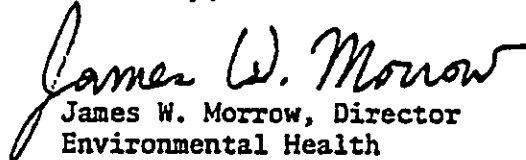
Christmas Seals Fight TB, Asthma, Emphysema, Air Pollution

E. Alvey Wright
October 20, 1975
Page 2

- a. CO - 1-hour and 8-hour (to correspond with peak traffic)
 - b. HC - 3-hour (to correspond with a.m. peak traffic)
4. Available meteorological data should be reviewed to determine the frequency of occurrence of worst case and most probable conditions at the time of day corresponding to peak traffic and to identify locations of potential present and future receptors. The various alternative corridors may also be evaluated on the basis of air quality and the number of receptors along each.
 5. If the ambient estimates based on peak traffic periods suggest that existing air quality standards may be exceeded during the critical years under both worst case and most probable meteorological conditions, it may be desirable to perform similar calculations for off peak traffic and for noncritical years to determine under what conditions standards are no longer exceeded.

If we may be of any further assistance in the preparation of this EIS, please do not hesitate to contact us.

Sincerely,


James W. Morrow, Director
Environmental Health

JWM:ct

cc: Dr. Richard E. Marland, OEQC
Dr. Albert Tom, EQC

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

December 3, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.26017

Mr. James W. Morrow, Director
Environmental Health
American Lung Association of Hawaii
245 North Kukui Street
Honolulu, Hawaii 96817

Dear Mr. Morrow:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your letter suggesting a methodology for evaluating the highway's impact on air quality. While we appreciate your concern and efforts in presenting this information to us, we have decided instead to conduct our study utilizing a burden analysis proposed by the Department of Health and verifying its results for carbon monoxide through the Environmental Protection Agency's "HIWAY" model. The "HIWAY" model uses the Gaussian plume formulation and has a distinct advantage in that a finite line source at any angle to the wind can be analyzed.

The results of our study will be included in the draft EIS which we will be requesting your office to review.

Sincerely,

E. ALVEY WRIGHT
Director

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



DIRECTOR'S OFFICE

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

Audrey W. Mertz, M.D., M.P.H.
Deputy Director of Health

Henry N. Thompson, M.A.
Deputy Director of Health

James S. Kumagai, Ph.D., P.E.
Deputy Director of Health

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

DEPT. OF
TRANSPORTATION

October 31, 1975

In reply, please refer to:
File: EPMS -SS

Mr. E. Alvey Wright
Director, Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:


Subject: Request for Comments on Proposed Environmental Assessment
Statement for Kuakini Highway Realignment, Island of Hawaii,
Project No. RF-011-1(14)

Thank you for allowing us to review and comment on the subject
environmental assessment. Please be informed that we have no objections
to this project.

Staff comments are as follows: Would the new alignment include
sewer transmission line to expand the current sewage collection system in
Kailua-Kona?

We realize that the statements are general in nature due to
preliminary plans being the sole source of discussion. We, therefore,
reserve the right to impose future environmental restrictions on the
project at the time final plans are submitted to this office for review.

Sincerely,


JAMES S. KUMAGAI, Ph.D.
Deputy Director for
Environmental Health

cc: Hawaii DHO

Appendix H

2801

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
859 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

November 28, 1975

IN REPLY REFER TO:

HWY-PA
2.25921

Dr. James S. Kumagai, Ph.D.
Deputy Director for
Environmental Health
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Kumagai:

Subject: Kuakini Highway Realignment,
Island of Hawaii
Project No. RF-011-1(14)

Thank you for your letter of October 31, 1975 commenting on the EIS Preparation Notice for the subject project.

In reply to your Staff comments, no sewer transmission lines are contemplated within the new alignment. However, coordination has been effected with the County of Hawaii, Department of Public Works; and should they proposed an expansion of their facilities, we will consider accommodating them within our rights-of-way.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director

Appendix H

2681



COUNTY OF HAWAII

PLANNING DEPARTMENT

25 AUPUNI STREET • HILO, HAWAII 96720

HERBERT T. MATAYOSHI Mayor
RAYMOND H. SUEFUJI Director

October 15, 1975

Mr. E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

DEPT. OF TRANSPORTATION
OCT 20 8 13 AM '75
DIRECTOR'S OFFICE

Re: EIS Preparation Notice
Kuakini Highway Realignment
Your HWY-PA 2.24763
Project No. RF-011-1(14)

Thank you for this opportunity to review the above.

Appropriately-scaled maps should be included to illustrate the County's Zoning and General Plan for the area. Descriptions should be more explicit than "predominately vacant land" (page 2).

There appears to be some discrepancy in the required right-of-way. Line 1's minimum right-of-way is 150 feet, yet Line 6 and Line 8 call for 100 feet. According to our General Plan, Kuakini Highway is classified as a Primary Arterial. The minimum right-of-way for primary arterials is 120 feet.

We suspect there may be some impact on the above project with the implementation of two other proposed road projects: the Holualoa-Papa Highway and the Alii Drive Realignment. The relationship of these three should be discussed.

On page 5, you state, "In consideration of the social, economic and environmental impacts, a significant effect determination has been established ..." We have found little discussion on what the major impacts may be. We look forward to the EIS which will address these potential impacts in greater detail.

Raymond Suefuji
RAYMOND SUEFUJI
Director

RN:rfd

cc: Chief Engineer

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.25922

November 28, 1975

Mr. Raymond Suefuji
Director
County of Hawaii
Planning Department
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Suefuji:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

The following is our response to your comments on the
EIS Preparation Notice for the subject project.

1. The environmental impact statement (EIS) will provide land use maps and other related information. Descriptions of affected areas will be sufficiently detailed to allow for its proper evaluation.
2. The proposed 150-foot minimum rights-of-way for Line 1 allows for a future expansion to four lanes and is based on our standards for a rural highway. This right-of-way width will also be consistent with the adjoining section of Queen Kaahumanu Highway.

A 100-foot minimum right-of-way is proposed for the two-lane section for Line 6 in order to minimize the highway's impact on adjoining properties. The four-lane sections of Lines 6 and 8 are more representative of primary arterials and are proposed for a minimum width of 120 feet as specified by the General Plan.

Appendix H

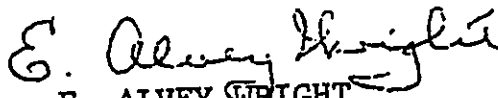
Mr. Raymond Suefuji
Page 2

HWY-PA 2.25922

3. Other transportation facilities in the project vicinity will be discussed, including the proposed Alii Drive Realignment and Hawaii Belt Road between Holualoa and Papa.
4. The EIS will contain a thorough discussion of the social, economic, and environmental consequences of this project.

Thank you for your comments. We will be requesting your further review on the draft EIS.

Sincerely,


E. ALVEY WRIGHT
Director

Appendix H

2754

KONA TRAFFIC SAFETY COMMITTEE

POST OFFICE BOX 637
1360

KAILUA, KONA, HAWAII 98740

DIRECTOR'S OFFICE
OCT 29 12 44 PM '75
DEPT. OF
TRANSPORTATION

October 25, 1975

Mr. E. Alvey Wright
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Subject: Kuakini Highway Realignment
Island of Hawaii
Project No. RF-011-1(14)

Dear Mr. Wright:

After much consideration, the Kona Traffic Safety Committee wishes to recommend Line I of the three possible choices. Our feeling is that Line I would be the least complicated and the most advantageous route to construct.

Thanking you for the opportunity of voicing our opinion, we are,

Sincerely yours,

THE KONA TRAFFIC SAFETY COMMITTEE

Suzy Ohira
Suzy Ohira
Secretary

Appendix H

GEORGE R. ARIYOSHI
GOVERNOR



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

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA
2.25925

November 28, 1975

Ms. Suzy Ohira, Secretary
Kona Traffic Safety Committee
P.O. Box 1360
Kailua-Kona, Hawaii 96740

Dear Ms. Ohira:

Subject: Kuakini Highway Realignment
Project No. RF-011-1(14)

Thank you for your support of Line 1. We will certainly consider the Kona Traffic Safety Committee's recommendation in selecting the alternate to be constructed.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT
Director

Appendix H

APPENDIX I

COMMENTS AND EVALUATIONS

ON

DRAFT ENVIRONMENTAL IMPACT STATEMENT



COUNTY OF HAWAII

PLANNING DEPARTMENT

25 AUPUNI STREET • HILO, HAWAII 98720

HERBERT T. MATAYOSHI
Mayor

RAYMOND H. SUEFUJI
Director

3695

March 31, 1976

Mr. E. Alvey Wright, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

APR 2 1 49 PM '76
PLANNING DEPARTMENT
COMMUNICATIONS SECTION

Re: KUAKINI HIGHWAY REALIGNMENT
HWY-PA 2.24763
Draft EIS, Hawaii Project RF-011-1(14)

Thank you for the opportunity to review and comment on this draft EIS.

1A Figures 3A-3C are actually County Zoning Maps and not General Plan Maps. The General Plan Map of the area should be included besides the Zoning Map to show the General Plan development policies for the project area.

1B In addition to the development policies of the General Plan, those of the Kailua Village Design Plan, which is not in its final preparation stages, should be considered in assessing the impacts of the different alignments. The Village Design Plan is a planning document which is intended to implement our General Plan. It makes three recommendations which directly affect the project:

1C 1. It supports the construction of Line 1, calling it the Queen Kaahumanu Highway extension.

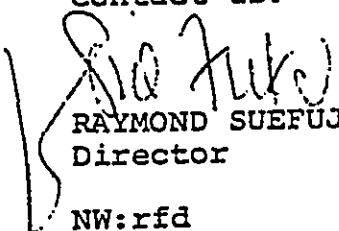
1D 2. It suggests that Kuakini Highway be expanded to four lanes between Palani Road and Hualalai Road. Unlike Line 8, it is designed primarily for downtown traffic with a 25 mph speed limit and large accommodations for landscaping.

1E 3. It would not permit a through collector connecting the Queen Kaahumanu extension and Kuakini Highway between Hualalai Road and Palani Road. According to the plan, "this area should become a residential area with no easy through traffic disrupting the area."

Mr. E. Alvey Wright
Page 2
March 31, 1976

1F These right-of-way recommendations were made to complement the other recommendations of the Plan in an effort to accommodate future development in Kailua while maintaining the relaxed "Kona atmosphere and lifestyle." For the Plan to be meaningful, its suggestions must be followed closely. If this is not done, the result could be similar to having no plan at all. Thus, the impact of any alternative which contradicts the recommendations of the General Plan or the Kailua Village Design Plan on the effectiveness of those plans should be carefully considered.

Should we be of any further assistance, please do not hesitate to contact us.


RAYMOND SUEFUJI
Director

NW:rfd

cc: Chief Engineer

Appendix I

EVALUATION

Planning Department, County of Hawaii

- 1A. A copy of the General Plan Map has been furnished by the County Planning Department and is depicted in Appendix A, Figure 3E.
- 1B. The Hawaii Land Transportation Facilities Division was aware of the Kailua Village Design Plan and considered its proposals in the highway study.
- 1C. Line 1 is the recommended alignment. It has been called both the Kuakini Highway Realignment and the Queen Kaahumanu Highway extension by various groups. After construction, it is most likely that its official nomenclature will be the "Queen Kaahumanu Highway."
- 1D. The State concurs. Even with the construction of Line 1, there will be sufficient Kailua Village traffic on Kuakini Highway to consider a possible expansion to four lanes. This action, however, will not be part of the Kuakini Highway Realignment project.
- 1E. Line 1 will be in compliance with this recommendation.
- 1F. The State's selection of Line 1 reflects the recommendations of the Kailua Village Design Plan and does not contradict either it or the General Plan.

EVALUATION

Department of Water Supply

- 2A. Future coordinations on the waterline crossings will be conducted in the design phase.

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
OFFICE OF THE GOVERNOR
550 HALEKAUWILA ST.
ROOM 301
HONOLULU, HAWAII 96813

May 11, 1976

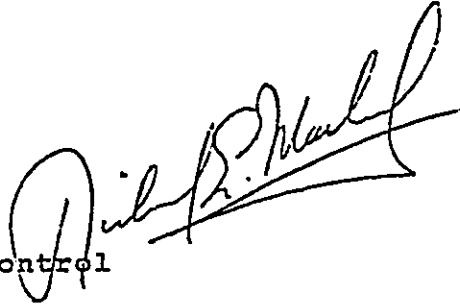
2990
DIRECTOR'S OFFICE
RICHARD E. MARLAND, PH.D.
DIRECTOR
TELEPHONE NO.
548-6915
MAY 12 12 42 PM '76
DEPT. OF
TRANSPORTATION

MEMORANDUM

TO: E. Alvey Wright, Director
Department of Transportation

FROM: Richard E. Marland, Director
Office of Environmental Quality Control

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR KUAKINI
HIGHWAY REALIGNMENT, NORTH KONA DISTRICT, HAWAII



As of this date, this office has received one comment from the American Lung Association dated May 6, 1976. A copy has been already transmitted to your agency by the reviewer.

In our review of the draft environmental impact statement, our office has found several areas in which the final EIS should expand discussion. We offer the following comments:

1. Page 4 of the statement indicates that the State is studying a 30 mile highway improvement project from the end of this project to Papa. We would like to bring to your attention section 1:12 of the EIS Regulations:

A group of proposed actions shall be treated as a single action when: (1) the component actions are phases or increments of a larger total undertaking; (2) an individual project is a necessary precedent for a larger project; (3) an individual project represents a commitment to a larger project; or (4) the actions in question are essentially the same and a single Statement will adequately address the impacts of any single action.

3A In other words, the proposed action and the 30 mile improvement project should be considered one action. Thus, why are these actions considered separately?

Appendix I

- 3B** 2. Within the project description, the EIS does not mention the present and future capacity of the highway. In order for the proposed action to be justified, we recommend that the figures be given to indicate the present and future traffic projections. Although we realize that traffic tables have been included in the Appendix of the statement, it is necessary to discuss interpretations and conclusions drawn from the data.
- 3C** 3. Although page 8 of the document mentions that the proposed action will be jointly financed by the federal and state levels, we also would recommend discussion of the total funding.
- 3D** 4. The section on drainage should be expanded to include some discussion on flooding. How will the highway realignment be affected by the flood control project? What mitigation measures will be implemented in order to avoid inundation of the road?
- 3E** 5. Although the document states that the National Historic Register has been consulted, has the Hawaii Register of Historic Places also been consulted?
- 3F** 6. What is the annual rainfall data? What is the climate?
- 3G** 7. If noise levels are to be exceeded as shown on page 33, what mitigation measures will be necessary?
- 3H** 8. The EIS has inadequate discussion regarding traffic projections. No substantive facts lead to conclusions such as on page 35, "improvements, however, will not solve the growing traffic congestion confronting Kailua," or "the highway would be taxed beyond its capacity and congestion and accidents will increase." Although the appendix has some figures on traffic, it does not support these statements.
- 3I** 9. Under the relationship between short-term uses vs. long-term productivity, it should be realized that the proposed action may increase the potential for growth, urbanization, and pollution. Thus, we recommend an expanded discussion regarding how the proposed action will increase the secondary impacts.
- 3J** 10. Since highway projects tend to promote the use of the automobile, it is important to realize that we are still in a energy crisis. Emphasis should be placed on the conservation of energy and use of transportation alternatives such as carpools, and mass transit. Thus, we strongly recommend a discussion be given on the alternative methods of energy conservation which could be feasible. For example,

carpooling or a bus system may reduce the need for improvement, therefore, no action may be a feasible alternative.

3K 11. What is the cost-benefit analysis?

12. The EIS seems to justify the proposed action by referencing the County General Plan. The General Plan is a valuable guide for private and public actions to achieve goals and objectives. It is a "policy document" for long-range comprehensive planning for the island of Hawaii. One of the critical phases of the plan is the implementation. The General Plan does not preclude modifications nor alternate actions. It is not a fixed pattern where one must always implement the action on the plan. We, therefore, recommend that the reference to the General Plan be revised to reflect this.

3L

13. Our major criticism of the EIS is the contents is a summary of conclusions. There seems to be an avoidance of substantive discussion of environmental impact. According to the EIS Regulations, the EIS "shall fully declare the environmental implications of the proposed action and shall discuss all relevant and feasible consequences of the action." We strongly recommend that the content requirements in section 1:42 of the EIS Regulations serve as a guideline for an adequate EIS.

3M

The EIS Regulations state that responses to comments should be made fourteen days after the review process. However, the Governor or his authorized representative has the discretion to consider late responses. We will consider responses to comments after the fourteen day response period for the proposed action.

We trust that these comments will be helpful to you in preparing the final EIS. We thank you for the opportunity to review the document. We look forward to the final EIS.

EVALUATION

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

- 3A. Both the Kuakini Highway Realignment project and the 30-mile improvement of the Hawaii Belt Road from Holualoa to Papa are independent and separate actions. Although both projects have the common goal of providing a safe and efficient transportation facility, neither is a component of the other nor is it necessary to construct one to justify construction of the other; neither will construction of one mandate construction of the other. Both projects are justifiable on their individual merits and benefits to the Kona residents.

The Kuakini Highway Realignment will separate north-bound (Ke-Ahole Airport and Kawaihae) traffic from the Kailua Village bound traffic.


The Hawaii Belt Road improvements between Holualoa and Papa will link the outlying villages and agricultural areas to their primary destination of Kailua Village.

Each project will also have separate and distinct impacts. The Kuakini Highway Realignment will primarily affect pasture lands and the urbanized and resort-oriented areas surrounding Kailua Village. The Hawaii Belt Road will primarily affect rural resources such as coffee, citrus and macadamia nut farms, native and secondary forests and conservation lands.

We interpret the cited regulation to be applicable to the situation where an action is part of a larger project. An example would be a retention basin or a bridge that is constructed as part of a highway realignment. Another example would be land clearing and displacement of residences for a highway widening.

- 3B. The present capacity of Kuakini Highway is 1,300 vehicles per hour while its peak hour demand volume varies from 700 to 1,000 vehicles per hour. Line 1, when constructed will have a capacity of 1,700 vehicles per hour. In 1995, the peak hour volume on Line 1 will be nearly 490 vehicles per hour with approximately 2,000 vehicles per hour on Kuakini Highway.
- 3C. The project will be financed by 70% federal funds and 30% State funds.

- 3D. Section V.C.4. and VIII.I. have been expanded to address these concerns.
- 3E. Yes, within the project area, only the Honuauia Platform and Kealakowaa Heiau are tentatively listed on the Hawaii Register of Historic Places (HRHP). As stated in Section XI., sites listed on the HRHP will not be affected by this project.
- 3F. This data has been added to Section III.A. of the Final EIS.
- 3G. The recommended alignment, Line 1, will not exceed noise level standards.
- 3H. Refer to OEQC comment on No. 3B. Due to the amount of information contained in this EIS, a technical discussion on capacity and level of service may be unnecessary and cumbersome to the reader. In refraining from this, we have provided the necessary data in order that an independent analysis can be carried out. In addition, as stated in our response to comment 3.M., our own calculations are available for public review.
- 3I. Secondary Impacts are discussed in Section V.D.
- 3J. A "do nothing" alternative was evaluated and determined to be infeasible. It will not service the traffic demands nor the goals of the area's General Plan.
- Bus service and carpools make more efficient use of our energy resources and are encouraged, but they too require an adequate highway system to function effectively.
- 3K. The applicable benefit cost ratios for this project are:
- | | |
|--------|------|
| Line 1 | 1.06 |
| Line 6 | 0.93 |
| Line 8 | 1.19 |
- 3L. Section V.D., Secondary Impacts, clarifies this point. Refer also to the County Planning Department's letter on the DEIS which is contained in this Appendix.
- 3M. We trust our responses to the Office of Environmental Quality Control satisfy their concern. Statements made in the EIS are substantiated by engineering data and calculations that are available for public review at the Hawaii Land Transportation Facilities Division, Planning Branch.

AMERICAN  LUNG ASSOCIATION of Hawaii

May 7, 1976

U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft Environmental Impact Statement for the
Kuakini Highway Realignment, North Kona, Hawaii
Project No. RF-011-1(14)

In response to an April 15, 1976 letter from the State Department of Transportation (HWY-PA 2.28381), we are sending our comments on the subject EIS directly to your office. Our review was restricted to those portions of the EIS pertaining to air quality impact assessment. Generally speaking, we found the assessment was quite good, and thus we have only a few comments and suggestions.

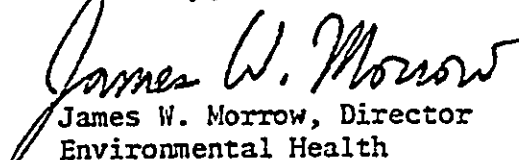
- 4A
1. The use of emission factors from Supplement 2 to Compilation of Air Pollutant Emission Factors¹ generally resulted in underestimation of both emissions and ambient concentrations. The more recent Supplement 5 provides a methodology which, in the case of peak hour traffic conditions, would have resulted in ambient CO estimates up to 2.5 times as great as those presented on page 3 of Appendix E. Fortunately, the corrected estimates would still be below State air quality standards. Supplement 5 incorporates the most recent changes in Federal emissions standards and also describes a method for correcting emission factors in the event of future changes in the Federal standards.
 2. The average route speeds of 28 and 32 mph seem rather high for peak hour traffic conditions. Since the emission factors and ambient concentrations are a function of vehicle speed, it is critical to choose an appropriate average route speed. Selection of an unrealistically high speed will result in underestimation of CO and HC and overestimation of NOx. Selection of too low a speed will have the opposite effect.
 3. An arbitrary mixing height or "lid" of 500 m was included in the HIWAY model. We suggest that a more realistic value could and should have been obtained from the National Weather Service in
- 4B
- 4C

1. U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors (2nd Ed.) 1975

Hilo or from the Maunaloa Observatory which is conducting global air pollution studies and has such information. The mean mixing height for F stability and 0-3 kt winds on Oahu, for example, is 384 m; with calm winds it is only 79 m. Since failure to include an appropriate mixing height can result in underestimation of pollutant concentrations some distance from the highway source, it would be advisable to use actual data rather than an arbitrary value.

- 4D** 4. One of the basic underlying assumptions in the HIWAY model is that the highway segment is straight. The sections modeled are not straight and thus winds which are parallel to one segment of a highway section are not parallel to another. The net result is that the concentrations presented in Appendix E are probably somewhat high.
- 4E** 5. It would be appropriate to relate the computer modeling to actual meteorological conditions in the project area. For example, data should be presented on the frequency of occurrence of winds which would be parallel to given highway segments. Presentation of this type data would help make the computer modeling more than just an academic exercise.
- 4F** 6. We would suggest that the receptor location described as a "downwind distance - 29 feet" would be more accurately described as the perpendicular distance from the highway. In the case of parallel winds, a downwind distance would be right on the highway line source which, of course, is not what was intended.
- 4G** 7. As a final note, we would point out that the relatively low emissions and ambient concentrations projected for most highway projects are entirely dependent on Federal vehicle emissions standards being met by their statutory attainment dates and maintained thereafter. As we have seen in recent years, these standards can be altered and the attainment dates delayed. Congress is at this moment reviewing the Clean Air Act Amendments of 1976 and further changes may be forthcoming. Any further easing of standards or extensions of attainment dates will increase the impact of this and many other projects involving motor vehicle traffic.

Sincerely,


James W. Morrow, Director
Environmental Health

JWM:ct

cc: E. Alvey Wright, Director DOT

Appendix I

EVALUATION

American Lung Association

- 4A. We are grateful to the American Lung Association for informing us of Supplement 5. Unfortunately, at the time the air quality analysis was conducted, the Land Transportation Facilities Division did not have access to it. A computer program is currently being prepared by EPA and when ready for distribution, a "phasing in" schedule for project analysis will be established. This schedule will be coordinated with the EPA Headquarters Office.
- 4B. The average route speeds used in the analysis are assumptions based on observations of actual operating conditions made in 1975.
- 4C. For most locations close to the pollution source, the mixing height will have very little influence on the calculation of pollution concentration. When the receptor is located at a great distance from the pollution source and the travel time of the pollutant from source to receptor location is long, the mixing height will be the limiting height to which pollution will spread vertically. If the location of the receptor selected will be within a few hundred meters from the road, the mixing height will have little or no influence on pollution dispersion during the short travel time the pollutant moves from the road to the receptor. (Source: HIWAY: A HIGHWAY AIR POLLUTION MODEL, Environmental Protection Agency).
- The table showing the highest level of concentrations along Kuakini Highway reflects the levels at a distance of approximately nine (9) meters from the pollutant source.
- 4D. True. The Land Transportation Facilities Division inputted data in its calculations which would yield a higher level of pollutants.
- 4E. Use of actual meteorological data would yield results closer to actual conditions. However, once it was determined that pollutant standards would not be exceeded in 1985 under the worst possible conditions, we concluded that there would be no significant impact on air quality.

Appendix I

4F. The description has been changed as suggested.

4G. We agree.

Appendix I



University of Hawaii at Manoa

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

Office of the Director

April 30, 1976

Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
677 Ala Moana Blvd., Suite 613
Honolulu, HI 96813

Environmental Impact Statement for the
Proposed Kuakini Highway Realignment

Dear Mr. Segawa:

The Environmental Center has been assisted in the review of the above cited EIS by Gordon Lum, Hawaii Environmental Simulation Laboratory and Clare Shinsato and Margaret Stanzione of the Environmental Center.

The EIS seems reasonably complete and a fair assessment of the potential environmental impacts. We would appreciate your consideration of the following comments:

Page 4

5A It is stated that the Kuakini Highway Realignment study was primarily initiated to "provide some relief from the growing congestion on the existing highway." What are the present "congestion levels"? The term "growing congestion" is a subjective judgment unless it is quantified. One person may view this as a ten minute delay in travel time while another person may view this as an hour delay in travel time. Unless the information is quantified the reader is forced to use his intuitive judgment as to the projected impact. Congestion can be quantified through the use of indicators of a level of service such as travel time and overall speed.

5B "The County General Plan indicated that this growth will continue." What are some of the assumptions used to obtain these projections? What is the most recent data year used in the analysis?

AN EQUAL OPPORTUNITY EMPLOYER

Appendix I

5C The traffic analysis indicates that the increased traffic volume "will seriously overburden the carrying capacity of the present facility." This term "carrying capacity" is misused in this sentence. It is not the carrying capacity that will be overburdened but the present facility. The carrying capacity, with its inherent assumptions and value judgments, will aid in determining when or during what conditions the present facility is overburdened.

Page 7

5D The proposed improved highway may be a contributing factor to the development of the tourist industry but to say that the job market may be expanded due to urban expansion in the project vicinity may be beyond the scope of this particular project. It leads one to believe that new jobs will be created for Kona residents due to this 3.1 mile proposed highway improvement.

Page 27

5E "Cuts and fills may create an unpleasant visual impact." During construction cut and fill areas should not be left exposed but should be landscaped as soon as possible for erosion purposes as stipulated in Section 639 (Appendix C) for water pollution control (soil erosion) as well as aesthetic purposes.

Page 30

5F It is stated that the proposed highway realignment (Line 1) will meet the existing noise standards. If the highway is expanded, will the level of noise still be within Federal design standards?

Page 35

5G "In order to meet the traffic demands, more lanes must be constructed." Does this fit in with the planning or overall goals for the island of Hawaii? Will all congestion problems be limited to building more highways or lanes?

5H "The highway would be taxed beyond its capacity and congestion and accidents will increase." What is the capacity of the highway? Quantified data on existing capacity and congestion conditions should be included in the final EIS.

Page 45

5I "A 100-foot depth of woods of sufficient density that no visual path exists through its 100-foot depth will accomplish a 5 dBA reduction." A 5 dBA reduction from 20 dBA to 15 dBA is not the same as a reduction from 80 dBA to 75 dBA. What base is being used? What is the source of this information?

5J "In the event that noise abatement measures are not feasible, then an exception to the design noise levels will be requested..." Will this be the probable outcome? Where are noise abatement measures not feasible? Effects on these areas should be addressed in the final EIS.

Figure 11 Traffic Volumes

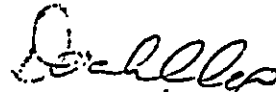
5K What are the sources used to obtain the traffic projections and traffic assignment?

Appendix E. Air Quality Analysis

5L Some additional inputs used in the HIWAY package that might also be described in the EIS are:

- 1) the emission height at which the emissions are recorded
- 2) height of limiting lid

We appreciate the opportunity to have reviewed this EIS.


Doak C. Cox

cc: OEQC

EVALUATION

University of Hawaii, Environmental Center

- 5A. Please refer to comments by OEQC, 3B and 3H, concerning the congestion in Kailua-Kona.
- 5B. The statement is based upon projections furnished by the State Department of Planning and Economic Development, which were developed primarily from land use policies and zoning ordinances as set by the County of Hawaii.

Traffic forecasting procedures for this project has utilized the Hawaii County General Plan as well as other available data (see comment 5K). Historical travel data is one of the more significant sources of information and traffic counts were taken as recently as April 1976.

- 5C. We agree. "Carrying capacity" will be deleted.
- 5D. Our intentions were to properly address some of the secondary effects for which this project may be partially responsible. Urban expansion and the creation of an expanded job market are very reasonable effects in consideration of present population size and governmental and community planning. Also, please refer to Sections IV. and V.D.
- 5E. We agree. See Section VIII.B. and C.
- 5F. Yes. For the design period of this project, if four lanes are constructed, noise standards should not be exceeded.
- 5G. The Hawaii County General Plan and the Kailua Village Urban Design Study favor the immediate construction of Line 1. Also, on the basis of an evaluation of cost, and of social, economic and environmental effects, a new highway appears the more logical and beneficial solution. Please note on page VI-7 that the paragraph has been revised to hopefully make this clearer.

This, however, does not preclude the possibility of future consideration for an alternative solution. The State Department of Transportation also supports the Kona Community Development Plan proposal which recommends mass transit.

- 5H. Refer to similar comment 3B by OEQC, concerning the congestion in Kailua-Kona.
- 5I. The statement is not intended to compare reductions from any base level. It is offered solely as a possible abatement measure to attain a 5 dBA reduction. This information was obtained from the NCHRP Report No. 117, "Highway Noise - A Design Guide for Highway Engineers."
- 5J. Since Line 1, the recommended alignment, meets the Federal noise criteria, no abatement measures are necessary.
- 5K. The major sources of data used in developing the traffic projections and assignment for this project were:
- a. other traffic assignment studies for areas adjoining and contributing traffic to Kailua-Kona, i.e., "Kailua-Kawaihae Road" (Queen Kaahumanu Highway), "Kailua-Kawaihae-Kamuela Area Study," "Kawaihae Area Study," and "Hawaii Belt Road, Holualoa Toward Papa." The forecasted traffic volumes and assignment from these studies were used as controls for those highway facilities entering the Kailua area, including Kuakini Highway itself.
 - b. historical travel and traffic count data.
 - c. Department of Planning and Economic Development's population and hotel unit projections.
 - d. various consultant studies.
 - e. various developer's plans.
 - f. Air Transportation Facilities Division's air passenger traffic forecasts.
 - g. State General Plan.
 - h. Hawaii County General Plan.
- 5L. The requested information has been provided. Also, please refer to the American Lung Association's comment 4C, concerning our air quality analysis.



United States Department of the Interior

DIRECTOR'S OFFICE

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer To:
L7619-MQ
(ER-76/236)

MAY 12 8 55 AM 1976

MAY 6 1 05 PM '76

MAY 3 1976
DEPT. OF TRANSPORTATION

Dear Mr. Segawa:

This is in response to the request for the Department of the Interior's comments on the draft environmental statement for the Kuakini Highway Realignment Project, Island of Hawaii, Hawaii.

Environmental Statement Comments

The draft statement contains little information on topography or geology, including surficial deposits, except for the facts that the terrain is rugged and rocky (page 2, last paragraph), that soils are shallow (page 18, line 7), and that slopes average approximately 10 to 15 percent (page 2 and page 18). It is stated that "cuts and fills from the highway may detract from the naturally scenic quality of the countryside" (page 27, paragraph 1), but there is no evaluation of this impact. The statement lacks an indication of the anticipated magnitude of earthwork, materials to be excavated or emplaced for fill, and of approximate volumes of earthwork required, except the commitment that the plan is for "balancing and minimizing cuts and fills where possible" (page 43, paragraph 1). The statement should include a discussion of these environmental elements and evaluate the impacts on them stemming from construction and operation of the project.

6A

The section dealing with the description of the project should be expanded to discuss the location of any borrow and spoil areas needed for project construction. Other sections of the statement dealing with the description of the existing environmental setting can describe the borrow/spoil area locations under pre-project conditions as they relate to flora, fauna and esthetics. Impacts of the borrow/spoil operations should be identified and mitigation measures employed to lessen the impact of borrow/spoil operations on the environment should be discussed.

6B

6C

Page 32 states that Line 6 will affect five businesses and 12 residences, but figure 8 shows Line 6 as affecting seven businesses and 12 residences. In addition, it is stated that Line 8 will have an effect on businesses, residences and churches similar to Line 6 (page 33, last paragraph), but figure 8 shows Line 8 as affecting five businesses and no residences. You may wish to resolve these inconsistencies in the final statement.

6D



6E Whatever alternative alignment is selected, the effects upon water resources will be minimal. However, we note for your information that the wells at Kahaluu are of the water-table type and not artesian as stated on page 20.

6F Copies of the archeological surveys of alternatives Line 6 and Line 8, should be sent to the Western Archeological Center, National Park Service, P. O. Box 49008, Tucson, Arizona 85717, and the results and recommendations summarized in the final statement.

6G The statement indicates that Line 1 would open possible sites for scenic lookouts and roadside picnic areas (page 31). If this alignment is selected, we recommend that at least one scenic overlook be incorporated into the planning and be constructed as a part of the highway project (23 CFR 752.106). Also, we recommend that the Hawaii Department of Transportation coordinate with local park and recreation officials in order to determine if any other recreation enhancement or access development can be incorporated into the planning and construction.

Section 4(f) Comments

The statement recognizes that the Kailua Playground would be adversely affected by either the Line 6 or Line 8 Alternative and that a Section 4(f) statement will be necessary if either of these alternatives are used.

6H The statement also shows that FHWA and the State Historic Preservation Officer are in agreement that the Great Wall of Kuakini and the Kona Field System are two historic sites eligible for the National Register of Historic Places (page 23 and Appendix I, letters of 12/4/75 and 1/2/76). As such, these properties have at least State and local significance. Therefore, any use of land from these historic properties for highway purposes involves Section 4(f) of the DOT Act and the need to prepare a Section 4(f) statement in accordance with DOT Order 5610.1B (Attachment 2, Section 4) and 23 CFR 771.19.


Summary Comments

In the preparation of any Section 4(f) statement, field-level offices of this Department are available to provide technical assistance as requested. For historic site involvements, please coordinate with Mr. Robert L. Barrel, State Director, Hawaii Group, National Park Service, U.S. Department of the Interior, 677 Ala Moana Boulevard, Suite 512, Honolulu, Hawaii 96813 (phone: 521-3027).

For technical assistance on parkland uses, please contact the Regional Director, Pacific Southwest Region, Bureau of Outdoor Recreation, U.S. Department of the Interior, 450 Golden Gate Avenue, P. O. Box 36062, San Francisco, California 94102 [phone FTS: (415)556-0182].

Pursuant to Section 4(f) of the DOT Act, the Department of the Interior would expect to be consulted when FHWA has approved for circulation a draft Section 4(f) statement. Seven copies of that document should be sent to this office for our intra-departmental review.

Sincerely yours,



Deputy Assistant

Secretary of the Interior

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
677 Ala Moana Boulevard; Suite 613
Honolulu, Hawaii 96813

✓ cc: Mr. E. Alvery Wright
Hawaii Department of Highways

Appendix I

EVALUATION

U.S. Department of the Interior

- 6A. Sections V.C.1. and VII. have been expanded to address these comments.
- 6B. The construction contractor normally makes his own arrangements for obtaining borrow material. Likewise, disposal of waste material is the responsibility of the contractor.
- Both borrow and disposal sites cannot be identified at this stage of project development. However, these sites when determined are subject to existing State and County laws and regulations to prevent environmental degradation.
- 6C. Section VIII-D has been added to describe mitigation measures for borrow pits under State Land Transportation Facilities Division jurisdiction.
- 6D. Line 6 will impact seven businesses and this has been indicated in Appendix A, Figure 8. The differences of impact of Lines 6 and 8 are due to the uncommon segments of approximately 2,000 feet.
- 6E. The final statement has been corrected.
- 6F. No archaeological survey has been conducted to date although State archaeologists and a representative of the Advisory Council on Historic Preservation have conducted a preliminary field reconnaissance. A survey will be made of Line 1 as part of our compliance with the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R., Part 800), to be completed prior to Design Report submittal.
- 6G. The possibility of scenic lookouts and roadside picnic areas will be pursued further in the design phase.
- 6H. A Section 4(f) Statement is attached to this document.

KONA OUTDOOR CIRCLE
POST OFFICE BOX 700
KAILUA - KONA, HAWAII 96740

Kona

June 5, 1976

RECEIVED	
HI JUN 8 1976	
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EC	<input checked="" type="checkbox"/>
GC	<input checked="" type="checkbox"/>
BE	<input checked="" type="checkbox"/>
PR	<input checked="" type="checkbox"/>
RV	<input type="checkbox"/>
I	<input type="checkbox"/>
AU	<input type="checkbox"/>
GU	<input type="checkbox"/>
AS	<input type="checkbox"/>
TR	<input type="checkbox"/>
FILE	<input type="checkbox"/>
201	<input type="checkbox"/>

Mr. Ralph T. Segawa
U.S. Dept. of Transportation
Federal Highway Administration
677 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Mr. Segawa,

The Kona Outdoor Circle feels that there will definitely be an environmental impact in the realignment **7A** of Kuakini Highway into the Queen Kaahumanu extension or "Kailua Bypass". We ask that your department not proceed on a planting plan until we are consulted.

Very sincerely,

Barbara S. Wilcox
Barbara S. Wilcox

Corresponding secretary

Kona Outdoor Circle

Appendix I

EVALUATION

Kona Outdoor Circle

- 7A. The Kona Outdoor Circle will be consulted in the design stage of this project.



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230

April 29, 1976

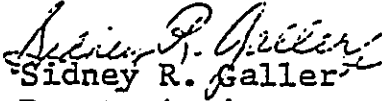
Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

This is in reference to your draft environmental impact statement entitled "Kuakini Highway Realignment, Hawaii Project". The enclosed comments from the National Oceanic and Atmospheric Administration are forwarded for your consideration.

Thank you for giving us an opportunity to provide these comments, which we hope will be of assistance to you. We would appreciate receiving three copies of the final statement.

Sincerely,


Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

Enclosure Memo From: Mr. Gordon Lill
National Ocean Survey



Appendix I



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, Md. 20852

Date: April 20, 1976

Reply to
Article:

Subject: DEIS 7603.29 - Kuakini Highway Realignment, Island of Hawaii

To: Director, Office of Ecology and
Environmental Conservation, NOAA

The National Geodetic Survey does not have any comments on subject draft environmental impact statement, other than the possible impact on monuments of the National Geodetic Control Networks.

Bench marks, triangulation stations, and traverse stations have been established by the National Geodetic Survey in the vicinity of the proposed project. Construction required for the project could result in destruction or damage to some of these monuments.

8A The National Geodetic Survey requires sufficient advance notification of impending disturbance or destruction of monuments so that plans can be made for their relocation. The National Geodetic Survey recommends that provision be made in the project funding to cover costs of monument relocation.

Gordon Lill
Gordon Lill
Deputy Director
National Ocean Survey

Appendix I

EVALUATION

U.S. Department of Commerce

- 8A. In the design stage, this project will be coordinated with the National Geodetic Survey concerning the relocation of their monuments.



DEPARTMENT OF PARKS & RECREATION
COUNTY OF HAWAII

Herbert Matayoshi, Mayor
Milton Hakoda, Director

April 30, 1976

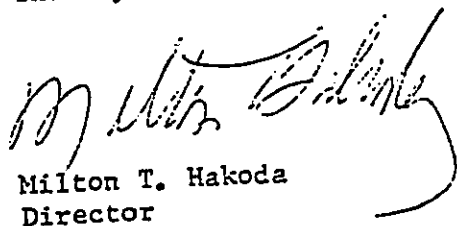
U. S. Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

RE: Kuakini Highway Realignment, Hawaii Project
Draft Environmental Impact Statement

9A Inasmuch as lines 6 and 8 would encroach on the parking area of Kailua Playground (page 20), we would appreciate being kept informed on what final alignment is chosen. Should either line 6 or 8 be chosen, a plan of the highway in relation to the playground would be appreciated.

Other than the above, we have no comments to offer on the project and draft EIS in relation to our departmental operations/programs.

Thank you for the opportunity to review the statement.


Milton T. Hakoda
Director

EVALUATION

County Department of Parks and Recreation

- 9A. Line 1 has been selected as the State's preferred alternative and it should not impact any proposed or existing recreational facility.

HAWAII ELECTRIC LIGHT COMPANY, INC.
P. O. BOX 1027 HILO, HAWAII-96720



76-19-5B

JUN 3 1 19 PM 1976

DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

May 19, 1976

U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Attention: Mr. Ralph Segawa
Division Administrator

Subject: Kuakini Highway Realignment, Hawaii Project
No. RF-011-1(14) Draft Environmental Impact
Statement

Gentlemen:

Reference is made to your communication of March 8, 1976. We submit for your consideration our comments of the proposed realignment and widening of Kuakini Highway, and the effect it will have on our existing electric facilities.

Our comments referring to Figure 4 are as follows:

- 10A**
1. Line No. 1 will have few poles involved, however, disruption of power will cause some concern to the 69KV system. There are no alternate feeders to bypass this segment of the 69KV line.

The poles involved would be at the end of the project. This also may involve poles with underground cable risers to Kilohana Subdivision.

- 10B**
2. Line No. 6 from about Hualalai Road, approximately 15,500 feet of 69KV transmission and 12KV distribution lines will be affected. Forty-four poles (guy poles included) and 21 deadman concrete anchors. The approximate cost to reconstruct this line to today's standard is \$360,000.

This expenditure does not include the cost of rearranging underground feeders to various hotels and/or condominiums, etc., along Kuakini Highway. Obviously, power interruptions will be more frequent on this line relocation and rearrangement.

Appendix I

HAWAII ELECTRIC LIGHT COMPANY, INC.

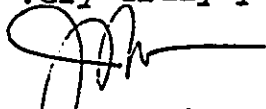
U.S. Department of Transportation
Page Two
May 19, 1976

The placement of 69KV transmission line will be in an underground facility. The cost is prohibitive should the distribution system be placed underground. Switching stations and/or substation sites may be required to accommodate increased load demands in this area.

3. Line No. 8 from Palani Junction to 2,000 feet along Kuakini Highway, 12 poles and 9 deadman concrete anchors would cost approximately \$66,000 to reconstruct at today's standard.
4. The combined cost of Line No. 6 and Line No. 8 would be \$426,000.
5. Lead time to order materials are important.

Should you have any questions, please do not hesitate to phone or write us.

Very truly yours,



Jitsuo Niwao, Manager
Engineering Department

JN:bk

Appendix I

EVALUATION

Hawaii Electric Light Company, Inc.

- 10A. Line 1 has been selected as the State's preferred route. Proper coordination with the Hawaii Electric Light Company, Incorporated, will be initiated during the design stage of the project.
- 10B. We are grateful for this information.

Advisory Council
On Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

April 5, 1976

Mr. Ralph T. Segawa
Division Administrator
Region Nine
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

This is in response to your request of March 8, 1976 for comments on the draft environmental statement (DES) for the Kuakini Highway Realignment, Project No. RF-011-1(14), Hawaii County, Hawaii. Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council has determined that your DES appears adequate concerning compliance with Section 106 of the National Historic Preservation Act of 1966.

However, with respect to compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" issued May 13, 1971, it is noted that the proposed undertaking will adversely effect the Kona Field System and the Great Wall of Kuakini, properties which appear to be eligible for inclusion in the National Register of Historic Places and therefore entitled to the protection of the Executive Order 11593. It is also noted that the Federal Highway Administration (FHWA) is aware of the requirements of the Executive Order 11593 and is currently preparing a preliminary case report pursuant to Section 800.4(f) of the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800).

11A Accordingly, in order to expedite the consultation process, the preliminary case report should contain the following information:

1. a general description of the proposed undertaking with explanatory graphic material;
2. a description of the properties included in or eligible for inclusion in the National Register to be affected by the undertaking, identifying the significant features of the properties;

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

Appendix I

Page 2
April 5, 1976
Mr. Ralph T. Segawa
Kuakini Highway Realignment

3. an evaluation of the effect of the undertaking upon the properties included in or eligible for inclusion in the National Register;
4. an outline of measures taken in considering the undertaking's effect upon the properties included in or eligible for inclusion in the National Register, including:
 - a. an expression of the views of the State Historic Preservation Officer
 - b. an indication of the support or opposition of units of government, as well as public and private agencies and organizations
 - c. a review of alternatives which would avoid any adverse effects
 - d. a review of alternatives which would mitigate any adverse effects
5. The status of this project in your agency's approval process.

The case report should be completed and forwarded to the Council at your earliest convenience.

Pending receipt of the Council's comments, the Council requests that FHWA refrain from taking any action with regard to the undertaking that will foreclose proper Advisory Council consideration of existing alternatives to avoid or satisfactorily mitigate any adverse effects on the properties in question.

Until the requirements of the Executive Order 11593 and the procedures are met, the Council considers the DES to be incomplete in its treatment of the cultural resources. To remedy this deficiency, the Council will provide substantive comments on the undertaking's effects on the cultural resources through the process detailed in the procedures. Please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946, to assist you in completing

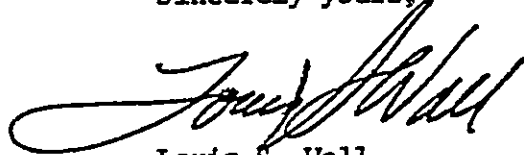
Appendix I

Page 2
April 5, 1976
Mr. Ralph T. Segawa
Kuakini Highway Realignment

this process as expeditiously as possible.

Your continued assistance and cooperation are appreciated.

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

Appendix I

EVALUATION

Advisory Council on Historic Preservation

- 11A. A preliminary case report has been prepared and processed in accordance with the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R., Part 800). The project Memorandum of Agreement is included in the Section 4(f) Statement.



DEPARTMENT OF PLANNING
AND ECONOMIC DEVELOPMENT

Kamamalu Building, 230 South King St., Honolulu, Hawaii • Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

GEORGE R. ARIYOSHI
Governor

HIDETO KONO
Director

FRANK SKRIVANEK
Deputy Director

March 18, 1976

Ref. No. 0589

Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Draft Environmental Impact Statement for Kuakini Highway
Realignment, Project No. RF-011-1(14)

Thank you for your letter of March 8, 1976, requesting our comments
regarding the subject draft statement.

12A While we note that the EIS does discuss the anticipated impacts
of highway realignment on the future development and use of adjacent lands, we
feel that further discussion is warranted regarding the subsequent demand for
public facilities and services in the area. The relationship of these sub-
sequent demands to the County's planned development and phasing of public
facilities and services should be adequately discussed.

We have no further comments to offer at this time but appreciate
the opportunity to review the subject statement.

Sincerely,


HIDETO KONO

Appendix I

EVALUATION

Department of Planning and Economic Development

- 12A. Section V.D., a discussion of the highway's secondary impacts has been expanded to include a statement regarding the increased demand for public facilities and services. While this demand will admittedly increase, the Department of Health, Education and Welfare (see Appendix J, Comments Not Requiring Discussion) has indicated that "a different level or extent of services" is not anticipated.

Appendix I



REGION IX
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, California 94102

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL HOUSING ADMINISTRATION
HONOLULU INSURING OFFICE
P.O. BOX 3377
HONOLULU, HAWAII 96801

April 30, 1976

IN REPLY REFER TO:
9.7U (Johnson/
546-5554)

Mr. Ralph T. Segawa
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Kuakini Highway Realignment
Hawaii Project No. RF-011-1(14)
Draft Environmental Impact Statement

In accordance with your request, we have reviewed the subject Draft Environmental Impact Statement.

13A It appears that the selection of line #1 of the proposed alignments would be most beneficial in terms of urban design, growth potential, economics and social considerations. However, the safety of the people utilizing existing Kuakini Highway should not be ignored. Remedial construction to eliminate substandard design and mitigation of hazards at intersections should be provided along Kuakini Highway.

We would appreciate a copy of the Final Environmental Impact Statement.

Sincerely,

Alvin K. H. Pang
Alvin K. H. Pang
Director

cc:
Council on Environmental Quality

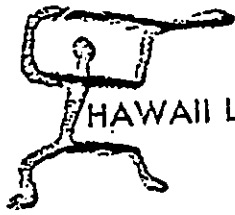
Appendix I

EVALUATION

Department of Housing and Urban Development

- 13A. Safety has been a major consideration of this project and has been discussed in Sections I. and V. High-speed requirements of the existing facility may be eliminated and congestion may be reduced due to the construction of Line 1. In addition, County plans have indicated that the existing Kuakini Highway may be converted to a four-lane minor arterial to be used primarily as a local facility.

Appendix I



HAWAII LEEWARD PLANNING CONFERENCE

March 18, 1975

Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Re: Letter 915EC

Dear Mr. Segawa:

Thank you for sending us the Draft Environmental Impact Statement for the Kuakini Highway Realignment Project at Kailua-Kona. We will definitely offer comments after we complete our review. Highway improvements under the County's proposed Kailua Village plan is urgently needed. We are happy to see the project progress to the final route selection stage.

14A May I request that two (2) copies be sent to the Kailua Special District Commission. This Committee, appointed by the Mayor, serves in an official capacity and makes recommendations to the County Planning Department. The Chairman is:

Mr. Don Walker
Kona Industries
Post Office Box
Kailua-Kona, Hawaii 96740

The Kona Mauka Trollers organization should be added to your mailing list. They have a strong interest in this project. The President is:

Mr. Roy Morioka
Hawaiian Telephone Company
Post Office Box
Kailua-Kona, Hawaii 96740

Thank you.

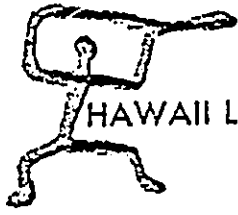
Aloha,

W. Y. Thompson
W. Y. Thompson
Executive Secretary

WYT:ma

P.O. BOX 635 KAILUA-KONA, HAWAII 96740 PHONE 329-1758

Appendix I



HAWAII LEEWARD PLANNING CONFERENCE

April 30, 1976

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

The Hawaii Leeward Planning Conference voted to endorse Line No. 1, as shown on Figure 4 of the Draft Environmental Impact Statement for the Kuakini Highway Realignment, Project No. RF-011-1(14). For several strong reasons, we endorse this road alignment:

- 14B** 1. Earlier plans generally followed Line No. 1 and other agencies have accepted this. The County Department of Water Supply and State Division of Water and Land Development have developed water main extension plans along this route. This water main extension is important to the area north of Kailua. A sixteen-inch water main is fed by an eight-inch pipeline. The new water main extension has been unduly delayed pending the selection of the route alignment.
- 14C** 2. The recently adopted Kailua Village Plan is predicated on selection of Alignment No. 1. Proposed zoning will be adversely affected by picking another route. Copies of the Kailua Village Plan were made available earlier to the State Department of Transportation.
- 14D** 3. Historical considerations, as stated in the draft E.I.S., is an important element of the route selection. Earlier discussions between our Hawaii Leeward Planning Conference and State Historical Branch disclosed no obstacle to Alignment No. 1 if prescribed regulations are followed.
- 14E** 4. Selection of a route other than Line No. 1 will adversely affect the Kailua Village Plan and its mall project. The closing of Alii Drive in Kailua will create additional traffic on Kuakini Highway. Local traffic will co-mingle with through traffic with dire results.

Mr. Ralph T. Segawa
April 30, 1976
Page Two

14F

5. Ocean-oriented recreation is a significant feature of the Kona lifestyle. Many cumbersome trailers with fishing boats come down Kuakini Highway, up Palani through the shopping center, and then on Queen Kaahumanu Highway to the Honokohau Small Boat Harbor. What a relief for local traffic if this type of ungainly vehicular traffic were routed through Line 1.

14G

6. People are taking it for granted that Line No. 1 is the most logical and practical route and Line No. 1 has appropriately been referred to as the Queen Kaahumanu Highway extension.

14H

7. I'm sure others will emphasize the reasons I have listed here. And, no doubt, additional information in support of Line No. 1 will be sent you. In short, there is near unanimous agreement on Line No. 1 by our Kona Community. Your selection of Line No. 1 will reflect consensus of local opinion and, therefore, we urge you to make this selection.

Thank you.

Aloha,


W. Y. Thompson
Executive Secretary

WYT:ma

cc: E. Alvey Wright
Attn: Tets Harano
Representative Minoru Inaba
Senator John Ushijima
Senator Stanley Hara
Senator Richard Henderson

Appendix I

EVALUATION

Hawaii Leeward Planning Conference

- 14A. Copies have been sent.
- 14B. The State Department of Transportation is aware of these plans.
- 14C, D, E, F, G, H. We agree with these comments are appreciative of the information contained therein.

Appendix I

COMMENTS NOT REQUIRING DISCUSSION

Appendix I



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION IX
 100 CALIFORNIA STREET
 SAN FRANCISCO, CALIFORNIA 94111

APR 20 1976

ASST. DIR.	
AD. ASST.	
CHIEF OF BUREAU	
IDENT. DIV.	
INSP. DIV.	
LABORATORY	
LEGAL COUNSEL	
PLANNING & EVALUATION	
RECORDS & COMM. DIV.	
TRAINING DIV.	
ADMIN. SERV. DIV.	
FILE	
ADD. DESIG. Q/S	

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F. E. Hawley
 Federal Highway Administration
 Two Embarcadero Center, Suite 530
 San Francisco CA 94111

Dear Mr. Hawley:

The Environmental Protection Agency has received and reviewed the draft environmental statement for the Kuakini Highway Realignment, North Kona District, Island of Hawaii.

EPA's comments on the draft environmental statement have been classified as Category LO-1. Definitions of the categories are provided on the enclosure. The classification and the date of EPA's comments will be published in the Federal Register, in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action, and the adequacy of the environmental statement.

EPA appreciates the opportunity to comment on this draft environmental statement, and requests one copy of the final environmental statement when available.

Sincerely,

Paul De Falco, Jr.
 Paul De Falco, Jr.
 Regional Administrator

Enclosure

cc: Council on Environmental Quality

EIS CATEGORY CODES

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objection to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

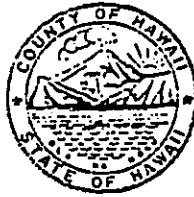
Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

ROBERT M. YAMADA
Chairman & Presiding Officer

TOMIO FUJII
Vice Chairman



DANTE K. CARPENTER
FRANK DE LUZ, III
IKUO HISAOKA
WILLIAM S. KAWAHARA
MERLE K. LAI
ANDREW C. LEVIN
JOSEPHINE R. YADAO
Council Members

COUNTY COUNCIL
County of Hawaii
Hawaii County Building
Hilo, Hawaii 96720

April 14, 1976

Re: PWC-73/C-1590.1

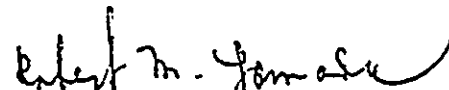
Mr. Ralph T. Segawa
Division Administrator
U. S. Department of Transportation
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Re: Kuakini Highway Realignment

In reply to your letter of March 8, 1976,
please be informed that the Hawaii County
Council at its April 12 meeting went on
record to support Line 1 of the proposed
project.

In the review of the proposed project by
the Council's Public Works Committee and
after studying the various proposed rea-
lignment proposals, it was concluded that
Line 1 would best serve all concerned.

Thank you for the opportunity to comment.


Robert M. Yamada
COUNCIL CHAIRMAN

Appendix I



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGIONAL OFFICE
50 FULTON STREET
SAN FRANCISCO, CALIFORNIA 94102
OFFICE OF ENVIRONMENTAL AFFAIRS

OFFICE OF
THE REGIONAL DIRECTOR

April 9, 1976

U.S Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd.
Suite 613
Honolulu, Hawaii 96813

RE: Kuakini Highway
Realignment Hawaii
Project #RF 0111(14)
Draft Environmental
Impact Statement.

Dear Sir:

The above Draft Environmental Impact Statement has been reviewed in accordance with the interim procedures of the Department of Health, Education and Welfare as required by Section 102 (2) (c) of the National Environmental Policy Act, PL 91-190.

The material provided appears to describe adequately the impacts of the proposed action as well as the alternatives that were presented. The major concerns of this department are related to possible impacts upon the health of the population, services to that population and changes in the characteristics of the population which would require a different level or extent of services. Our review does not identify problems related to these specific concerns.

Thank you for the opportunity to review this statement. We would appreciate a copy of the final Environmental Impact Statement.

Sincerely,

for
 Evelyn C. Wachtel
James D. Knochenhauer
Regional Environmental Officer

cc: OS/OEA
CEQ

Appendix I

GEORGE R. ARIYOSHI
GOVERNOR



JOHN FARIAS, JR.
CHAIRMAN, BOARD OF AGRICULTURE

YUKIO KITAGAWA
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF AGRICULTURE
1428 SO. KING STREET
HONOLULU, HAWAII 96814

March 15, 1976

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MEMORANDUM

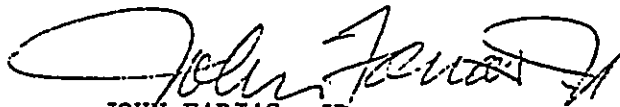
To: U.S. Department of Transportation
Federal Highway Administration, Region 9

Attn: Mr. H. Kusumoto, Assistant Division Administrator

Subject: Kuakini Highway Realignment, Hawaii Project
No. RF-011-1 (14) Draft Environmental Impact
Statement

The Department of Agriculture has reviewed the subject draft EIS. There are no additional comments or suggestions. Agricultural impact should be limited to those noted in the statement relating to pasture use (page 27). Improved traffic circulation around Kailua should benefit farmers shipping products through Kawaihae and Ke Ahole Airport.

Thank you for the opportunity to review this matter. We are not interested in receiving the final copy of subject EIS.


JOHN FARIAS, JR.
Chairman, Board of Agriculture

JF:d:h

Appendix I

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ASIA
PACIFIC/REGION RECEIVED
P. O. BOX 4009
HONOLULU, HAWAII 96813

JUL 8 1976

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Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813
ST. DEPT. OF TRANS.
HWYS DIV
PLANNING BR.

JUL 14 2 10 PM 1976



DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

Gentlemen:

Thank you for your letter of June 21, 1976, informing us of the Kuakini Highway Realignment, Project No. RF-011-1(14), public hearing.

Since the project is not expected to impact our requirements, we will not attend the hearing nor forward any comments.

Sincerely,

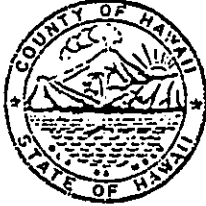
A handwritten signature in black ink, appearing to be "J. Ing".

J. ING
Acting Chief, Airway Facilities Division, APC-400

Appendix I

HERBERT T. MATAYOSHI
MAYOR

EDWARD K. HARADA
CHIEF ENGINEER



COUNTY OF HAWAII
DEPARTMENT OF PUBLIC WORKS
25 AUPUNI ST.
HILO, HAWAII 96720

BUREAUS AND DIVISIONS:
AUTOMOTIVE EQUIPMENT & MOTOR POOL
BUILDING CONSTRUCTION & INSPECTION
PLANS AND SURVEYS
ROAD CONSTRUCTION AND MAINTENANCE
SEWERS AND SANITATION
TRAFFIC SAFETY AND CONTROL

March 16, 1976

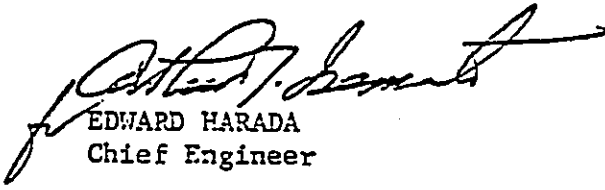
U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, HI 96813

Attention: Mr. Ralph T. Segawa
Division Administrator

SUBJECT: Kuakini Highway Realignment, Hawaii
Project No. RF-011-1(14) Draft Environmental Impact Statement
Re: 915 EC

Thank you for your March 8, 1976 letter submitting the subject draft environmental impact statement for our review.

We have reviewed the draft environmental impact statement and have no comments to offer.


EDWARD HARADA
Chief Engineer

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Appendix I

JOHN L. MCCLELLAN ARK., CHAIRMAN
WARRON G. MACMURSON, WASH.
JOHN C. STENNIS, MISS.
JOHN G. EASTON, R.I.
ROBERT C. BYRD, W. VA.
CALEW. MCCOY, WYO.
MIKE MANSFIELD, MONT.
WILLIAM PROXMIRE, WIS.
JOSEPH M. MONTOYA, N. MEX.
DANIEL K. INOUE, HAWAII
ERNEST F. HOLLINGS, S.C.
BIRCH BAYH, IND.
THOMAS P. KAGLETON, MO.
LAWTON CHILES, FLA.
J. BENNETT JOHNSTON, LA.
WALTER D. HULLSTON, KY.

JAMES R. CALLOWAY
CHIEF COUNSEL AND STAFF DIRECTOR

MILTON R. YOUNG, N. DAK.
ROMAN L. HRUSKA, NEBR.
CLIFFORD P. CASE, N.J.
HIRAM L. FONG, HAWAII
EDWARD W. BROOKE, MASS.
MARK O. MATFIELD, CALIF.
TED STEVENS, ALASKA
CHARLES MCC. NATHAN, JR., MD.
RICHARD S. SCHWEIKER, PA.
HENRY BELMONT, CALIF.

United States Senate

COMMITTEE ON APPROPRIATIONS
WASHINGTON, D.C. 20510

March 16, 1976

Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
677 Ala Moana Blvd, Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Thank you for providing me, under cover of your letter of March 8, with a copy of the draft environmental impact statement for the Kuakini Highway Realignment Project. I have no comments to make on this matter.

With aloha-

Sincerely yours,


Hiram L. Fong

HLF:ckcc

Appendix I

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



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

March 23, 1976

GEORGE A. L. YUEN
DIRECTOR OF HEALTH

Audrey W. Mertz, M.D., M.P.H.
Deputy Director of Health

Henry N. Thompson, M.A.
Deputy Director of Health

James S. Kumagai, Ph.D., P.E.
Deputy Director of Health

In reply, please refer to:

File: EPHS - SS

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

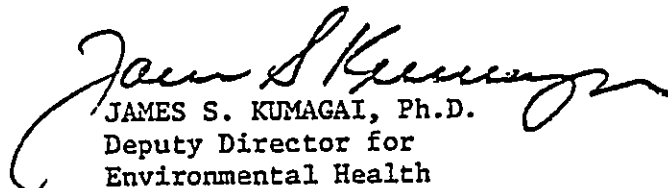
Dear Mr. Segawa:

Subject: Request for Comments on Environmental Impact Statement (EIS)
for Kuakini Highway Realignment, Hawaii Project

Thank you for allowing us to review and comment on the subject
EIS. Please be informed that we have no additional comments on this
project.

We realize that the statements are general in nature due to
preliminary plans being the sole source of discussion. We, therefore,
reserve the right to impose future environmental restrictions on the
project at the time final plans are submitted to this office for review.

Sincerely,


JAMES S. KUMAGAI, Ph.D.
Deputy Director for
Environmental Health

Appendix I

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

440 Alexander Young Building, Honolulu, HI 96813

March 25, 1976

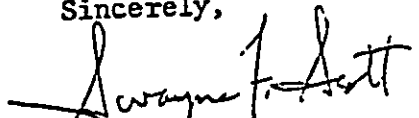
Mr. Ralph T. Segawa
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Draft Environmental Impact Statement for the Proposed
Kuakini Highway Realignment, Hawaii Project No. RF-011-1(14)

We have reviewed the subject dEIS and have no comments to offer.
Thank you for the opportunity to review this document.

Sincerely,


Francis C. H. Lum
State Conservationist



Appendix I

GEORGE R. ARIYOSHI
GOVERNOR



VALENTINE A. SIEFERMANN
MAJOR GENERAL
ADJUTANT GENERAL

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
FORT RUGER, HONOLULU, HAWAII 96916

HIENG

2 APR 1976


Mr. Ralph T. Segawa, Division Administrator
U. S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

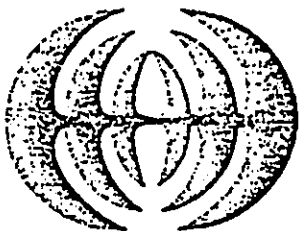
Kuakini Highway Realignment, Hawaii Project No.
RF-011-1(14) Draft Environmental Impact Statement

Thank you for sending us a copy of the Environmental Impact Statement
for the proposed subject project. We have reviewed the publication
and have no comments to offer.

Very truly yours,


VALENTINE A. SIEFERMANN
Major General, HANG
Adjutant General

Appendix I



HAWAII HOTEL ASSOCIATION
SUITE 907
2270 KALAKAUA AVENUE
HONOLULU, HAWAII 96815
TELEPHONE 923-0407

March 25, 1976

Mr. H. Kusumoto
Assistant Division Administrator
U. S. Department of Transportation
677 Ala Moana Boulevard - Suite 613
Honolulu, Hawaii 96813

Dear Mr. Kusumoto:

Your letter concerning the Kuakini Highway Realignment project addressed to Mr. Fred Honda has been turned over to me for reply as I am presently the president of the Hawaii Chapter of the Hawaii Hotel Association.

I personally have no comments to make regarding this project due to the fact that I am unfamiliar with this area in particular.

Mahalo and aloha,

Adi W. Kohler
President
Hawaii Chapter

Please reply to:
Mauna Kea Beach Hotel
P. O. Box 218
Kamuela, Hawaii 96743



Appendix I

GEORGE R. ARIYOSHI
GOVERNOR



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

HIDEO MURAKAMI
COMPTROLLER
MIKE N. TOKUNAGA
DEPUTY COMPTROLLER

LETTER NO. (P) 1354.6

MAR 31 1976

Mr. Ralph T. Segawa
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Kuakini Highway Realignment, Hawaii
Project No. RF-011-1(14)
Draft Environmental Impact Statement

Thank you for this opportunity to comment on the subject
draft environmental impact statement.

All three alternatives will have no adverse environmental
impact on any existing or planned facilities serviced by our
Department. As such we have no comments to offer. However,
we would appreciate a copy of the final environmental impact
statement.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Hideo Murakami".

HIDEO MURAKAMI
State Comptroller

Appendix I

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

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

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

March 29, 1976

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
677 Ala Moana Blvd, Suite 613
Honolulu, Hawaii 96813

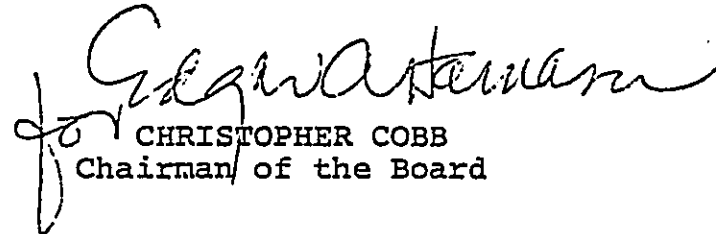
Your 915EC.

Dear Mr. Segawa:

Kuakini Highway Realignment, Hawaii Project
No. RF-011-1(14) Draft Environmental Impact
Statement

We have no further comments to offer on the draft
EIS for the Kuakini Highway realignment project.

Sincerely,


CHRISTOPHER COBB
Chairman of the Board

cc: Historic Sites
DOWALD

Appendix I

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

PACIFIC-ASIA REGION
P. O. BOX 4009
HONOLULU, HAWAII 96813



APR 29 1976

Mr. Ralph T. Segawa, Division Administrator
Federal Highway Administration
Region Nine
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

We have reviewed the Draft Environmental Impact Statement for Kuakini Highway Realignment, Project No. RF-011-1(14).

Since the project has no impact on air activities, we do not feel it necessary to review the final environmental impact statement.

Thank you for the opportunity to review the Draft EIS.

Sincerely,

A handwritten signature in cursive script that reads "Edwin T. Kaneko".

EDWIN T. KANEKO
Chief, Airway Facilities Division, APC-400

Appendix I



KONA BOARD OF REALTORS
POST OFFICE BOX 2908
KAILUA-KONA, HAWAII 96740

April 21, 1976

Mr. Ralph T. Segawa, Division Administrator
United States Department of Transportation
Federal Highway Administration
677 Ala Moana Boulevard
Honolulu, Hawaii 96813

Re: Draft Environmental Impact Statement
Kuakini Highway Realignment
Hawaii Project #RF-011-1 (14)

Dear Mr. Segawa,

Thank you for the opportunity to comment on the above draft.

We thoroughly agree that Line 1 is the most desirable alternative for this project. It is the least expensive, and will not disrupt existing homes and businesses. Alignment along Line 1 will help maintain and preserve the village atmosphere of Kailua by moving traffic away from it. Construction of the Highway along Line 1 will make presently marginally used and inaccessible lands available for eventual development to serve the needs of our rapidly growing community. All of these points conform to goals expressed in the Kona Community Development Plan.

We would appreciate receiving a copy of the Final Environmental Impact Statement when it is completed.

Sincerely,

A handwritten signature in cursive script, appearing to read 'David Walker'.

David Walker

For the Community Planning Committee

REALTOR® is a registered mark which identifies a professional in real estate who subscribes to a strict Code of Ethics as a member of the NATIONAL ASSOCIATION OF REALTORS.

Appendix I

APPENDIX J

COMMENTS AND EVALUATIONS

PUBLIC HEARING

PUBLIC HEARING

July 8, 1976

KUAKINI HIGHWAY REALIGNMENT

In accordance with Section 128 of Title 123, U.S.C., a public hearing was held on July 8, 1976, in the New Hotel King Kamehameha, at 7:37 p.m. The public hearing was attended by approximately 64 persons.

The questions and testimonies as included in this section pertain only to the social, economic and environmental effects of this project. A transcript of the entire proceedings and copies of written testimonies are available for review at: State Department of Transportation, Land Transportation Facilities Division, Planning Branch, 600 Kapiolani Boulevard, Honolulu, Hawaii 96813.

1. Testimonies

The following individuals testified at the public hearing in favor of the proposed realignment.

- a. Councilwoman Josephine Yadao
- b. Councilman William Kawahara
- c. Representative Minoru Inaba
- d. Mr. John Iwane
- e. Mr. William J. Paris, Vice Chairman, Kona Soil and Water Conservation District
- f. Ms. Wattie May Hedeman
- g. Mr. Leon Sterling, Jr., Chairman, Hawaii County Planning Commission

The following are summarized statements of their testimonies:

- a. The proposed realignment is in conformance with the Hawaii County General Plan and the Kailua Village Urban Design Study.
- b. No residences or businesses would be impacted by the realignment.

Appendix J

- c. No sites that are listed in National Register of Historic Places would be affected.
- d. The realignment would greatly augment emergency and civil defense operations.
- e. Traffic congestion would decrease at the Palani Road-Kuakini Highway intersection.
- f. Traffic passing through Kailua would be expedited by the proposed realignment.

Evaluation

We agree with these testimonies.

2. Questions

The following questions were raised:

- Q: How close to the Kona Hillcrest Subdivision is the proposed highway and what are the anticipated noise levels?
- A: We will be approximately 40 feet from the nearest residence. The noise level exceeded 10 percent of the time (L₁₀) was estimated based upon the preliminary alignment. The predicted L₁₀ noise level at the closest Kona Hillcrest residence is 64 dBA.
- Q: What percentage of traffic would be diverted onto the realigned Kuakini Highway?
- A: Our traffic study shows that diversion would range from 20 to 25 percent of the total forecasted volume.

3. Written Testimonies

The following individuals have provided written testimonies in favor of the proposed realignment;

- (a) Mr. Edward Harada, Chief Engineer, Department of Public Works, County of Hawaii
- (b) Mr. Harold A Sanders
- (c) Mr. W. Y. Thompson, Executive Secretary, Hawaii Leeward Planning Conference

- (d) Mr. Willis H. Sanburn, Vice President, Waikoloa
- (e) Mr. James M. Greenwell, President, Lanihau Corporation
- (f) Mr. Himeo Fujitani
- (g) Ms. Wattie Mae Hedemann, Realtor, West Hawaii Realty, Inc.
- (h) Mr. Arnold T. Abe, Attorney for Taiyo Fudosan Company, Ltd.
- (i) Mr. Theodore K. T. Wong
- (j) Mr. Francis J. Moore
- (k) Mr. Guido Giacometti, President, Kamehameha Corporation
- (l) Mr. C. W. Stevenson, Vice President and Trust Officer, Liliuokalani Trust

Their statements, in addition to oral testimonies of the public hearing are summarized as follows:

- (a) By routing traffic out of Kailua-Kona, roads and streets would be reserved for local traffic.
- (b) The new highway will relieve the containment of Kailua-Kona, and will provide for Kailua's future expansion.
- (c) The expansion of County water services in North Kona could more easily be accomplished if the realignment proposal were implemented.
- (d) The realignment would remove heavy truck volume from the center of Kailua-Kona, and consequently, its associated problems would also be removed.

Evaluation

We agree with these testimonies.

The following individuals submitted written testimonies which opposed implementation of either Line 6 or 8:

- (1) Mr. Himeo Fujitani

- (2) Mr. James M. Greenwell, President, Lanikai Corporation
- (3) Mr. W. Y. Thompson, Executive Secretary, Hawaii Leeward Planning Conference
- (4) Ms. Eleanor A. Arndt, Arndt Realty and Investment Co.
- (5) Mr. Francis J. Moore

Several persons stated that either Line 6 or 8 would be disadvantageous with respect to their business operations. Also, it was indicated that both of these proposals conflicted with the County General Plan and consequently, future orderly expansion would be inhibited. Lastly, it was pointed out that congestion along Palani Road would not be relieved.

Evaluation

We concur.

4. Conclusion

At this hearing, the State recommended the construction of the realignment alternative. Testimonies that followed the presentation were unanimously in favor of the State's recommendation and this support was primarily based on the positive social, economic and environmental effects of this project.

APPENDIX K

LIST OF REQUIRED APPROVALS

LIST OF REQUIRED APPROVALS

Local Agency

Subdivision Approval

County of Hawaii, Department of Planning. (After
corridor selection.)

KUAKINI HIGHWAY REALIGNMENT
Project No. RF-011-1(14)

ADMINISTRATIVE ACTION

SECTION 4(f) STATEMENT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

KUAKINI HIGHWAY REALIGNMENT
Project No. RF-011-1(14)

involving the
realigning and/or widening of
3.1 miles of Kuakini Highway from
Palani Road to the Kealakowaa Heiau
in the North Kona District
Island of Hawaii

ADMINISTRATIVE ACTION

SECTION 4(f) STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and

State of Hawaii Department of Transportation
Highways Division

Submitted pursuant to 16 U.S.C. 470(f)
and 49 U.S.C. 1653(f)

SECTION 4(f) STATEMENT
KUAKINI HIGHWAY REALIGNMENT

TABLE OF CONTENTS

	<u>Page No.</u>
SUMMARY STATEMENT	S-1
I. INTRODUCTION	1
II. PROJECT DESCRIPTION	
A. Proposed Highway Improvement	3
B. Relationship to Existing Transportation Network	3
C. Need for Improvement	5
D. Schedule	6
E. Description of Alternatives	7
III. DESCRIPTION OF SECTION 4(f) LAND	13
IV. SECTION 4(f) LANDS/HIGHWAY INVOLVEMENT	
A. Great Wall of Kuakini	15
B. Kona Field System	18
V. DETERMINATION THAT THERE IS NO POSSIBLE OR PRUDENT ALTERNATIVE	24
VI. MEASURES TO MINIMIZE HARM TO SECTION 4(f) LANDS	28
VII. COORDINATION WITH AGENCIES HAVING JURISDICTION OVER SECTION 4(f) LANDS	
A. State Historic Preservation Officer	29
B. Advisory Council on Historic Preservation	30
C. U.S. Department of the Interior	31
D. U.S. Department of Housing and Urban Development	32
E. U.S. Department of Agriculture	33

FIGURES

SUMMARY STATEMENT

The proposed highway improvement consists of realigning the existing Kuakini Highway between Palani Road and the Kealakowaa Heiau to provide an easterly bypass of Kailua Village, North Kona District, Island of Hawaii (Figure 1).

This improvement will adversely impact the following two historical resources:

1. The Great Wall of Kuakini
2. The Kona Field System

Both resources are eligible for the National Register of Historic Places.

Alternatives to the proposed action were evaluated and a determination was made that there are no possible or prudent alternatives to the proposed highway improvement. A "no improvement" alternative was considered but was found to be unfeasible and contrary to the needs and desires of the community.

Studies have shown that use of these historical resources cannot be avoided. The 6-mile long Great Wall of Kuakini is oriented in a north-south direction. The Kona Field System is an areal resource measuring 3 miles wide by 18 miles long. The proposed northwest-southeast oriented highway cannot avoid intersecting the Wall nor can the highway be located

beyond the Field System's extensive boundaries and still
provide its intended service.

SECTION 4(f) STATEMENT

KUAKINI HIGHWAY REALIGNMENT

I. INTRODUCTION

To correct major roadway deficiencies and to alleviate anticipated traffic congestions, the State Department of Transportation, Land Transportation Facilities Division in cooperation with the Federal Highway Administration, proposes to extend the Queen Kaahumanu Highway to provide an easterly bypass of Kailua Village on the Island and County of Hawaii, State of Hawaii.

Implementation of the proposed highway improvement will impact certain Section 4(f) lands.

Section 4(f) land is a publicly owned land such as a park, recreation area, or wildlife and waterfowl refuge of National, State, or Local significance as determined by the Federal, State or Local official having jurisdiction thereof, or land from historic sites of national, State, or local significance as so determined by such official.

Section 1653(f) of 49 U.S.C. and Section 138 of 23 U.S.C. permits the Secretary of Transportation to approve a project which requires the use of such land only if a determination has been made that there is no

feasible and prudent alternative to the use of such land, and such project includes all possible planning to minimize harm to the Section 4(f) land resulting from such use.

The purpose of this Section 4(f) statement is to document the consideration, consultations and alternatives studied in making the aforesaid determination and to document all planning done to minimize harm to the Section 4(f) land should it be necessary to use such lands.

II. PROJECT DESCRIPTION

A. Proposed Highway Improvement (Line 1)

The Kuakini Highway Realignment project begins at Palani Road as a tangent extension of the new Queen Kaahumanu Highway and by-passes Kailua Village on the upland side. It proceeds southeasterly and joins with the tangent which is a northerly diverging extension of the existing Kuakini Highway from the vicinity of the Kealakowaa Heiau. For purposes of this statement, the improvement is identified as Line 1 on Figure A of the Historical Properties Report which is an enclosure to the Federal Highway Administration's November 10, 1977 letter to the Advisory Council (Chapter VII). Two lanes will be constructed along the entire 3.1 mile length. The proposed 150 foot right-of-way width is sufficient to accommodate future traffic requirements (Figure 2).

B. Relationship to Existing Transportation Network

Presently, the major traffic arteries serving the project area are:

1. Mamalahoa Highway, FAS 190, (connecting Kona with the South Kohala District).
2. Kuakini Highway, FAP 11, (connecting Kailua with the inland Keauhou area).
3. Alii Drive, FASC 187, (serving the shoreline areas between Kailua and Keauhou).

Access to the Kailua Bay area from Mamalahoa Highway is provided by Palani Road.

The County of Hawaii has plans to realign Alii Drive and has adopted the corridor shown in Figure A of the Historic Properties Report. It may also be possible to extend Alii Drive to Line 1 along the south side of the Kona Hillcrest Subdivision.

Construction was recently completed for another major highway, the Queen Kaahumanu Highway (FAP 19). This 35 mile long facility affords a direct coastal route between Kailua and the port and community of Kawaihae in the South Kohala District. Previously, two lanes were completed linking Ke-Ahole Airport, Kailua, Anaehoomalu and Kawaihae. The 8-mile section between Ke-Ahole Airport and Kailua serves traffic between the Airport, the Honokohau Small Boat Harbor and Kailua.

The State is also studying a highway improvement of 30 miles from the end of this project southerly to Papa.

With the construction of the Queen Kaahumanu Highway, this project and the section to Papa, a fast, safe and efficient belt highway will provide transportation from Kohala to Kau.

C. Need for Improvement

The Kuakini Highway Realignment study was primarily initiated to provide some relief from the growing congestion on the existing highway. The existing two-lane Kuakini Highway is 6.5 miles long and connects the towns of Kailua and Keauhou. Built in 1954 as a Federal Aid Secondary route, it has a 22-foot wide pavement, 5-foot shoulders and an 80-foot minimum right-of-way width. Within recent years the Kailua-Kona area has seen tremendous growth. The County General Plan indicates that this growth will continue. Traffic volumes will likely double in Kailua within the next 20 years from 10,000 vehicles per day to nearly 20,000 vehicles per day and this increased volume will seriously overburden the present facility.¹

Secondly, this study was initiated to analyze the present roadway conditions in order to reduce the growing amount of roadway-contributing accidents on the highway. Based on current standards, the section from Palani Road to the Kealakowaa Heiau is deficient in terms of alignment, superelevation, pavement widths, shoulder widths, and access control.

¹ State of Hawaii, Department of Transportation, Highways .
Division TA 74-11, August 1974

Furthermore, this highway serves as a combination "through" highway and local street, for which high-speed "through" traffic and slower local traffic are dangerously intermixed. These factors contribute to the accident rate being almost twice the average rate of a similar highway (Figure 3).

Finally, this study was initiated to provide continuity between Kuakini Highway and the new Queen Kaahumanu Highway. The Queen Kaahumanu Highway is a high-speed highway along the coast from Kawaihae to Kailua and ends abruptly at Palani Road. A 90-degree turning maneuver must be executed to continue south along Kuakini Highway.

D. Schedule

Preparation of plans, specifications and estimates should be completed by late 1979. The tentative date of rights-of-way acquisition is mid-1979 with construction to follow by late 1980.

This project is presently in the final stages of the planning phase which was initiated in August 1968. A corridor public hearing was held in Kailua on July 9, 1970 and again on July 8, 1976.

At both public hearings, testimonies were overwhelmingly in favor of the construction of Line 1.

E. Description of Alternatives

1. Alternatives Presented at the July 8, 1976

Public Hearing

Other highway corridor alternatives were considered and evaluated (Figure A, Historical Properties Report). These alternatives and their reasons for not being selected were:

a. Line 6

Line 6 also begins at the intersection of Palani Road and the Queen Kaahumanu Highway. Line 6 is a two-lane facility until its connection with Kuakini Highway near Hualalai Road. From Hualalai Road, Line 6 continues as a four-lane facility generally retracing Kuakini Highway to the Kealakowaa Heiau. Line 6 would have seriously impacted the businesses, residences and the Kailua playground fronting the existing highway.

b. Line 8

Line 8 would widen the existing Kuakini Highway to four lanes from Palani Road to the Kealakowaa Heiau. Its impact is similar to Line 6.

c. Safety and Intersection Improvements

This alternate is limited to installing safety devices, correcting a reverse curve, and improving the intersections of Palani and Hualalai Roads. These improvements, however, will not solve the growing traffic congestion confronting Kailua. Based on existing land uses, the area will still see considerable growth.

A "do nothing" alternate was also considered but since it would result in an overloaded and potentially dangerous highway, it was determined to be undesirable. Moreover, the transportation element of the General Plan for North Kona would not be implemented and orderly development as visualized may be inhibited.

2. Other Alternatives Presented at the July 9, 1970 Public Hearing

Figure 4 shows several other alternative alignments that were considered in the earlier planning stages but were dropped from consideration.

a. Line 2

Line 2 is a modification of Line 1 and is an alternate study to utilize 12 lots

in the Kona Heights Subdivision which were kept off the market by the developers for the proposed highway right-of-way. This line is about 130 feet shorter than Line 1 but requires an additional horizontal curve. Since Line 2 is basically the same as Line 1 but Line 1 has a safer intersection location with the Kona Heights access road and lower rights-of-way costs, Line 2 was dropped from consideration.

b. Line 3

Line 3 is coincident with Lines 1 and 2 for about 800 feet at the north end. It then proceeds seaward through the Lono Kona Subdivision to a junction with the existing Kuakini Highway at the Hualalai intersection. Line 3 then proceeds south coincident with Line 5 which will be described later.

Line 3 was dropped from further consideration for the following reasons:

- 1) It would require a steep grade.
- 2) It would require a five legged intersection which is highly undesirable from the standpoint of safety.

- 3) It would impose interruptions and congestion on "through" traffic because of the stop and turning maneuvers required at the intersection.
- 4) It would affect a substantial number of parcels in the Lono Kona Subdivision.

c. Line 4

Line 4 diverges makai from Lines 1 and 2 near Hualalai Road, crosses over the old Kailua-Keauhou Middle Road and continues south coincident with Lines 5, 6 and 7.

Line 4 was dropped from further consideration because of its steep grade and because its increased length over Line 1 or 2 could not be justified.

d. Line 5

Line 5 represents an upgrading of the existing Kuakini Highway, and the realignment between Palani Road and Hualalai Road provides for continuity.

Line 5 diverges from the Queen Kaahumanu Highway a half mile northwest of the Palani-Kailua-Kawaihae Roads intersection, crosses the Liliuokalani Trust Estate's industrial subdivision and descends to an

alignment parallel to and just upland of the existing Kuakini Highway. From there, Line 5 essentially retraces and improves the existing highway.

Adoption of this alignment would entail abandonment of the half mile portion of the Queen Kaahumanu Highway and disruption of operations in the Liliuokalani Trust Estate's industrial subdivision, currently being constructed. Line 5 was therefore eliminated from further consideration.

e. Line 7

Line 7 proceeds southerly from Palani Road through the upland end of the Lono Kona Subdivision to a parallel alignment adjacent to and seaward of the Great Wall of Kuakini. Passing between the Soil Conservation Service's Keopu Flood Control Basin and the Thurston House Ruins, the line intersects Hualalai Road at the lower end of the Aloha Kona Subdivision, then proceeds on the seaward side of the Pacific Empress Corporation property to an intersection with the existing Kuakini Highway and Walua Road, at a point just seaward of the Kona Hillcrest Subdivision.

Line 7 was eliminated due to the social and environmental conflicts between Palani Road and Walua Road. For this portion, two lanes were proposed to occupy a 100-foot minimum right-of-way. Three residences plus the Kailuan and Kona Gardens condominium establishments were likely to be affected. Also, sections of the Great Wall of Kuakini and surrounding areas of the Thurston House Ruins would be disturbed to the extent of seriously impairing its historic value.

III. DESCRIPTION OF SECTION 4(f) LAND

A Historical Properties Report was prepared in accordance with Presidential Order 11593 and the National Historic Preservation Act of 1966 to identify the historic resources in the project area (Appendix).

With the help of the Hawaii Division of State Parks and the State Historic Preservation Officer, seven properties in the immediate project area were determined to be eligible for inclusion in the National Register of Historic Places.

These were:

1. The Thurston House Ruins (Historic Site No. 10-28-7248)
2. The Kona Field System (Historic Site No. 10-37-6601)
3. The Kealakowaa Heiau (Historic Site No. 10-37-3833)
4. St. Michael's Catholic Church (Historic Site No. 10-37-7232)
5. Springer House (Historic Site No. 10-37-7233)
6. The Great Wall of Kuakini (Historic Site No. 10-37-7276)
7. Honuaula Platform (Historic Site No. 10-28-2004)

Further coordination with the State Historic Preservation Officer concluded in the determination that the proposed highway improvement (Line 1) would have an adverse impact on the Great Wall of Kuakini and the Kona Field System. The remainder of the historic properties would not be affected by Line 1 and are not subject to the provisions of Section 4(f) of the Department of Transportation Act. Documenting letters are contained in Chapter VII.

A description of the Great Wall of Kuakini and the Kona Field System is contained in the Historical Properties Report.

IV. SECTION 4(f) LANDS/HIGHWAY INVOLVEMENT

A description of the Section 4(f) Lands/Highway involvements follows:

A. Great Wall of Kuakini

1. Size and Location:

The Wall extends in a north-south direction for approximately 6 miles from Kailua to Keauhou, and is approximately 4 to 6 feet high and 4 feet wide. Refer also to the Historical Properties Report in the Appendix.

Line 1 will breach the Wall at a point approximately 2,300 feet from Palani Road. It will replace approximately 150 linear feet of the Wall (Figure 5).

2. Type:

The Wall is a historic site of local significance and is a potential nominee to the National Register of Historic Places.

3. Available Activities:

None

4. Facilities:

None

5. Usage:

The Wall is currently used as a boundary marker or to confine cattle. The highway will not alter the present usage of the Wall.

6. Relationship to Other Similarly Used Land:
Not applicable
7. Access:
Portions of the Wall can be viewed where existing roads have already breached it. Public access is restricted since most of the Wall is on private property.
The new highway will provide public access to another portion of the Wall.
8. Ownership Within the Project Area:
Private
9. Applicable Clauses Affecting Title:
The legal descriptions in existing land titles either include the Great Wall of Kuakini within their boundaries or set the middle of the Wall as the boundary between two land titles. No reservation, exception or statement of preservation of the Wall was made by the Government in the Awards and Grants.
10. Unusual Characteristics:
None. The Wall has little viewer appeal or interest as its appearance is similar to many lava-rock walls currently used as boundary markers or corrals.

11. Consistency with Community Goals:

This project is consistent with the overall planning goals established by the County Planning Department and is reflected in the transportation requirements needed to support the development proposals of their General Plan. In addition, the County Planning Department's July, 1976 report entitled "Kailua Village Urban Design Study" which is a planning document intended to implement the General Plan, recommends the construction of this realignment, calling it the Queen Kaahumanu Highway extension.

Public hearings were held in Kailua on July 9, 1970 and again on July 8, 1976.

Testimonies at both hearings overwhelmingly supported Line 1, the subject of this statement.

12. Facilities Affected:

None

13. Physical Effects on Section 4(f) Land Users:

The highway will not create any significant physical effects on the Section 4(f) land users.

Noise level predictions indicate the Federal Highway Administration's noise level standard ($L_{10} = 70$ dBA) will not be exceeded.¹

¹ U.S. Department of Transportation, Federal Highway Administration and State of Hawaii, Department of Transportation, Highways Division, Draft Environmental Impact Statement, January 1976

Projections of hourly carbon monoxide concentrations indicate that neither the Federal Standard of 40 mg/M³ nor the State Standard of 10 mg/M³ will be exceeded.

14. Effect on Remaining Land:

None. The highway removes 150 linear feet from the Kuakini Wall's total length of 295,680 linear feet.

B. Kona Field System

1. Size and Location:

The entire field system of approximately 3 miles by 18 miles begins near Hookena and extends beyond the outlying areas of Kailua. Refer also to the appended Historical Properties Report.

The entire highway improvement is within the boundaries of the field system. Approximately 60 acres of land will be required for the highway (Figure 5).

2. Type:

The Kona Field System is a historic site of local significance and is a potential nominee to the National Register of Historic Places.

3. Available Activities:

None

4. Facilities:

None

5. Usage:

The Kona Field System has long been abandoned within the project area. Its earthen/rock walls have been compromised by the construction of Hualalai Road and four major residential subdivisions. Other than the earthen/rock walls there are no visible evidence of the ancient farming activity. The undeveloped areas have long since been overgrown with local scrub brush.

6. Relationship to Other Similarly Used Land:

A similar agricultural field system, the Lapakahi Complex, exists on the Kohala Coast approximately 50 miles north of the Kona Field System.

The Complex is approximately one mile wide extending from the sea to the crest of the Kohala ridge, some four miles inland and is only a portion of the 2 by 13 mile Kohala Field system. It includes both a major fishing village and an upland agricultural system and offers an excellent example of the native Hawaiians' use of various ecozones.

The Lapakahi Complex was placed on the National Register of Historic Places in 1973 and is planned to be developed as a major state historical park.¹

7. Access:

Access to the Kona Field System is unlimited due to its immense size. The highway will have no effect on its accessibility.

8. Ownership Within the Project Area:

Private, except approximately 1.4 acres are owned by the State of Hawaii.

9. Applicable Clauses Affecting Title:

The 1.4 acres of State land are presently leased to the abutting land owner for pasture use.

State of Hawaii general leases contain withdrawal provisions and/or condemnation clauses which would avail the lands for other public purposes, such as for highway use.

¹ State of Hawaii, Department of Land and Natural Resources, The Hawaii Register of Historic Places, 1974

10. Unusual Characteristics:

The Kona Field System is considered by Hawaiian archaeologists to be one of the most extensive and monumental work of ancient Hawaii. The system is unique in Hawaii and probably the nation in terms of the amount of land that was modified by prehistoric inhabitants. In its complexity and size, it is comparable to the Kohala Field System which contains the Lapakahi Complex and the field systems of Central and South America. It is a physical demonstration of the highly developed farming economy of ancient Hawaii, and it illustrates the complexity and advanced state of aboriginal Hawaiian culture.

The system, because of its size can only be seen in its entirety from the air or by means of aerial photographs.

11. Consistency with Community Goals:

This project is consistent with the overall planning goals established by the County Planning Department and is reflected in the transportation requirements needed to support the development proposals of their General Plan. In addition, the County Planning

Department's July, 1976 report entitled "Kailua Village Urban Design Study" which is a planning document intended to implement the General Plan, recommends the construction of this realignment, calling it the Queen Kaahumanu Highway extension.

Public hearings were held in Kailua on July 9, 1970 and again on July 8, 1976. Testimonies at both hearings overwhelmingly supported Line 1, the subject of this statement.

12. Facilities Affected:

None

13. Physical Effects on Section 4(f) Land Users:

The highway will not create any significant physical effects on the Section 4(f) land users.

Noise level predictions indicate the Federal Highway Administration's noise level standard ($L_{10} = 70$ dBA) will not be exceeded.¹

Projections of hourly carbon monoxide concentrations indicate that neither the Federal Standard of $40 \text{ mg}/\text{M}^3$ nor the State Standard of $10 \text{ mg}/\text{M}^3$ will be exceeded.

¹ U.S. Department Transportation, Federal Highway Administration and State of Hawaii, Department of Transportation, Highways Division, Draft Environmental Impact Statement, January 1976

14. Effect on Remaining Land:

None. The highway removes 60 acres from the Kona Field System's total area of 34,560 acres.

V. DETERMINATION THAT THERE IS NO POSSIBLE OR PRUDENT
ALTERNATIVE

The need exists to reduce the traffic congestion confronting the Kailua area. Traffic volumes on Kuakini Highway will nearly double within the next 20 years.

The alternatives considered to accommodate the traffic volumes consisted of a realigned highway, an improvement to the existing highway, a combination of both concepts or a "do nothing" proposal.

A bus system was also considered early in the study but ridership indicated that this would be unfeasible. A 1975 survey showed that the County supported bus system operating between Captain Cook (12 miles south of Kailua) and the Kailua area carried a total of less than 40 riders during the morning hours.¹ In 1977, the bus system consisted of three county operated buses. Two buses operate continuously between Hookena (20 miles south of Kailua) and Kailua while the other provides cross-island service by way of Hookena-Kailua-Hilo. Each morning, the buses leave Hookena at 6:00 a.m. and arrive in Kailua at 7:00 a.m. carrying an average load of ten to thirty passengers per bus.

1 County of Hawaii, Kona Community Development Plan, July 1975

The realigned highway proposal was determined to be the best solution since:

1. It resulted in the least environmental impact in terms of affected residences, businesses, total costs and noise and air quality impacts to the community (Figure 6).
2. It reflected the transportation element of the County of Hawaii's General Plan and the "Kailua Village Urban Design Study"¹ (Figures 7A and B).
3. It received the overwhelming support of the community at two public hearings.

The "do nothing" proposal was not adopted since it would ignore the traffic problems facing Kailua. The highway would be congested and its accident potential increased. Moreover, the transportation element of the General Plan would not be implemented and orderly development as visualized in the Plan would be inhibited.

As studies of the highway realignment progressed, it became evident that the Great Wall of Kuakini and the Kona Field System would be affected.

1 County of Hawaii, Kailua Village Design Plan, July 1976

The Great Wall of Kuakini is 6 miles in length and aligned diagonally through the project area in a north-south direction. The termini of the highway defines a northwesterly-southeasterly line that makes a crossing of the wall inevitable. Routing the highway around the ends of the wall would create a circuitous alignment with minimal benefits and services to the community (Figure 8).

Alternate A around the wall would be 4,600 feet away from Kailua Village and Alternate B would double the project length and parallel the Kahaluu Historic District, a National Register site. Constructing an overpass or tunneling under the wall, besides being costly, would create a visual appearance that would contrast with the countryside.

The Kona Field System occupies an area of 54 square miles. It borders Kailua Village; extends 3 miles inland and includes the ribbon of urbanized areas along the existing highways for a distance of 18 miles.

There are no feasible and prudent alternatives to use of lands in the Kona Field System. Alternatives

west would pass through Kailua Village, a highly developed resort/business area, and may impact the Springer House and St. Michael's Church which are potential nominees to the National Register of Historic Places. A highway along the north and easterly boundary may be feasible from the standpoint of highway construction, but like the alignment circumventing the Kuakini Wall, the circuitous alignment would not benefit the community. All alternatives utilize portions of the Field System. The southern terminus of the project is located in the middle of the Field System.

VI. MEASURES TO MINIMIZE HARM TO SECTION 4(f) LANDS

A Memorandum of Agreement as required by the Advisory Council on Historic Preservation Procedures for the Protection of Historic and Cultural Properties (36 C.F.R. Part 800) was prepared and jointly executed by the Advisory Council, the Federal Highway Administration and the State Historic Preservation Officer.

The Memorandum of Agreement which mitigates any adverse effects of the proposed highway improvement on archaeological/historical resources within the highway corridor is contained in the record of coordination for the Advisory Council (Chapter VII).

VII. COORDINATION WITH AGENCIES HAVING JURISDICTION OVER
SECTION 4(f) LANDS

This chapter contains the record of coordination with the responsible agencies on Section 4(f) matters. Correspondences of these coordinations follow the chronology of events.

A. State Historic Preservation Officer (SHPO)

Feb. 14, 1975	Meeting with SHPO to determine historic resources in project area.
Apr. 11, 1975	SHPO accepted Historic Properties report.
July 11, 1975	Presented basis for a determination of "no effect" to the SHPO.
Aug. 27, 1975	Joint on-site inspection by SHPO, FHWA and Advisory Council.
Oct. 20, 1975	SHPO determined project impact to be "adverse."
Nov. 18, 1975	FHWA agreed with determination of "adverse effect."
Nov. 20, 1975	SHPO reviewed EIS Preparation Notice. Consultations on historic matters

- B. Advisory Council on Historic Preservation (AC)
- Aug. 27, 1975 Joint on-site inspection by SHPO, FHWA and AC.
- Oct. 16, 1975 AC reviewed EIS Preparation Notice and furnished guidance for complying with historic preservation regulations.
- Apr. 5, 1976 AC reviewed DEIS. DEIS adequate concerning compliance with Section 106 of the National Historic Preservation Act of 1966. AC suggests information to be contained in the preliminary case report.
- Nov. 10, 1976 FHWA sends case report to AC.
- Feb. 9, 1978 AC approves jointly executed Memorandum of Agreement.

C. U.S. Department of the Interior (DOI)

Nov. 14, 1975	DOI reviewed EIS Preparation Notice and furnished advice for complying with historic preservation regulations.
May 3, 1976	DOI reviewed DEIS and recommended preparation of Section 4(f) Statement.
Feb. 6, 1978	DOI reviewed preliminary Section 4(f) Statement and has no objections to Section 4(f) approval of this project.

- D. U.S. Department of Housing and Urban Development (HUD)
Apr. 30, 1976 HUD reviewed DEIS.
Jan. 9, 1978 HUD reviewed preliminary Section
4(f) Statement.

E. U.S. Department of Agriculture (DA)

Mar. 15, 1976 DA reviewed DEIS

Nov. 22, 1977 DA reviewed preliminary Section
4(f) Statement.

STATE HISTORIC PRESERVATION OFFICER

1582

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII

DIRECTOR'S OFFICE



APR 17 12 50 PM '75

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

CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU
DEPUTY TO THE CHAIRMAN

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

April 11, 1975

The Honorable E. Alvey Wright
Director,
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

REF: HWY-PA
2.21226

Dear Admiral Wright:

SUBJECT: Kuakini Highway Realignment
Island of Hawaii, Draft Historic Properties
Report, Project No. RF-011-1(14)

Thank you for the opportunity to review this report. It is an excellent presentation of material designed to comply with the Historic Preservation Act of 1966 and with Executive Order 11593. The report precisely documents what specific effect will be felt by each site likely to be eligible to the National Register of Historic Places. This type of report is an essential aid in making determinations of effect on historic properties, both for my staff and for the concerned Federal Agencies.

Very truly yours,

CHRISTOPHER COBB
Historic Preservation Officer
State of Hawaii

DEPT. OF TRANSPORTATION
HON. ARIYOSHI'S OFFICE

APR 18 2 17 PM 1975

RECEIVED



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

July 11, 1975

IN REPLY REFER TO
915EC

Ms. Jane Silverman
State Historic Preservation Officer
Department of Land & Natural Resources
465 S. King Street
Honolulu, Hawaii 96813

Dear Ms. Silverman:

Subject: Hawaii Project F-011-1(14) Kuakini Highway
Realignment

In accordance with 36 CFR Part 800, we have determined that the proposed highway improvement designated as the Kuakini Highway Realignment in Kona, Hawaii, will have no effects on properties eligible for inclusion in the National Register.

The basis for our "No Effect" determination is summarized below according to alternate alignments being considered by the State Department of Transportation.

Line 1

The Kona Field System, the Kealakowaa Heiau and the Great Wall of Kuakini are located within the study area of Line 1. However, Line 1 has no effect on these historic properties.

The Kona Field System has previously been compromised in this area by construction of the Hualalai Road, and four major residential subdivisions. Moreover, there is physical evidence of disruption by heavy earthmoving equipment along portions of Line 1 (refer to Attachment 1). Other than the earthen/rock walls, there is no visible evidence of the farming activity that qualified the Kona Field System for inclusion into the National Register of Historic Places. The original cultivated orchards have long since been overgrown with koa-haole (*Leucaena glauca*) and guinea grass (*Panicum maximum* Jacq.) which are local scrub brush.

-more-

Ms. Jane Silverman
July 11, 1975
Page 2

The Kealakowaa Heiau is located approximately 50 feet makai of the existing Kuakini Highway right-of-way line. However, any highway improvement or widening of the Kuakini Highway will be on the opposite side, in an inland direction. The proposed boundary of the highway improvement will be no closer than the existing separation between the existing Kuakini Highway and the Kealakowaa Heiau.

Line 1 is expected to breach and destroy approximately 150 feet of the Great Wall of Kuakini. However, like the Kona Field System, this Wall has been breached many times in the past by new developments and road construction. At the point of crossing, the Wall stands approximately 5-feet high on the east side, 7-feet high on the west side and is 3-6 feet wide at the top. Portions of the Wall are crumbling and we find little evidence that the Wall is being maintained. We note that the Wall is presently used as pasture land boundaries. Photographs (Attachment 2) taken in May 1974 show the existing condition of the Wall at its proposed intersection with Line 1.

Line 6

Line 6 will have no effect on any of the historic resources in the project area.

Where Line 6 crosses the undeveloped lands near the Queen Kaahumanu Highway, it is outside of the Kona Field System boundaries. From its point of congruency with Kuakini Highway, Line 6 is merely a widening of the existing road which is bordered by urban developments.

The urban developments serve as a buffer between Line 6 and the Thurston House Ruins, the Honouzula Platform, the Springer House, and St. Michael's Church. Of these, the closest site to Line 6 is St. Michael's Church. Line 6 is at least 170 feet from any object on the Church property.

-more-

Ms. Jane Silverman
July 11, 1975
Page 3

The Great Wall of Kuakini has already been destroyed at its juncture with the existing highway. Further widening of the highway at this section is inconsequential.

Line 6 will terminate at the Kealakowaa Heiau in the same manner as Line 1. Thus, the highway pavement or right-of-way line will be no closer than its existing relationship.

Physical separation of historic properties from the proposed highway improvement will not change the quality of known historic resources affected by Line 6.

Line 7

The State Department of Transportation has eliminated Line 7 from further study due to its high rights-of-way costs and the impact to historic resources. Thus no determination of effect is made for Line 7.

Line 8

Line 8 will have no effect on any of the historic resources in the project area.

Line 8 between Hualalai Road and the Kealakowaa Heiau is identical to Line 6. From Palani Road to Hualalai Road, Line 8 is proposed to improve the existing roadway and is located away from any of the historic resources.

Thus Line 8, like Line 6, will not change the historical quality of any of the historic resources.

The State Department of Transportation will conduct a detailed archaeological survey along the selected corridor prior to construction to locate, identify, evaluate and preserve those historical and cultural resources deemed significant by a competent archaeologist.

Ms. Jane Silverman
July 11, 1975
Page 4


We ask your concurrence on our above determinations.

A copy of the Historical Properties Report, Kuakini Highway
Realignment, is attached for your further information.

Thank you for your assistance.

Sincerely yours,

Ralph T. Segawa, Division Engineer

By: 
H. Kasumoto
Assistant Division Engineer

Enclosure

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



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

October 20, 1975

Mr. Ralph T. Segawa
Division Engineer
Federal Highways Administration
677 Ala Moana Boulevard
Suite 613
Honolulu, Hawaii 96813

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO.

Dear Mr. Segawa:

Subject: Hawaii Project F-011-1(14) Kuakini
Highway Realignment

Thank you for the additional information on where grubbing has occurred along Line 1. Such data makes our review task much easier.

I do not agree that Line 1 will have no effect on Kuakini Wall and on Kona Field system. While past alterations have altered pristine condition of both areas, and such damage is irreparable, subsequent damage is not thereby justified.

Discussions and on site inspections by representatives of your agency, of State Department of Transportation, of the National Advisory Council on Historic Preservation and myself further elaborated this point and concluded that a Memorandum of Agreement was necessary. Subsequently a qualified archaeologist examined the precise segment of Kuakini Wall involved in Line 1.

I recommend to you the following points for a Memorandum of Agreement which if executed properly will satisfactorily mitigate the adverse effects of this project.

If Line 1 is selected--

1. Archaeological survey mapping and evaluation of the ungrubbed area from Sta. 00+00 to Sta. 26+00.
2. Detailed archaeological mapping of all archaeological features especially agricultural features from Sta. 29+00 to Sta. 42+00 and Sta. 59+00 to Sta. 91+00 and Sta. 96+00 to Sta. 142+00.
3. Archaeological spot checking of grubbed areas and urbanized areas from Sta. 142+00 to End Project.

Ralph T. Segawa

-2-

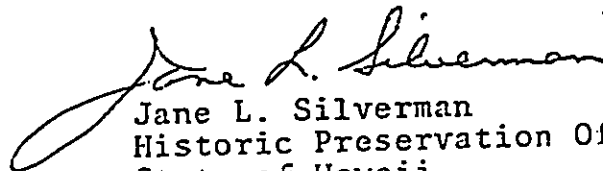
October 20, 1975

It will be both permissible and encouraged to use any available photographic or other time and manpower saving techniques to supplement or aid such archaeological work but all such techniques must be verified by on foot archaeological inspection as having 90% or greater reliability.

4. Individual archaeological features identified in the above points which have substantial individual potential to yield information important in the prehistory or history of Hawaii which may be altered or destroyed by this project or any action ancillary to the project construction (such as spoil or barrow areas; access, storage or turn around areas for machinery) shall be tested by rigorous archaeological methods and if such tests confirm their importance they shall be recommended for total scientific data retrieval to the Historic Preservation Officer.
5. If the Historic Preservation Officer accepts the recommendation for total scientific data retrieval, Department of Transportation will set aside time and funds for such work and will undertake to do or have such work done.
6. Kuakini Wall will be breached only between the points flagged for and examined by the archaeologist representing the Historic Preservation Officer at the on site inspection held Oct. 1, 1975. The necessary breach will be made as minimal and as neatly as possible and all reasonable effort will be made to avoid damage or weakening portions of the wall beyond the breach.
7. Kealakowaa Heiau will be guarded and protected against any inadvertent or accidental damage by the project construction.

If Line No. 6 or 8 is selected, all undeveloped lands in the right of way, barrow or spoil areas, access, storage or turn around areas for machines will require an archaeological survey to identify existing values which may be eligible to the National Register.

Sincerely yours,


Jane L. Silverman
Historic Preservation Officer
State of Hawaii



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE
677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

November 18, 1975

IN REPLY REFER TO
915EC

Ms. Jane L. Silverman
Historic Preservation Officer
State of Hawaii

Dear Ms. Silverman:

Subject: Hawaii Project F-011-1(14) Kuakini Highway Realignment

Thank you for your letter of October 20, 1975 which recommended a finding of adverse effect on the Kona Field System with regard to alternate Line 1 for the proposed Kuakini Highway Realignment project.

Based on our site inspection and discussions with you regarding the potential adverse effects of alternate Line 1 on the Kona Field System, we concur that a finding of adverse effect is appropriate and that a Memorandum of Agreement between the State Historic Preservation Officer and the Federal Highway Administration is necessary.

A case report and the Memorandum of Agreement will be drafted in accordance with 36 CFR part 800. The documents will be made a part of the Final Environmental Impact Statement for the subject project.

Should Line 6 or 8 be selected, we will conduct an archaeological survey as noted in your October 20, 1975 letter.

We look forward to your continuing assistance during future project development.

Sincerely yours,

Ralph T. Segawa, Division Administrator

By: 
H. Kusumoto
Assistant Division Administrator

2936

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



DIRECTOR'S OFFICE

CHRISTOPHER COBB, CHAIRMAN
BOARD OF LAND & NATURAL RESOURCES

EDUAR A. HAMASU
DEPUTY TO THE CHAIRMAN

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

DEPT. OF TRANSPORTATION

DIVISIONS:
FINANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

November 20, 1975

Honorable E. Alvey Wright
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

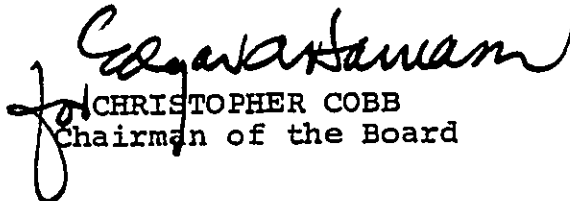
Dear Admiral Wright:

We have reviewed the EIS preparation notice for the Kuakini Highway Realignment.

Historic and archaeological sites will be affected by this project. Accordingly, it is being handled under procedures established by federal historic preservation laws. Consultations are now in progress between your department and the State Historic Preservation Officer.

We have also examined the various corridors with a view toward installing a waterline in the corridor selected. We find corridors 6 or 8 require lines capable of greater pressures and will result in critical hydraulic problems. From this stand, corridor 1 would be preferable.

Very truly yours,


CHRISTOPHER COBB
Chairman of the Board

cc: Ms. Jane Silverman
Mr. Robert Chuck

ADVISORY COUNCIL ON HISTORIC
PRESERVATION

2720

Advisory Council
On Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

DIRECTOR'S OFFICE

OCT 22 1 51 PM '75

DEPT. OF
TRANSPORTATION

October 16, 1975

Mr. E. Alvey Wright
Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:

This is in response to your request of October 6, 1975 for comments to assist in the preparation of an Environmental Impact Statement for the Kuakini Highway Realignment, Project No. RF-011-1(14), Hawaii County, Hawaii. Pursuant to Section 106 of the National Historic Preservation Act of 1966 and Sections 1(3) and 2(b) of Executive Order 11593, "Protection and Enhancement of the Cultural Environment" of May 13, 1971, the Advisory Council is charged with the responsibility of providing Federal agencies with comments on their undertakings which affect cultural resources. Until the Council has been notified by a Federal agency that it has determined an undertaking will affect a property included in or eligible for inclusion in the National Register of Historic Places, the Council is unable to comment.

The Council on Environmental Quality's guidelines for compliance with the National Environmental Policy Act of 1969 directs Federal agencies to forward copies of environmental statements prepared for undertakings which will have an impact on historical resources to the Advisory Council for review and comment. Because the Federal Highway Administration is involved in the proposed development of the Kuakini Highway Realignment a copy of the environmental statement will be sent to the Advisory Council for review and comment because of the project's relationship to the Great Wall of Kuakini and other cultural resources in the area included in or eligible for inclusion in the National Register.

Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council will be unable to provide substantive comments on the environmental statement unless it contains evidence of the following:

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

- I. Compliance with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470[f]). The Council must have evidence that the most recent listing of the National Register of Historic Places has been consulted (see Federal Register, February 4, 1975 and monthly supplements each first Tuesday thereafter) and that either of the following conditions is satisfied:
 - A. If no National Register property is affected by the project, a section detailing this determination must appear in the environmental statement.
 - B. If a National Register property is affected by the project, the environmental statement must contain an account of steps taken in compliance with Section 106 and a comprehensive discussion of the contemplated effects on the National Register property. (36 C.F.R. Part 800 details compliance procedures.)

- II. Compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" of May 13, 1971.
 - A. Under Section 2(a) of the Executive Order, Federal agencies are required to locate, inventory, and nominate eligible historic, architectural and archeological properties under their control or jurisdiction to the National Register of Historic Places. The results of this survey should be included in the environmental statement as evidence of compliance with Section 2(a).
 - B. Until the inventory required by Section 2(a) is complete, Federal agencies are required by Section 2(b) of the Order to submit proposals for the transfer, sale, demolition, or substantial alteration of federally owned properties eligible for inclusion in the National Register to the Council for review and comment. Federal agencies must continue to comply with Section 2(b) review requirements even after the initial inventory is complete, when they obtain jurisdiction or control over additional properties which are eligible for inclusion in the National Register or when properties under their jurisdiction or control are found to be eligible for inclusion in the National Register

subsequent to the initial inventory.

The environmental statement should contain a determination as to whether or not the proposed undertaking will result in the transfer, sale, demolition or substantial alteration of eligible National Register properties under Federal jurisdiction. If such is the case, the nature of the effect should be clearly indicated as well as an account of the steps taken in compliance with Section 2(b). (36 C.F.R. Part 800 details compliance procedures.)

- C. Under Section 1(3), Federal agencies are required to establish procedures regarding the preservation and enhancement of non-federally owned historic architectural, and archeological properties in the execution of their plans and programs.

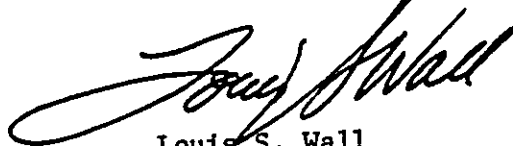
The environmental statement should contain a determination as to whether or not the proposed undertaking will contribute to the preservation and enhancement of non-federally owned districts, sites, buildings, structures and objects of historical, architectural or archeological significance.

III. Contact with the State Historic Preservation Officer.

The procedures for compliance with Section 106 of the National Historic Preservation Act of 1966 and the Executive Order 11593 require the Federal agency to consult with the appropriate State Historic Preservation Officer. The State Historic Preservation Officer for Hawaii is Jane L. Silverman, Chairman, Department of Land and Natural Resources, P. O. Box 621, Honolulu, Hawaii 96809.

Should you have any questions or require any additional assistance, please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946.

Sincerely yours,



Louis S. Wall
Assistant Director, Office
of Review and Compliance

GEORGE R. ARIYOSHI
GOVERNOR



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

November 28, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.25924

Mr. Louis S. Wall
Assistant Director
Office of Review and Compliance
Advisory Council on Historic
Preservation
1522 K Street N.W.
Washington, D. C. 20005

Dear Mr. Wall:

Subject: Kuakini Highway Realignment,
Island of Hawaii
Project No. RF-011-1(14)

Thank you for your letter dated October 16, 1975,
regarding the Environmental Impact Statement Preparation
Notice for the subject project.

Please be assured that this project will comply with
the procedures set forth in 36 C.F.R. Part 800 and that the
concerns of the Advisory Council will be properly addressed.
The State Historic Preservation Officer (SHPO) has been
consulted, and has recently made a "determination of adverse
effect" relative to historic resources in the project vicinity.
Documentation of the coordinations between the SHPO and the
Federal Highway Administration will be contained in the draft
EIS.

We sincerely appreciate your comments and recommendations
and will look to your office for guidance on historical matters.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT
Director

Advisory Council
On Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

April 5, 1976

Mr. Ralph T. Segawa
Division Administrator
Region Nine
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

This is in response to your request of March 8, 1976 for comments on the draft environmental statement (DES) for the Kuakini Highway Realignment, Project No. RF-011-1(14), Hawaii County, Hawaii. Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council has determined that your DES appears adequate concerning compliance with Section 106 of the National Historic Preservation Act of 1966.

However, with respect to compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" issued May 13, 1971, it is noted that the proposed undertaking will adversely effect the Kona Field System and the Great Wall of Kuakini, properties which appear to be eligible for inclusion in the National Register of Historic Places and therefore entitled to the protection of the Executive Order 11593. It is also noted that the Federal Highway Administration (FHWA) is aware of the requirements of the Executive Order 11593 and is currently preparing a preliminary case report pursuant to Section 800.4(f) of the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800).

Accordingly, in order to expedite the consultation process, the preliminary case report should contain the following information:

1. a general description of the proposed undertaking with explanatory graphic material;
2. a description of the properties included in or eligible for inclusion in the National Register to be affected by the undertaking, identifying the significant features of the properties;

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

Page 2
April 5, 1976
Mr. Ralph T. Segawa
Kuakini Highway Realignment

3. an evaluation of the effect of the undertaking upon the properties included in or eligible for inclusion in the National Register;
4. an outline of measures taken in considering the undertaking's effect upon the properties included in or eligible for inclusion in the National Register, including:
 - a. an expression of the views of the State Historic Preservation Officer
 - b. an indication of the support or opposition of units of government, as well as public and private agencies and organizations
 - c. a review of alternatives which would avoid any adverse effects
 - d. a review of alternatives which would mitigate any adverse effects
5. The status of this project in your agency's approval process.

The case report should be completed and forwarded to the Council at your earliest convenience.

Pending receipt of the Council's comments, the Council requests that FHWA refrain from taking any action with regard to the undertaking that will foreclose proper Advisory Council consideration of existing alternatives to avoid or satisfactorily mitigate any adverse effects on the properties in question.

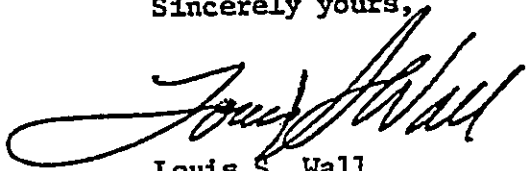
Until the requirements of the Executive Order 11593 and the procedures are met, the Council considers the DES to be incomplete in its treatment of the cultural resources. To remedy this deficiency, the Council will provide substantive comments on the undertaking's effects on the cultural resources through the process detailed in the procedures. Please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946, to assist you in completing

Page 2
April 5, 1976
Mr. Ralph T. Segawa
Kuakini Highway Realignment

this process as expeditiously as possible.

Your continued assistance and cooperation are appreciated.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Louis S. Wall".

Louis S. Wall
Assistant Director, Office
of Review and Compliance

P-2
P-12

RECEIVED

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DEPT. OF TRANSPORTATION

Two Embarcadero Center, Suite 530
San Francisco, California 94111

November 10, 1976

Mr. Robert R. Garvey, Jr.
Executive Director
Advisory Council on Historic Preservation
1522 K Street, NW, Suite 430
Washington, D. C. 20005

DIRECTOR'S OFFICE
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OFFICE OF
TRANSPORTATION
9ED

Dear Mr. Garvey:

Your Denver office is being sent a Case Report for Hawaii Project RF-011-1(4), Kuakini Highway Realignment, on the Island of Hawaii, which contains information for preparing a Memorandum of Agreement. The Report identifies the effect of the proposed undertaking upon the cultural resources and contains detailed actions to avoid or mitigate the adverse effects of the various alternatives.

These proposals were jointly developed by the Hawaii Division Office, the State Highways Division, and the State Historic Preservation Officer.

Also, the Federal Highway Administration has determined that the use of the National Register Quality Properties will require a Section 1653(f) Report. The Section 1653(f) and the 106 process information will be included in the Final Environmental Impact Statement.

Any assistance your staff can provide for an early completion of the 106 process will be appreciated.

Sincerely yours,

R. G. S. YOUNG

F. E. Hawley
Regional Administrator

Enclosures

cc: Hawaii SHPO w/attchs.

RECEIVED
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ST. DEPT. OF TRANS.
HWAYS DIV
PLANNING BR.

Hawaii Project RF-011-1(14)
Kuakini Highway, North Kona, Hawaii

A Report Prepared Pursuant to Section 106 of the
National Historic Preservation Act of 1966

By

Glenn M. Yasui
Federal Highway Administration

OCT 28 1976

Date


RALPH T. SEGAWA
Division Administrator

INTRODUCTION

This report is prepared in compliance with provisions of Section 106 of the National Historic Preservation Act of 1966.

FHWA and the SHPO have determined that the proposed Kuakini Highway Realignment will adversely affect the Kona Field System and the Great Wall of Kuakini, properties which may be eligible for inclusion in the National Register of Historic Places.

In addition, the Kealakowaa Heiau (Valuable) and the Honuauia Platform (Reserve) were placed on the Hawaii Register of Historic Places on March 19, 1973 and January 7, 1974, respectively.

Three other properties have been identified in the project area; however, selection of either Lines 1, 6, or 8 should not affect any of these. These properties are: Thurston House Ruins, St. Michael's Catholic Church and Springer House.

Since the project is partially funded by Federal-aid Rural Primary Highway funds, Section 106 requirements must be fulfilled prior to design approval of the proposed highway improvement.

IDENTIFICATION OF RESOURCES

The Historic Properties Report, Attachment A, which was prepared by the State's design consultant, identifies properties eligible for inclusion in the National Register of Historic Places, located within the area of the projects potential impact.

Appendix G of the project Draft Environmental Impact Statement (DEIS) Attachment B, includes documentation pertinent to preservation of historic resources in the project area. Section II.C.11. (pp. 22-24) of the DEIS provides additional information which may be of interest during preparation of the Memorandum of Agreement.

An on-site inspection was conducted on August 27, 1976 which included the following participants:

- Mr. Michael Bureman representing the Advisory Council on Historic Preservation
- Ms. Jane Silvermann, State Historic Preservation Officer
- Ms. Beth Walton and Mr. Gary Cummins, Assisting the SHPO
- Mr. George Kodani, District Design Engineer, SHD
- Mr. H. Kusumoto, Assistant Division Administrator/ Engineering Coordinator, FHWA
- Mr. Glenn M. Yasui, Area Engineer, FHWA
- Mr. M. Tanner, Region 9 Office of Environment and Design, FHWA
- Mr. L. Pang, Jr. Engineer, FHWA

As a result of the on-site inspection, representatives of the FHWA Division Office, State Historic Preservation Office and the Advisory Council determined that a public information meeting was not necessary. See Attachment C.

MEMORANDUM OF AGREEMENT

Based on the State Historic Preservation Officer's letter of October 20, 1975, to the Federal Highway Administration and subsequent meetings between FHWA representatives and the SHPO, the following provisions are recommended for inclusion in the Memorandum of Agreement to set forth mutually acceptable measures to mitigate adverse effects of the proposed highway improvement on identified archaeological/historical resources.

A. If Line 1 is selected,

1. Conduct:

a) Archaeological survey mapping and evaluation of the ungrubbed area from Sta. 00+00 to Sta. 26+00.

b) Detailed archaeological mapping of all archaeological features especially agricultural features from Sta. 29+00 to Sta. 42+00 and Sta. 59+00 to Sta. 91+00 and Sta. 96+00 to Sta. 142+00.

c) Archaeological spot checking of grubbed areas and urbanized areas from Sta. 142+00 to End Project.

It is permissible to use any available photographic or other time and manpower saving techniques to supplement or aid such archaeological work, but all such techniques must be verified by on-foot archaeological inspection.

2. Kuakini Wall will be breached only between the flagged points examined by the archaeologist representing the State Historic Preservation Officer at the on-site inspection held on October 1, 1975. The necessary breach will be made as minimal and as neatly as possible, and stabilized to prevent further deterioration. All responsible effort will be made to avoid damage or weakening portions of the wall beyond the breach:

3. Kealakowaa Heiau, Thurston House Ruins, St. Michael's Catholic Church and Springer House will be guarded and protected against any inadvertent or accidental damage by the project construction.

B. If Line Nos. 6 or 8 is selected, all undeveloped lands and historic sites in the right-of-way, borrow or spoil areas, access, storage or turn around areas for construction equipment will require an archaeological survey and/or historical/archaeological survey to identify existing values which may be eligible to the National Register of Historic Places.

C. Whichever line is selected,

1. Individual archaeological features identified in A.1. or B above which have substantial individual potential to yield information important in the prehistory or history of Hawaii which may be altered or destroyed by this project or any action ancillary to the project construction (such as spoil or borrow areas; access, storage or turn around areas for machinery) shall be tested by rigorous archaeological methods, and if such tests confirm their importance, they shall be recommended for total scientific data retrieval to the State Historic Preservation Officer.

2. If the Historic Preservation Officer accepts the recommendation for total scientific data retrieval, the U.S. Department of Transportation and the Hawaii SHA will set aside time and funds for such work and will undertake to do or have such work done.

3. The scope of work for historical/archaeological surveys will be reviewed by the State Historical Preservation Officer prior to initiation.

CONCLUSION AND RECOMMENDATION

The foregoing information, including Attachments, appears to adequately support our determination that the identified adverse effects on archaeological/historical resources within the proposed highway zone of influence may be effectively mitigated as required by Section 106 of the National Historic Preservation Act of 1966.

We therefore recommend execution of a Memorandum of Agreement by the Executive Director of the Advisory Council for subsequent acceptance by the Regional Federal Highway Administrator and the State Historic Preservation Officer.

PROJECT STATUS

Draft Environmental Impact Statement accepted by FHWA, 1/23/76, and subsequently circulated for comments.

Formalization of Final EIS to proceed upon execution of a Memorandum of Agreement between the Advisory Council, FHWA and the SHPO, and clearance of the Section 1653(f) Report.

Upon approval of the Final EIS and project Design Report, FHWA may issue design approval.

HISTORICAL PROPERTIES REPORT

KUAKINI HIGHWAY REALIGNMENT

Project No. RF-011-2(14)

Kona, Hawaii

ATTACHMENT A

I. INTRODUCTION

In accordance with Presidential Order 11593 and the National Historic Preservation Act of 1966, the following report identifies the historic resources within the vicinity of this project. All of the historic sites herein mentioned are potential nominees to the National Register of Historic Places. The State Department of Transportation and the State Historic Preservation Officer jointly recognize the importance of these sites and proper coordination has been implemented.

II. PROJECT DESCRIPTION

This highway project is located in Kailua-Kona on the Island of Hawaii. The proposal involves the realigning and/or widening of approximately 3.1 miles of Kuakini Highway, beginning at Palani Road and terminating in the vicinity of the Kealakowaa Heiau.

Figure A indicates the various alternates under consideration. Line 1 will have two lanes within a minimum right-of-way of 150 feet. The re-routed segments of Lines 6 and 7 will also have two lanes but will be within a minimum right-of-way of 100 feet. The segments that improve the existing roadway and Line 8 will have four lanes within a minimum right-of-way of 120 feet.

III. HISTORIC PROPERTIES

The Department of Transportation and the Department of Land and Natural Resources have determined that there are seven properties in the immediate project area eligible for inclusion in the National Register. Figures A and B approximate the location at each site. Following is a brief description of these sites and their significance:

1. Thurston House Ruins (Historic Site No. 10-28-7248)

The ruins occupy a 5.2 acre parcel, approximately one-half mile easterly of Kailua Bay. Presently owned by the Hawaii Conference of the United Church of Christ, the land was originally given to Asa Thurston by the Hawaiian monarchy. Asa Thurston, a Protestant missionary, was later responsible for the construction of Mokuaikaua Church.

The house, approximately 100 feet by 25 feet, was constructed in 1825. The remains of a brick oven, a brick-lined fireplace, and a chimney are evidences of an adaptive lifestyle. Of architectural significance are the stone walls, ohia-bordered windows, a terrace, two large circular cisterns, and several sets of stairs. Historically, the ruins are one of

the few remaining residences of a pioneer missionary family, and, in this regard, the ruins are considered excellent nominees for National Historic site recognition.

Line 7 will traverse the 5.2 acre parcel approximately 200 feet east of the ruins. There will be adequate clearances so that the house structure will not be directly impacted.

2. Kona Field System (Historic Site No. 10-37-6601, See Figure B)

The Kona Field System is an ancient agricultural system composed of raised terraced plots and a latticework of earthen/rock walls. The entire field system of approximately 3 miles by 18 miles, begins near Hookena and passes through the outlying areas of Kailua-Kona. As seen from aerial photos, the individual plots of various rectangular shapes are usually oriented parallel to the coastline.

For the most part, the field system has not been archaeologically explored. In the 1790's Archibald Menzies, a surgeon and naturalist, recorded overlooking fields of neatly arranged and

extensively cultivated sweet potatoes, taro, wauke (cloth plant), sugar cane, plantains, bananas, breadfruit and ti leaf.

The Kona Field System has long been abandoned and its remains exist primarily in undeveloped regions. Subdivisions and other encroachment by man have been the primary cause for sections of the field system gradually disappearing. Line 1, as it passes through large vacant areas, will probably impact several undisturbed sections of the field system. The other alternates are located in more urbanized areas and consequently fewer sections of the field system are likely to be affected.

3. Kealakowaa Heiau (Historic Site No. 10-37-3833)

The Kealakowaa Heiau is located near the southern end of the project on a parcel of approximately 1.3 acres. The terrain slopes seaward and the site is densely overgrown with local grasses and haole koa. Five structures of stacked lava rock have a significant relationship to an ancient Hawaiian ritual.

The translated meaning of ke-ala-ko-wa'a is "the way of the canoe." As recorded in the State Archives, logs were cut nearby and brought to the Kealakowaa Heiau. Here, the logs were shaped into canoes, and received an appropriate blessing. Then the canoes were taken to a suitable launching place.

The present Kuakini Highway is adjacent to the Heiau and a reasonable buffer is available. None of the proposed alternates will be closer to the site than the existing highway. Therefore, impact will be minimal.

4. St. Michael's Catholic Church (Historic Site No. 10-37-7232)

The main Church building is approximately 55 feet by 110 feet, and is located near the intersection of Alii Drive and Hualalai Road. Built in 1850, St. Michael's Catholic Church is the oldest Catholic mission on the Island of Hawaii. Historically, the site once served as the base of activity for the island's Catholic missionary population.

The structure, noted for its classic lines and balanced proportions, is constructed of lava-rock and coral-lime mortar. A rose window, a balcony and a belfry are other features of architectural accomplishment. The surrounding churchyard, approximately 3.2 acres, contains several old buildings and walls that relate interestingly with the history of Kona.

The nearest alternate to the main church building is at least 300 feet away. The distance from the nearest alternate to any object on the property is at least 170 feet.

5. Springer House (Historic Site No. 10-37-7233)

The Springer House remains are located off Hualalai Road, in the town of Kailua-Kona. The following description was taken from the "Hawaii Register of Historic Places":

"The Springer house is a one-story wooden structure composed of three rectangular units. Built on wood posts set on rock foundations, the house is covered by two major gable roofs and subsidiary shed and hip coverings. The construction consists of single wall one by six planks. Double hung twelve-light windows are flanked by shutters and the two entrance doors on the south structure also have full

length shutters. Doors are $\frac{1}{2}$ glass set into molded wooden panels. A molded head accents the doors. A front porch, the full length of this almost square section on the south end, is enclosed by a jigsaw-cut balustrade. Set at right angles to the first structure is a 30 by 30 foot structure with a porch three-fourths the length of the house. A third structure is set at right angles to the second building and is 20 by 30 feet in dimensions. The house is in disrepair and only remnants of its once elaborate state can be gathered from the neglected ruins. Carved brackets, moldings and ornamental balustrade are evidences of the Victorian details."

The house, constructed in 1895, is noted for its architectural merit.

The highway project will not impact Springer House as the nearest alternate is more than 450 feet away.

6. Great Wall of Kuakini (Historic Site No. 10-37-7276)

The Great Wall of Kuakini extends for approximately 6 miles from Keauhou to Kailua, and is approximately 4 to 6 feet high and 4 feet wide. The mortarless lava-rock wall has had varying opinions regarding the purpose of its construction. Speculation has ranged from military/defense to the confinement of grazing animals.

Built between 1830 and 1840, the wall is valuable in dating older structures that were destroyed or obscured in the wake of its construction. The rock structure also indicates the extent of coastal habitation during the period of early settlement. Sections of the wall have already been demolished by private development and access roads have breached the wall in several locations.

One alternate, Line 1, will breach the wall. Line 7, running parallel to the wall, is likely to disturb several sections.

7. Honuaula Platform (Historic Site No. 10-28-2004)

The platform is located in the vicinity of the Thurston House ruins, approximately one-half mile easterly of Kailua Bay. The stone platform covers an area approximately 16 feet by 25 feet, and is approximately 2 feet high.

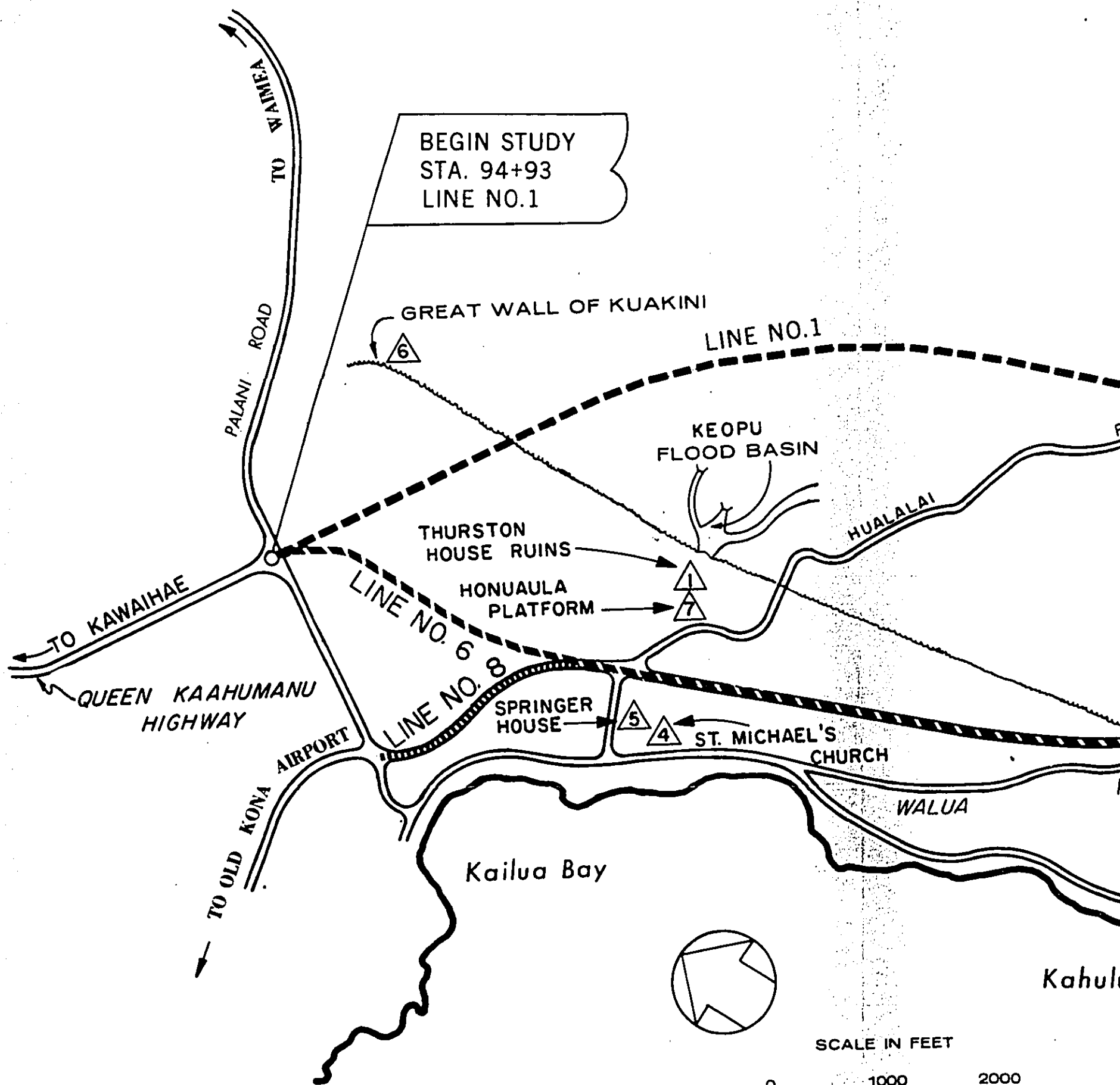
The platform is believed to have been a habitation. Historic debris, as well as a Portuguese-style oven, have been discovered at the site. The platform is potentially significant as it may be associated with the Thurston House ruins and consequently, to the historic development of Kailua-Kona.

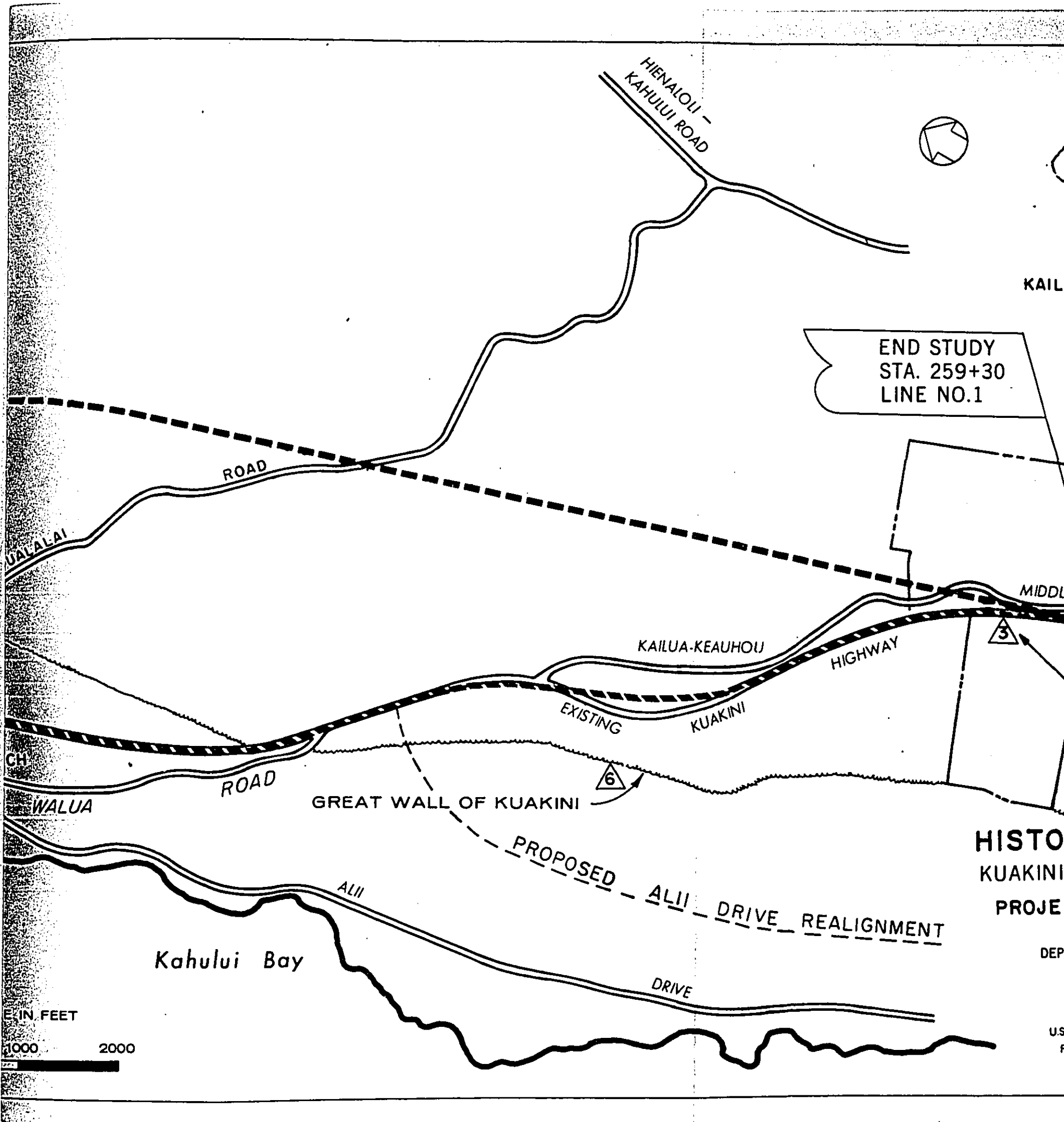
Line 7 is the closest alternate to the Honuaula Platform but no direct impact is anticipated.

RECEIVED
FEBRUARY 13 1964
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C.

IV. SUMMARY

Of the seven historic sites in the immediate project vicinity, only two will be directly impacted by the proposals of this project - the Kona Field System and the Great Wall of Kuakini. Possible mitigation measures, as well as the extent of impact, will be later surveyed and discussed in accordance with Federal guidelines.





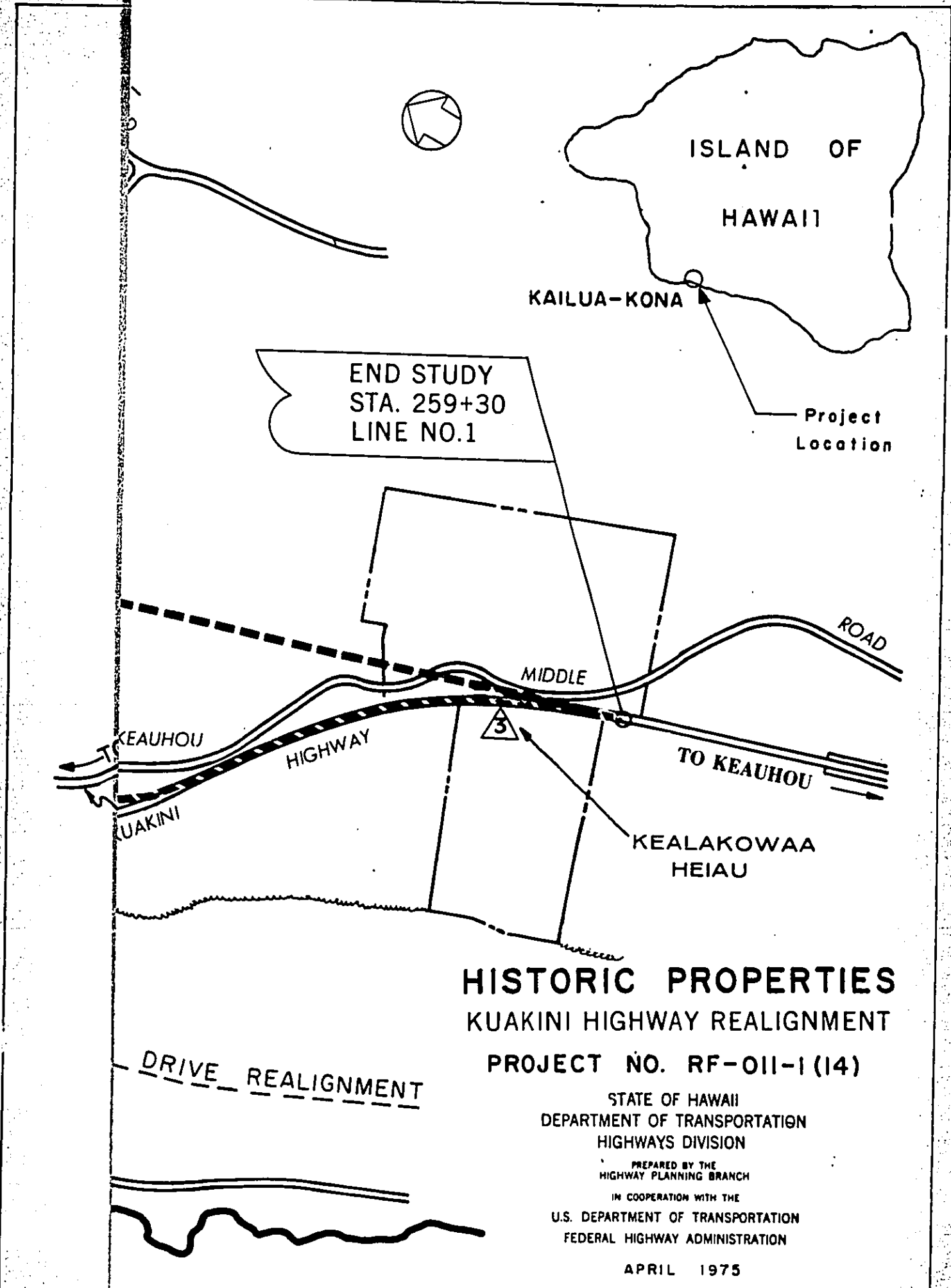
END STUDY
STA. 259+30
LINE NO.1

HISTO
KUAKINI
PROJE

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Kahului Bay

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F



**HISTORIC PROPERTIES
KUAKINI HIGHWAY REALIGNMENT**

PROJECT NO. RF-011-1(14)

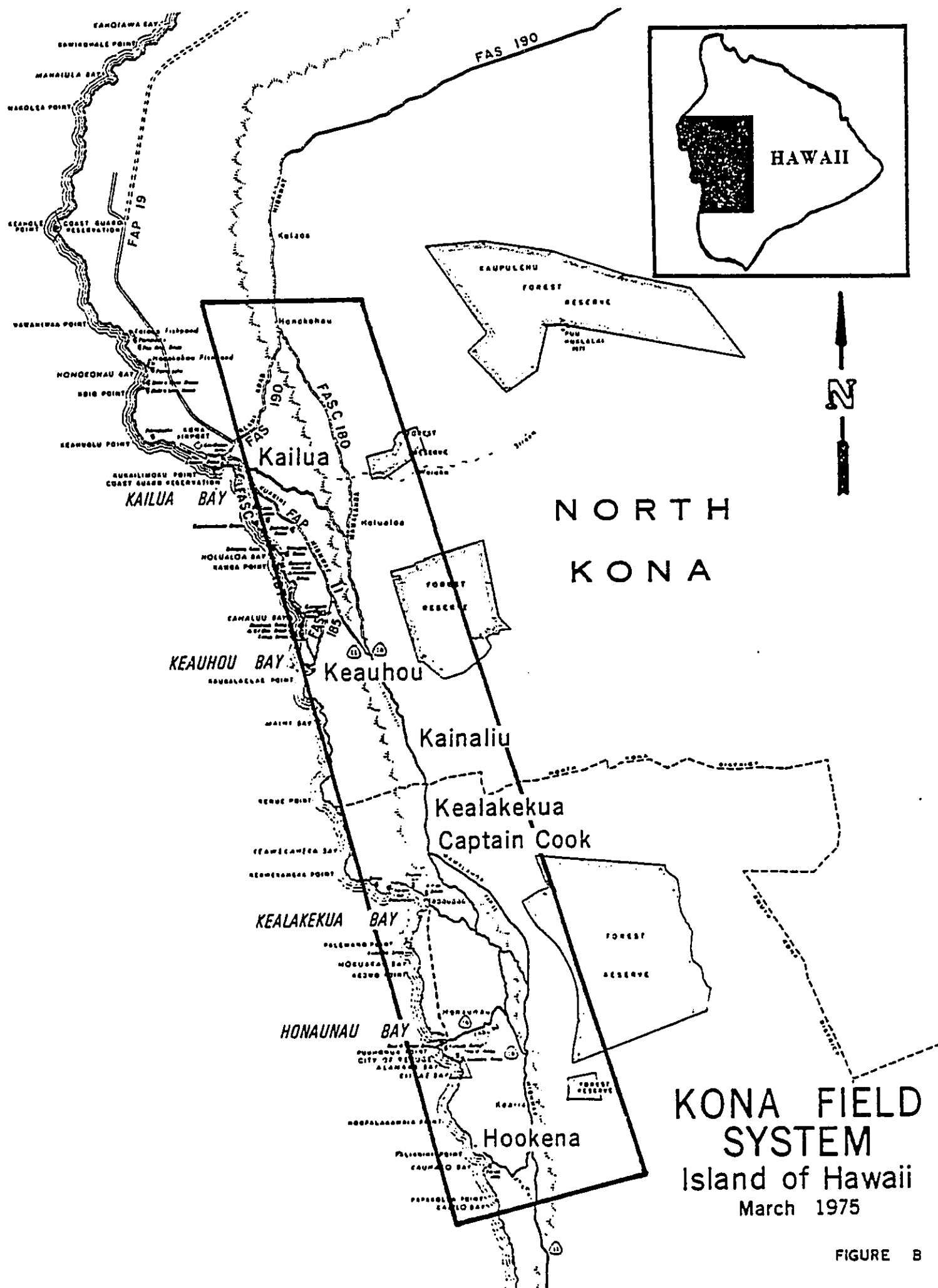
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PREPARED BY THE
HIGHWAY PLANNING BRANCH

IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APRIL 1975

FIGURE A



KONA FIELD SYSTEM
 Island of Hawaii
 March 1975

FIGURE B



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

July 11, 1975

IN REPLY REFER TO
915EC

Ms. Jane Silverman
State Historic Preservation Officer
Department of Land & Natural Resources
465 S. King Street
Honolulu, Hawaii 96813

Dear Ms. Silverman:

Subject: Hawaii Project F-011-1(14) Kuakini Highway
Realignment

In accordance with 36 CFR Part 800, we have determined that the proposed highway improvement designated as the Kuakini Highway Realignment in Kona, Hawaii, will have no effects on properties eligible for inclusion in the National Register.

The basis for our "No Effect" determination is summarized below according to alternate alignments being considered by the State Department of Transportation.

Line 1

The Kona Field System, the Kealakowaa Heiau and the Great Wall of Kuakini are located within the study area of Line 1. However, Line 1 has no effect on these historic properties.

The Kona Field System has previously been compromised in this area by construction of the Hualalai Road, and four major residential subdivisions. Moreover, there is physical evidence of disruption by heavy earthmoving equipment along portions of Line 1 (refer to Attachment 1). Other than the earthen/rock walls, there is no visible evidence of the farming activity that qualified the Kona Field System for inclusion into the National Register of Historic Places. The original cultivated orchards have long since been overgrown with koa-haole (*Leucaena glauca*) and guinea grass (*Panicum maximum* Jacq.) which are local scrub brush.

-more-

Ms. Jane Silverman
July 11, 1975
Page 2

The Kealakowaa Heiau is located approximately 50 feet makai of the existing Kuakini Highway right-of-way line. However, any highway improvement or widening of the Kuakini Highway will be on the opposite side, in an inland direction. The proposed boundary of the highway improvement will be no closer than the existing separation between the existing Kuakini Highway and the Kealakowaa Heiau.

Line 1 is expected to breach and destroy approximately 150 feet of the Great Wall of Kuakini. However, like the Kona Field System, this Wall has been breached many times in the past by new developments and road construction. At the point of crossing, the Wall stands approximately 5-feet high on the east side, 7-feet high on the west side and is 3-6 feet wide at the top. Portions of the Wall are crumbling and we find little evidence that the Wall is being maintained. We note that the Wall is presently used as pasture land boundaries. Photographs (Attachment 2) taken in May 1974 show the existing condition of the Wall at its proposed intersection with Line 1.

Line 6

Line 6 will have no effect on any of the historic resources in the project area.

Where Line 6 crosses the undeveloped lands near the Queen Kaahumanu Highway, it is outside of the Kona Field System boundaries. From its point of congruency with Kuakini Highway, Line 6 is merely a widening of the existing road which is bordered by urban developments.

The urban developments serve as a buffer between Line 6 and the Thurston House Ruins, the Honouliuli Platform, the Springer House, and St. Michael's Church. Of those, the closest site to Line 6 is St. Michael's Church. Line 6 is at least 170 feet from any object on the Church property.

Ms. Jane Silverman
July 11, 1975
Page 3

The Great Wall of Kuakini has already been destroyed at its juncture with the existing highway. Further widening of the highway at this section is inconsequential.

Line 6 will terminate at the Kealahoua Heiau in the same manner as Line 1. Thus, the highway pavement or right-of-way line will be no closer than its existing relationship.

Physical separation of historic properties from the proposed highway improvement will not change the quality of known historic resources affected by Line 6.

Line 7

The State Department of Transportation has eliminated Line 7 from further study due to its high rights-of-way costs and the impact to historic resources. Thus no determination of effect is made for Line 7.

Line 8

Line 8 will have no effect on any of the historic resources in the project area.

Line 8 between Hualalai Road and the Kealahoua Heiau is identical to Line 6. From Palani Road to Hualalai Road, Line 8 is proposed to improve the existing roadway and is located away from any of the historic resources.

Thus Line 8, like Line 6, will not change the historical quality of any of the historic resources.

The State Department of Transportation will conduct a detailed archaeological survey along the selected corridor prior to construction to locate, identify, evaluate and preserve those historical and cultural resources deemed significant by a competent archaeologist.

-MORE-

Ms. Jane Silverman
July 11, 1975
Page 4

We ask your concurrence on our above determinations.

A copy of the Historical Properties Report, Kuakini Highway
Realignment, is attached for your further information.

Thank you for your assistance.

Sincerely yours,

Ralph T. Segawa, Division Engineer

By: 

H. Kusumoto

Assistant Division Engineer

Enclosure

GEORGE R. ARIYOSHI
GOVERNOR OF HAWAII



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

October 20, 1975

Mr. Ralph T. Segawa
Division Engineer
Federal Highways Administration
677 Ala Moana Boulevard
Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Hawaii Project F-011-1(14) Kuakini
Highway Realignment

Thank you for the additional information on where grubbing has occurred along Line 1. Such data makes our review task much easier.

I do not agree that Line 1 will have no effect on Kuakini Wall and on Kona Field system. While past alterations have altered pristine condition of both areas, and such damage is irreparable, subsequent damage is not thereby justified.

Discussions and on site inspections by representatives of your agency, of State Department of Transportation, of the National Advisory Council on Historic Preservation and myself further elaborated this point and concluded that a Memorandum of Agreement was necessary. Subsequently a qualified archaeologist examined the precise segment of Kuakini Wall involved in Line 1.

I recommend to you the following points for a Memorandum of Agreement which if executed properly will satisfactorily mitigate the adverse effects of this project.

If Line 1 is selected--

1. Archaeological survey mapping and evaluation of the ungrubbed area from Sta. 00+00 to Sta. 26+00.
2. Detailed archaeological mapping of all archaeological features especially agricultural features from Sta. 29+00 to Sta. 42+00 and Sta. 59+00 to Sta. 91+00 and Sta. 96+00 to Sta. 142+00.
3. Archaeological spot checking of grubbed areas and urbanized areas from Sta. 142+00 to End Project.

DIVISIONS:
CONVEYANCES
FISH AND GAME
FORESTRY
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
FILE NO.

Ralph T. Segawa

-2-

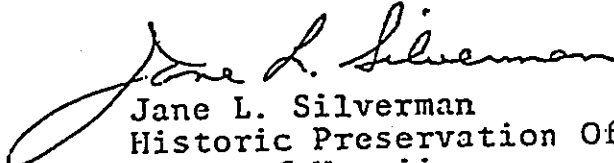
October 20, 1975

It will be both permissible and encouraged to use any available photographic or other time and manpower saving techniques to supplement or aid such archaeological work but all such techniques must be verified by on foot archaeological inspection as having 90% or greater reliability.

4. Individual archaeological features identified in the above points which have substantial individual potential to yield information important in the prehistory or history of Hawaii which may be altered or destroyed by this project or any action ancillary to the project construction (such as spoil or barrow areas; access, storage or turn around areas for machinery) shall be tested by rigorous archaeological methods and if such tests confirm their importance they shall be recommended for total scientific data retrieval to the Historic Preservation Officer.
5. If the Historic Preservation Officer accepts the recommendation for total scientific data retrieval, Department of Transportation will set aside time and funds for such work and will undertake to do or have such work done.
6. Kuakini Wall will be breached only between the points flagged for and examined by the archaeologist representing the Historic Preservation Officer at the on site inspection held Oct. 1, 1975. The necessary breach will be made as minimal and as neatly as possible and all reasonable effort will be made to avoid damage or weakening portions of the wall beyond the breach.
7. Kealakowaa Heiau will be guarded and protected against any inadvertent or accidental damage by the project construction.

If Line No. 6 or 8 is selected, all undeveloped lands in the right of way, barrow or spoil areas, access, storage or turn around areas for machines will require an archaeological survey to identify existing values which may be eligible to the National Register.

Sincerely yours,


Jane L. Silverman
Historic Preservation Officer
State of Hawaii



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

677 Ala Moana Boulevard, Suite 613
Honolulu, Hawaii 96813

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

November 18, 1975

IN REPLY REFER TO
915EC

Ms. Jane L. Silverman
Historic Preservation Officer
State of Hawaii

Dear Ms. Silverman:

Subject: Hawaii Project F-011-1(14) Kuakini Highway Realignment

Thank you for your letter of October 20, 1975 which recommended a finding of adverse effect on the Kona Field System with regard to alternate Line 1 for the proposed Kuakini Highway Realignment project.

Based on our site inspection and discussions with you regarding the potential adverse effects of alternate Line 1 on the Kona Field System, we concur that a finding of adverse effect is appropriate and that a Memorandum of Agreement between the State Historic Preservation Officer and the Federal Highway Administration is necessary.

A case report and the Memorandum of Agreement will be drafted in accordance with 36 CFR part 800. The documents will be made a part of the Final Environmental Impact Statement for the subject project.

Should Line 6 or 8 be selected, we will conduct an archaeological survey as noted in your October 20, 1975 letter.

We look forward to your continuing assistance during future project development.

Sincerely yours,

Ralph T. Segawa, Division Administrator

By: 
H. Kusumoto
Assistant Division Administrator

10-7-75
F-011-1

FIELD TRIP REPORT
(See instructions on reverse)

Sept. 11, 1975

TO Mr. H. Kusumoto
Asst. Division Administrator
Honolulu, Hawaii

FROM Glenn M. Yasui
Area Engineer
Honolulu, Hawaii

BY: Leslie M. G. Pans

INCLUSIVE DATES

From August 27, 1975 to August 29, 1975

ITINERARY

From Honolulu to Island of Hawaii and return.

PURPOSE

To field review Section 106 properties.

PRINCIPAL CONTACTS

See attached.

ACCOMPLISHMENTS OR RESULTS

See attached.

SUBSEQUENT ACTIONS TAKEN

--

RECOMMENDATIONS

See attached.

OTHER RELEVANT ITEMS

--

ATTACHMENT C

FIELD TRIP REPORT (FHWA-137)

I. Detailed ItineraryAugust 27

9:49 a.m. - Arrived in Kona

11:00 a.m. - Orientation Discussion

Location: Kona Lagoon Hotel

Participants:

DLNR - J. Silverman, G. Cummins, E. Walton
 ACHP - M. Bureman
 SHD - G. Kodani
 FHWA - M. Tanner, H. Kusumoto, G. Yasui, L. Pang

General discussion was aimed at familiarizing the participants with the areas to be investigated. Silverman and Walton gave an archaeological and historical overview of the area. They were most concerned with the Kona Field System which would be affected by the realignment alternatives proposed in projects F-011-1(8) and F-011-1(). Various surveying techniques were discussed to determine the most feasible method to map the Field System. It was suggested that a trained archaeologist accompany the survey party.

1:00 p.m. - Field Review

Projects: (1) F-011-1(8), Holualoa to Papa, Kona Field System
 (2) S-0160(5), Honaunau to Napoopoo, City of Refuge, Kealahakua Bay, Kahaluu Historical District.
 (3) F-011-1(), Kuakini Realignment, Kona Field System.

Participants: Same as above.

Investigated the Kona Field System in the Kealahakua Bay area. The condition of the Hawaiian walls were noted and its location in relation to one of the proposed roadway alignments were checked. Hilikau Heiau and the City of Refuge were also visited.

-MORE-

LD TRIP REPORT (FHWA-137)

August 28

9:00 a.m. - Discussion on the Kona Field System.

Location and Participants: Same as the meeting of the previous morning.

Discussed the proposed Kuakini Realignment (F-011-1()) and its effects on the Kona Field System. Silverman asked about the potential future development that will occur after the completion of the roadway. She felt that the number of access points along the alignment would determine the degree of adverse effect on the field system. Kusumoto pointed out that it is the decision of the local policymakers and not the highway officials which determines the extent of any development along the realignment. It was also mentioned that, with the new alignment, growth will be parallel to the coastline instead of the now-existing mauka-makai direction.

It was felt by those in the DLNR that the yet unrecovered data which exists within the massive Kona Field System would justify its eligibility to the National Register of Historic Places.

11:00 a.m. - Field Review

Projects: (1) F-011-1(), Kuakini Realignment,
Kona Field System
(2) S-0270(4), Puukohola Heiau @ Kawaihae

Participants: Same as above.

Investigated the Great Wall of Kuakini near Kailua. Also, John Young's house, a historical site near Kawaihae, was visited and studied in terms of its location relative to the proposed alignment. It was determined that the alignment would not encroach on the historical area.

1:00 p.m. - Left Kona.

4:00 p.m. - Arrived in Hilo.

-MORE-

FIELD TRIP REPORT (FHWA-137)

August 29

9:00 a.m. - Field Review

Location: (1) Wailoa River Bridge and Richardson
Memorial Clock, Hilo Bayfront Highway
(2) Chain of Craters Road, Hawaii
Volcanoes National Park

Participants: M. Tanner, M. Bureman, G. Yasui, L. Pang

Investigated bridge and clock. While in the
National Park, the reconstruction site on Route 11
was examined.

4:00 p.m. - Left Hilo

Advisory Council on
Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

Mr. Frank E. Hawley
Regional Administrator
Federal Highway Administration
Region Nine
450 Golden Gate Avenue
Box 36096
San Francisco, California 94102

Dear Mr. Hawley:

The Memorandum of Agreement for the realignment of the Kuakini Highway, Hawaii Project RF-011-1(14), affecting Kona Field System and the Great Wall of Kuakini, in Hawaii County, Hawaii, has been approved by the Chairman of the Council. This document constitutes the comments of the Council as required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) and Executive Order 11593, "Protection and Enhancement of the Cultural Environment" and completes the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800). A copy of the Agreement is enclosed.

A copy of this Memorandum of Agreement should be included in any environmental assessment or statement prepared for this undertaking in compliance with the National Environmental Policy Act and should be retained in your records as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966. The Council appreciates your cooperation in reaching a satisfactory solution to the issues raised in this matter.

Sincerely yours,

Myra F. Harrison
Myra F. Harrison
Assistant Director
Office of Review and
Compliance

Enclosure

FEB 27 1978

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Copies to
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February 9, 1978

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Advisory Council on
Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the Federal Highway Administration proposes to assist the State of Hawaii Department of Transportation, Highway Division, with the realignment of the Kuakini Highway, Hawaii Project RF-011-1(14), Hawaii County, Hawaii; and;

WHEREAS, the Federal Highway Administration, in consultation with the Hawaii State Historic Preservation Officer, has determined that this undertaking as proposed would have an adverse effect upon Kona Field System and the Great Wall of Kuakini, properties determined by the Secretary of the Interior to be eligible for inclusion in the National Register of Historic Places; and,

WHEREAS, pursuant to Section 1(3) of Executive Order 11593, and Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320), the Federal Highway Administration has requested the comments of the Advisory Council on Historic Preservation; and,

WHEREAS, pursuant to the procedures of the Advisory Council on Historic Preservation (36 C.F.R. Part 800), representatives of the Advisory Council on Historic Preservation, the Federal Highway Administration, and the Hawaii State Historic Preservation Officer have consulted and reviewed the undertaking to consider feasible and prudent alternatives to avoid or satisfactorily mitigate the adverse effect; now,

THEREFORE:

It is mutually agreed that implementation of the undertaking, in accordance with the following stipulations and the attached letter of November 10, 1976, from F. E. Hawley, Regional Administrator, Federal Highway Administration, with its enclosure entitled "Hawaii Project RF-011-1(14), Kuakini Highway, North Kona, Hawaii: A Report Prepared Pursuant to Section 106 of the National Historic Preservation Act of 1966," will satisfactorily mitigate any adverse effect on the above-mentioned properties.

STIPULATIONS

1. Should an archeological recovery program requiring excavation become necessary it will be based on a detailed and systematic research design, meeting standard levels of professional

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of

acceptability including provisions for curation of the artifacts and other materials recovered and the publication of a report of the findings of the research project, which must be reviewed and approved by the Hawaii State Historic Preservation Officer prior to excavation; and,

2. Should the Secretary of Transportation determine, after review of the report prepared by the Federal Highway Administration pursuant to Section 4(f) of the Department of Transportation Act of 1966, that the project must be changed from that which has been described to the Executive Director, the Federal Highway Administration will so advise the Advisory Council on Historic Preservation and again request comments in accordance with the "Procedures for the Protection of Historic and Cultural Properties" (36 C.F.R. Part 800) as appropriate prior to proceeding with the proposed undertaking.

Robert M. Utley 1/6/78
(date)
Robert M. Utley
Deputy Executive Director
Advisory Council on Historic Preservation

R/W Young 1/17/78 (date)
Federal Highway Administration
Department of Transportation

Jane L. Silverman 1/20/78
(date)
Hawaii State Historic Preservation
Officer

Richard H. Jorde 1/21/78
(date)
Chairman
Advisory Council on Historic Preservation

U.S. DEPARTMENT OF INTERIOR

2899



United States Department of the Interior DIRECTOR'S OFFICE

NATIONAL PARK SERVICE
WESTERN REGION
450 GOLDEN GATE AVENUE, BOX 3606
SAN FRANCISCO, CALIFORNIA 94103

NOV 19 12 44 PM '75

IN REPLY REFER TO:

L7619
(WR)PSE

NOV 19 1 12 PM 1975
NOV 14, 1975

DEPT. OF TRANSPORTATION

Mr. E. Alvey Wright
Director
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Wright:

We have reviewed the Environmental Impact Statement Preparation Notice for Kuakini Highway Realignment Project and offer the following comments for your consideration. These comments are provided on a technical assistance basis only as they do not represent formal review comments from the Department of the Interior.

We recommend that an archeological survey be conducted by a professional archeologist over all areas where ground disturbance will occur. If significant cultural resources are discovered they should be described and evaluated for their National Register potential. If they meet the criteria for nomination, as set forth in Title 36, CFR 800.10, they should be nominated to the National Register of Historic Places.

The environmental statement should indicate that the National Register of Historic Places has been consulted to determine whether or not National Register properties are to be affected by the project.

If National Register properties are to be affected, procedures established in Section 106 of the National Historic Preservation Act of 1966 should be followed.

The environmental statement should also indicate that the State Historic Preservation Officer has been consulted or include a copy of his comments regarding the project's effects upon properties either listed on or in the process of nomination to the National Register of Historic Places.



Copies of all archeological reports should be sent to the National Park Service, Western Archeological Center, P.O. Box 49008, Tucson, Arizona 85717 in accordance with Section 3(a) of Public Law 93-291.

We appreciate the opportunity to comment on this preparation notice and hope these comments will be helpful in developing a draft environmental statement for this project.

Sincerely,

Bruce M. Kilgore

Bruce M. Kilgore
Associate Regional Director,
Professional Services

GEORGE R. ARIYOSHI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
889 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

December 4, 1975

E. ALVEY WRIGHT
DIRECTOR

DEPUTY DIRECTORS
WALLACE AOKI
RYOKICHI HIGASHIONNA
DOUGLAS S. SAKAMOTO
CHARLES O. SWANSON

IN REPLY REFER TO:
HWY-PA
2.26031

Mr. Bruce M. Kilgore
Associate Regional Director,
Professional Services
National Park Service,
Western Region
U.S. Department of the Interior
450 Golden Gate Avenue
Box 36063
San Francisco, California 94102

Dear Mr. Kilgore:

Subject: Kuakini Highway Realignment
Project No. F-011-1(14)

Thank you for your comments relative to the project's impact on cultural resources.

No sites listed in the National Register will be affected; however, the State Historic Preservation Officer and the Federal Highway Administration have determined that two eligible sites, the Kona Field System and the Great Wall of Kuakini may be adversely affected. Therefore, we will be complying with the provisions of Section 106 of the National Historic Preservation Act of 1966 and Title 36, CFR, Part 800, in developing the draft environmental statement.

Thank you for your assistance. We will be requesting your office's review of the draft EIS.

Sincerely,

E. Alvey Wright
E. ALVEY WRIGHT
Director



United States Department of the Interior
DIRECTOR'S OFFICE

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

244

In Reply Refer To:
L7619-MQ
(ER-76/236)

MAY 12 8 55 AM 1976

MAY 6 1 06 PM '76

MAY 3 1976
DEPT. OF TRANSPORTATION

Dear Mr. Segawa:

This is in response to the request for the Department of the Interior's comments on the draft environmental statement for the Kuakini Highway Realignment Project, Island of Hawaii, Hawaii.

Environmental Statement Comments

The draft statement contains little information on topography or geology, including surficial deposits, except for the facts that the terrain is rugged and rocky (page 2, last paragraph), that soils are shallow (page 18, line 7); and that slopes average approximately 10 to 15 percent (page 2 and page 18). It is stated that "cuts and fills from the highway may detract from the naturally scenic quality of the countryside" (page 27, paragraph 1), but there is no evaluation of this impact. The statement lacks an indication of the anticipated magnitude of earthwork, materials to be excavated or emplaced for fill, and of approximate volumes of earthwork required, except the commitment that the plan is for "balancing and minimizing cuts and fills where possible" (page 43, paragraph 1). The statement should include a discussion of these environmental elements and evaluate the impacts on them stemming from construction and operation of the project.

The section dealing with the description of the project should be expanded to discuss the location of any borrow and spoil areas needed for project construction. Other sections of the statement dealing with the description of the existing environmental setting can describe the borrow/spoil area locations under pre-project conditions as they relate to flora, fauna and esthetics. Impacts of the borrow/spoil operations should be identified and mitigation measures employed to lessen the impact of borrow/spoil operations on the environment should be discussed.

Page 32 states that Line 6 will affect five businesses and 12 residences, but figure 8 shows Line 6 as affecting seven businesses and 12 residences. In addition, it is stated that Line 8 will have an effect on businesses, residences and churches similar to Line 6 (page 33, last paragraph), but figure 8 shows Line 8 as affecting five businesses and no residences. You may wish to resolve these inconsistencies in the final statement.



Whatever alternative alignment is selected, the effects upon water resources will be minimal. However, we note for your information that the wells at Kahaluu are of the water-table type and not artesian as stated on page 20.

Copies of the archeological surveys of alternatives Line 6 and Line 8, should be sent to the Western Archeological Center, National Park Service, P. O. Box 49008, Tucson, Arizona 85717, and the results and recommendations summarized in the final statement.

The statement indicates that Line 1 would open possible sites for scenic lookouts and roadside picnic areas (page 31). If this alignment is selected, we recommend that at least one scenic overlook be incorporated into the planning and be constructed as a part of the highway project (23 CFR 752.106). Also, we recommend that the Hawaii Department of Transportation coordinate with local park and recreation officials in order to determine if any other recreation enhancement or access development can be incorporated into the planning and construction.

Section 4(f) Comments

The statement recognizes that the Kailua Playground would be adversely affected by either the Line 6 or Line 8 Alternative and that a Section 4(f) statement will be necessary if either of these alternatives are used.

The statement also shows that FHWA and the State Historic Preservation Officer are in agreement that the Great Wall of Kuakini and the Kona Field System are two historic sites eligible for the National Register of Historic Places (page 23 and Appendix I, letters of 12/4/75 and 1/2/76). As such, these properties have at least State and local significance. Therefore, any use of land from these historic properties for highway purposes involves Section 4(f) of the DOT Act and the need to prepare a Section 4(f) statement in accordance with DOT Order 5610.1B (Attachment 2, Section 4) and 23 CFR 771.19.

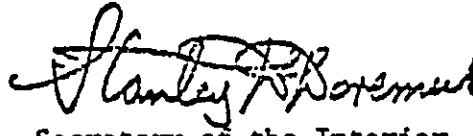
Summary Comments

In the preparation of any Section 4(f) statement, field-level offices of this Department are available to provide technical assistance as requested. For historic site involvements, please coordinate with Mr. Robert L. Barrel, State Director, Hawaii Group, National Park Service, U.S. Department of the Interior, 677 Ala Moana Boulevard, Suite 512, Honolulu, Hawaii 96813 (phone: 521-3027).

For technical assistance on parkland uses, please contact the Regional Director, Pacific Southwest Region, Bureau of Outdoor Recreation, U.S. Department of the Interior, 450 Golden Gate Avenue, P. O. Box 36062, San Francisco, California 94102 [phone FTS: (415)556-0182].

Pursuant to Section 4(f) of the DOT Act, the Department of the Interior would expect to be consulted when FHWA has approved for circulation a draft Section 4(f) statement. Seven copies of that document should be sent to this office for our intra-departmental review.

Sincerely yours,



Deputy Assistant

Secretary of the Interior

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
677 Ala Moana Boulevard; Suite 613
Honolulu, Hawaii 96813

✓ cc: Mr. E. Alvery Wright
Hawaii Department of Highways



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer To:
(ER 77/1083)

FEB 6 1978

Mr. Ralph T. Segawa
Division Administrator
Federal Highway Administration
300 Ala Moana Boulevard - Suite 4119
Box 50206
Honolulu, Hawaii 96850

Dear Mr. Segawa:

This responds to your request for comments on the Section 4(f) statement for the Kuakini Highway realignment project, Island of Hawaii, Hawaii.

The Department of the Interior concurs that there is no prudent and feasible alternative to the use of land from the Great Wall of Kuakini and the Kona Field System for this project, and, provided that the provisions of the memorandum of agreement entered into pursuant to 36 CFR 800 are met, that the project includes all possible measures to minimize harm to these two properties.

Accordingly, we offer no objection to Section 4(f) approval of this project.

Sincerely yours,

Larry E. Meierotto
Secretary of the Interior

Deputy Assistant

U.S. DEPARTMENT OF HOUSING AND
URBAN DEVELOPMENT



REGION IX
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, California 94102

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL HOUSING ADMINISTRATION
HONOLULU INSURING OFFICE
P.O. BOX 3377
HONOLULU, HAWAII 96801

April 30, 1976

IN REPLY REFER TO:
9.7U (Johnson/
546-5554)

Mr. Ralph T. Segawa
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
677 Ala Moana Blvd., Suite 613
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Kuakini Highway Realignment
Hawaii Project No. RF-011-1(14)
Draft Environmental Impact Statement

In accordance with your request, we have reviewed the subject Draft Environmental Impact Statement.

It appears that the selection of line #1 of the proposed alignments would be most beneficial in terms of urban design, growth potential, economics and social considerations. However, the safety of the people utilizing existing Kuakini Highway should not be ignored. Remedial construction to eliminate substandard design and mitigation of hazards at intersections should be provided along Kuakini Highway.

We would appreciate a copy of the Final Environmental Impact Statement.

Sincerely,

Alvin K. H. Pang
Alvin K. H. Pang
Director

cc:
Council on Environmental Quality



REGION IX
450 Golden Gate Avenue
P.O. Box 36003
San Francisco, California 94102

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AREA OFFICE
300 ALA MOANA BLVD., RM. 3318, P. O. BOX 50007
HONOLULU, HAWAII 96850
January 9, 1978

IN REPLY REFER TO:

JOHNSON (9.7SC/
546-5554)

Mr. Ralph T. Segawa, Division Administrator
U.S. Department of Transportation
Federal Highway Administration
P. O. Box 50206
Honolulu, Hawaii 96850


Dear Mr. Segawa:

Subject: HEC-HI Hawaii Project RF-011-1(14), Kuakini
Highway Realignment, Preliminary Section
4(f) Statement

The preliminary Section 4(f) Statement on the subject
project was reviewed against our comments made to you on
the Draft EIS on April 30, 1976.

We have no additional comments on HUD concerns and look
forward to receiving a copy of the final statement.

Sincerely,


Alvin K. H. Pang
Director

U.S. DEPARTMENT OF AGRICULTURE

COOPERATIVE EXTENSION SERVICE

University of Hawaii at Manoa - College of Tropical Agriculture
United States Department of Agriculture Cooperating

November 22, 1977

Mr. Ralph T. Segawa
Division Administrator
U. S. Department of Transportation
P. O. Box 50206
Honolulu, Hawaii 96850

Dear Mr. Segawa:

Subject: Hawaii Project RF-011-1 (14), Kuakini Highway
Realignment, Preliminary Section 4(f) Statement

Thank you for the opportunity to review your Preliminary 4(f) Statement on the Kuakini Project. We have no comments to offer on this statement, nor do we wish to receive a copy of the finalized statement.

Sincerely,



Blaine Bradshaw
Community Resource Development
Specialist

FIGURES

1. PROJECT LOCATION
2. TYPICAL SECTION - LINE 1
3. ACCIDENT DATA
4. OTHER ALTERNATIVES
5. LAND TO BE IMPACTED BY HIGHWAY
6. COMPARATIVE DATA
- 7A. FACILITIES MAP
- 7B. LAND USE ALLOCATION MAP
8. GREAT WALL OF KUAKINI BYPASS ALTERNATES

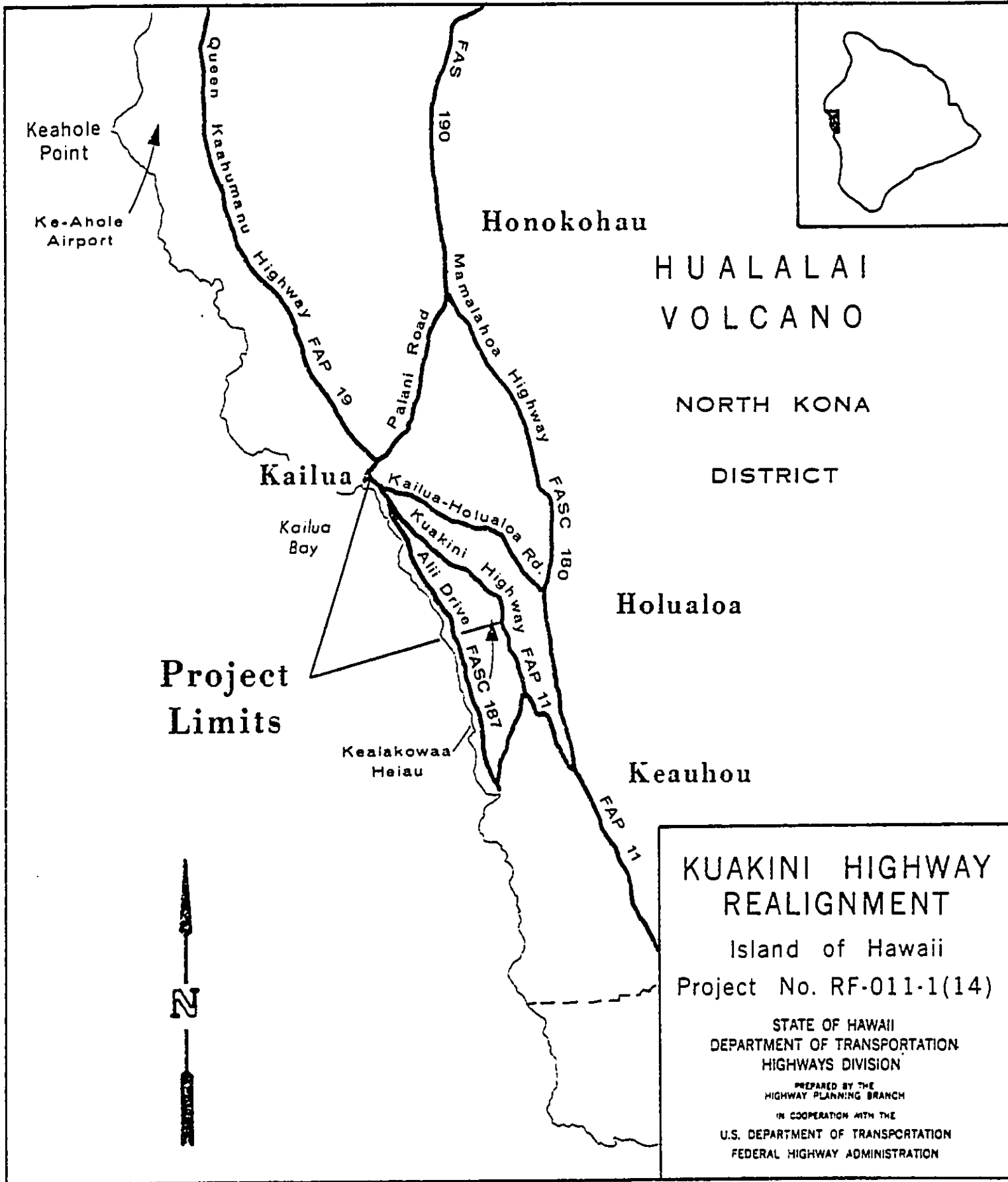
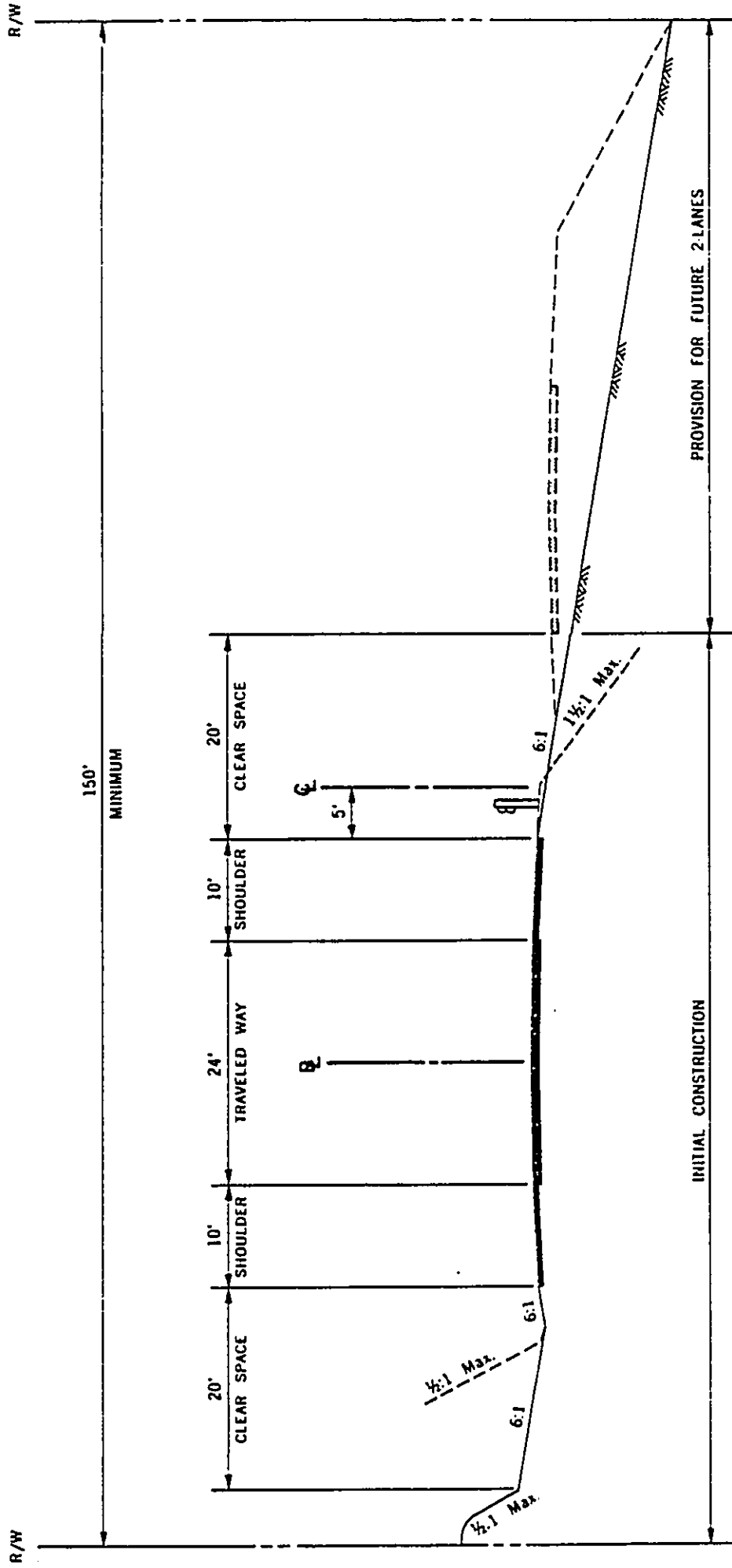


Figure 1



TYPICAL SECTION
 KUAKINI HIGHWAY REALIGNMENT

LINE 1

Figure 2

TABLE 1. ACCIDENT DATA

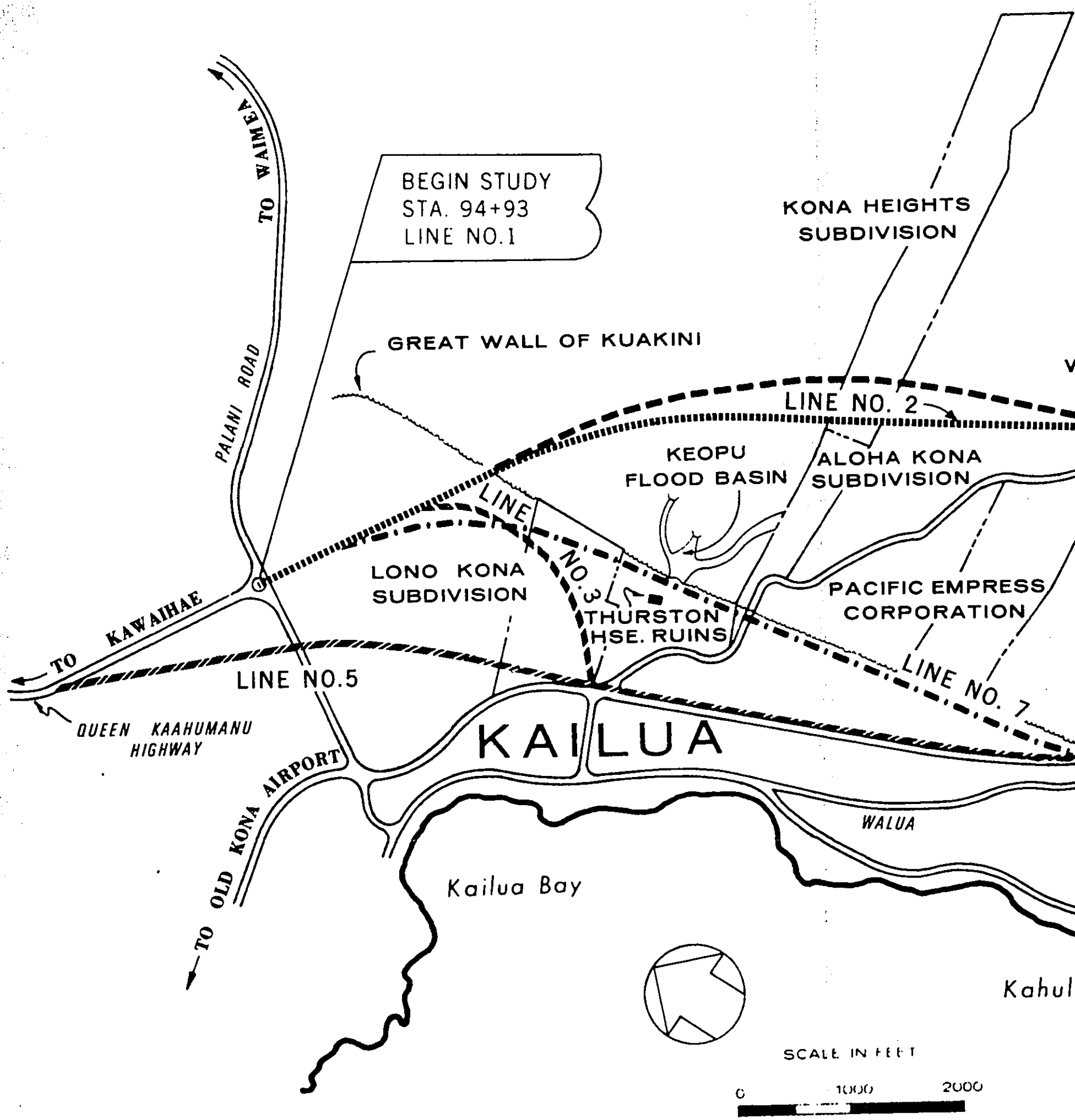
Year	NO. OF ACCIDENTS						
	Multi-Vehicle In Transport	Fixed Objects	Pedestrian	Overturn	Parked Vehicle or R/OFF Road	All Others	Total
FAP 11, Queen	30	8	1	0	8	3	51
1971	37	23	1	4	0	2	67
1972	33	22	2	1	2	3	63
1973	28	19	2	3	1	2	55
1974	25	23	2	2	2	4	58
1975	49	15	2	6	0	1	73

TABLE 2. COMPARISON WITH SIMILAR FACILITY

Period	AVERAGE NO. OF ACCIDENTS						
	Multi-Vehicle In Transport	Fixed Objects	Pedestrian	Overturn	Parked Vehicles or R/OFF Road	All Others	Total
FAP 11, Same as above	34	18	2	3	2	3	61
1970-1975	18	11	3	1	2	1	35

Source: State of Hawaii, Department of Transportation, Land Transportation Facilities Division

FIGURE 3



BEGIN STUDY
STA. 94+93
LINE NO.1

KONA HEIGHTS
SUBDIVISION

GREAT WALL OF KUAKINI

LINE NO. 2

KEOPU
FLOOD BASIN

ALOHA KONA
SUBDIVISION

LONO KONA
SUBDIVISION

LINE NO. 3

THURSTON
HSE. RUINS

PACIFIC EMPRESS
CORPORATION

TO KAWAIHAE

LINE NO. 5

QUEEN KAAHUMANU
HIGHWAY

KAILUA

LINE NO. 7

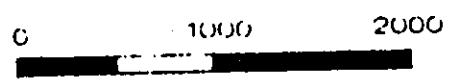
TO OLD KONA AIRPORT

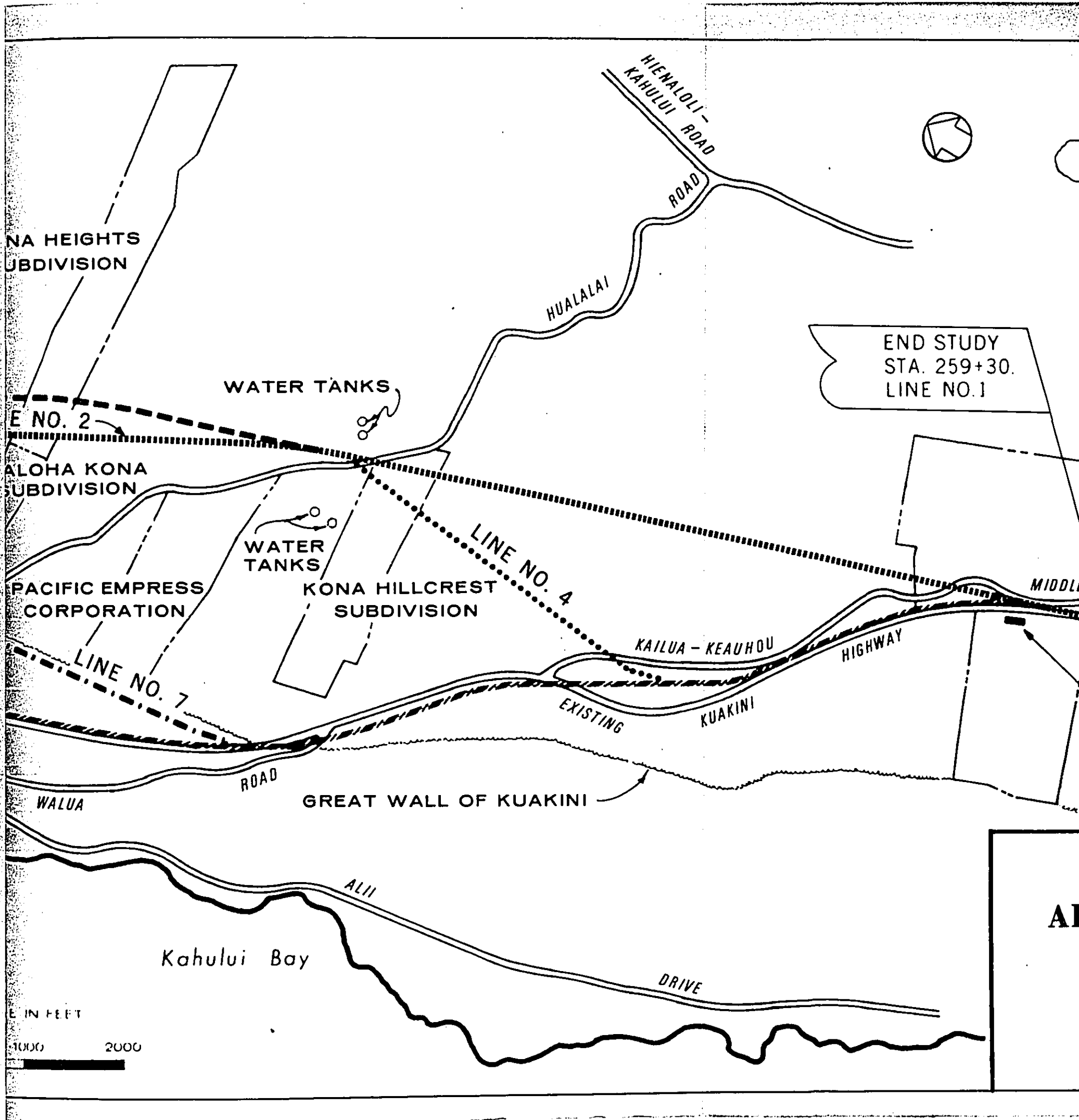
Kailua Bay

WALUA

Kahulou

SCALE IN FEET





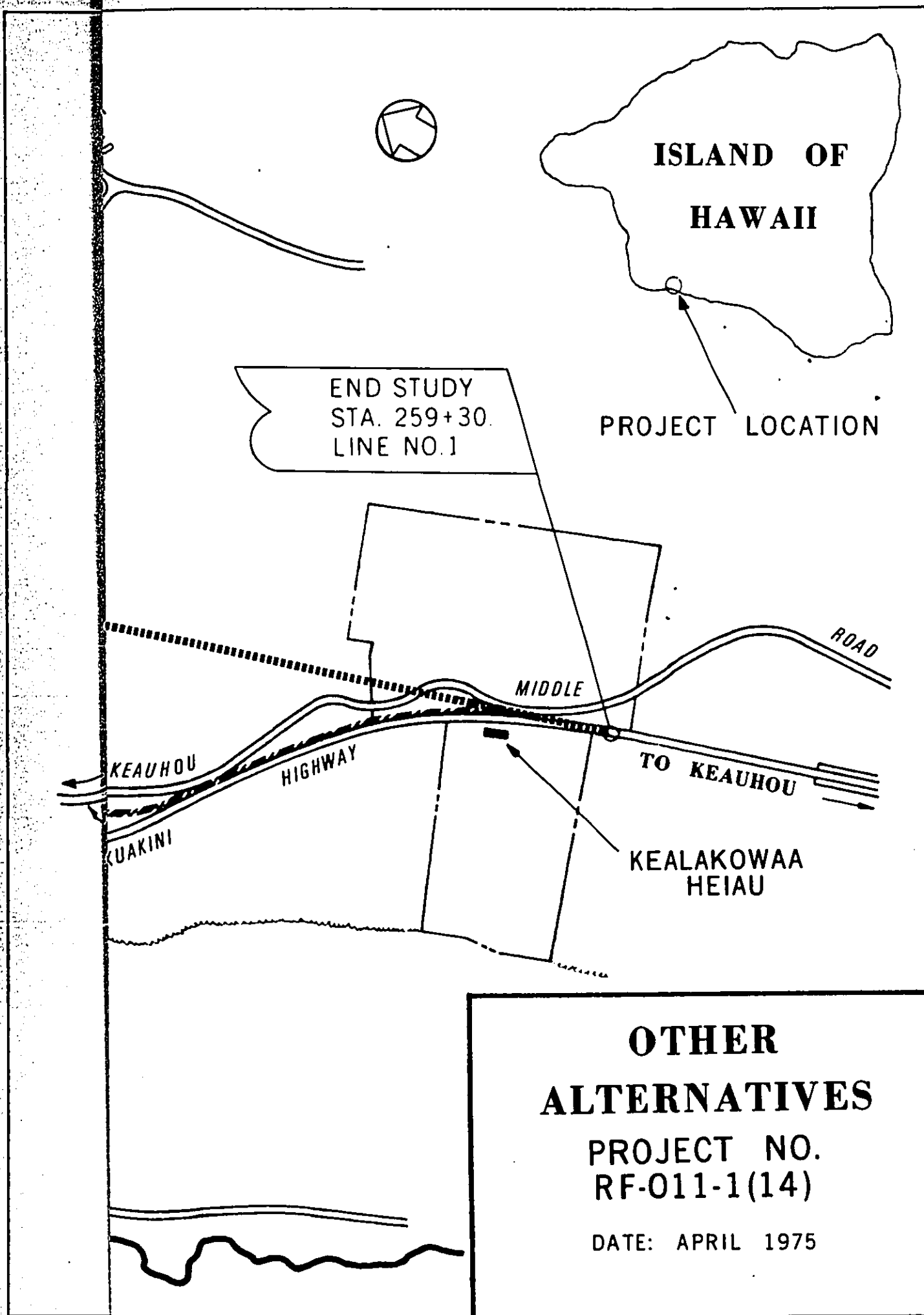
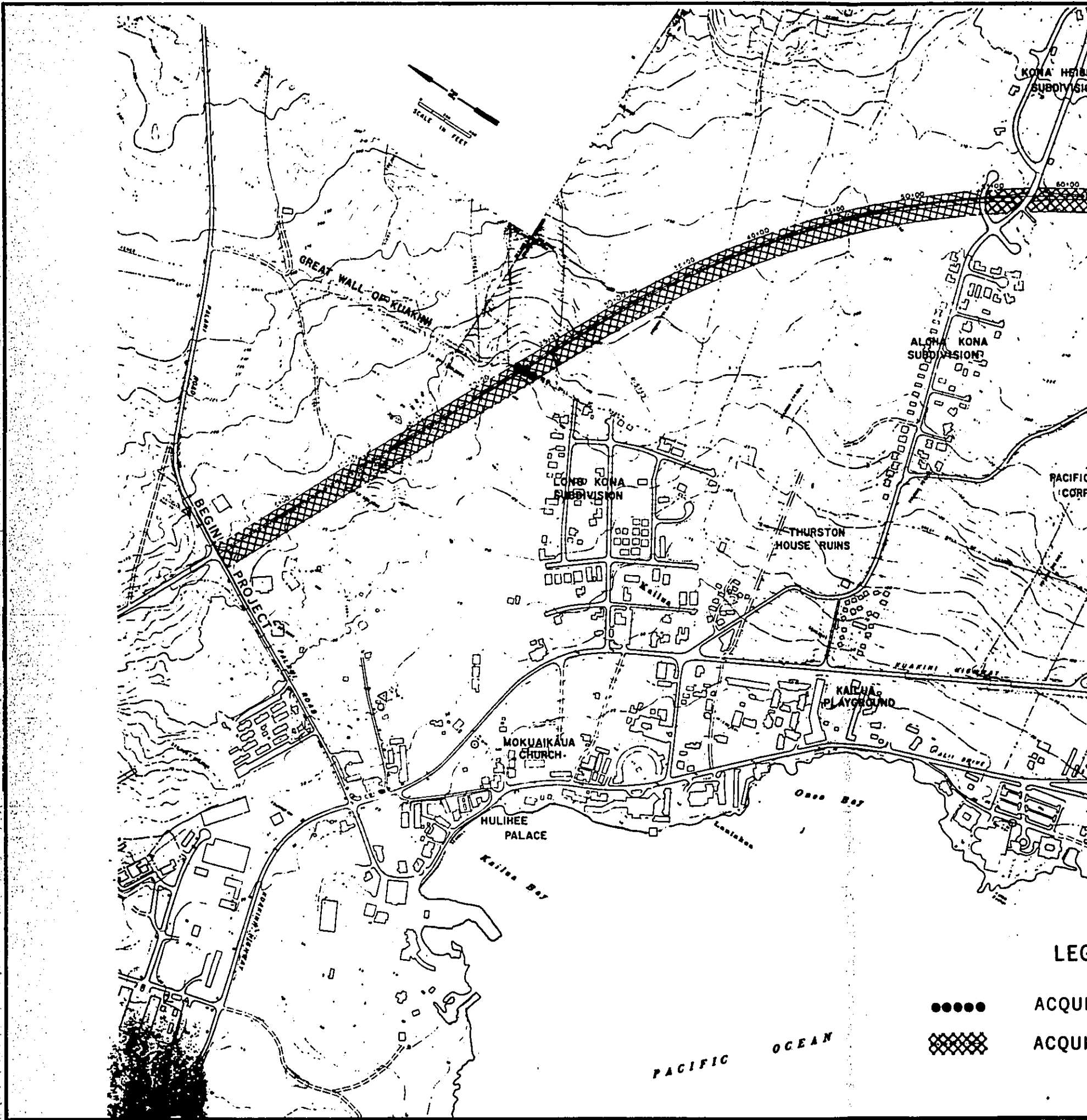


Figure 4



LEG

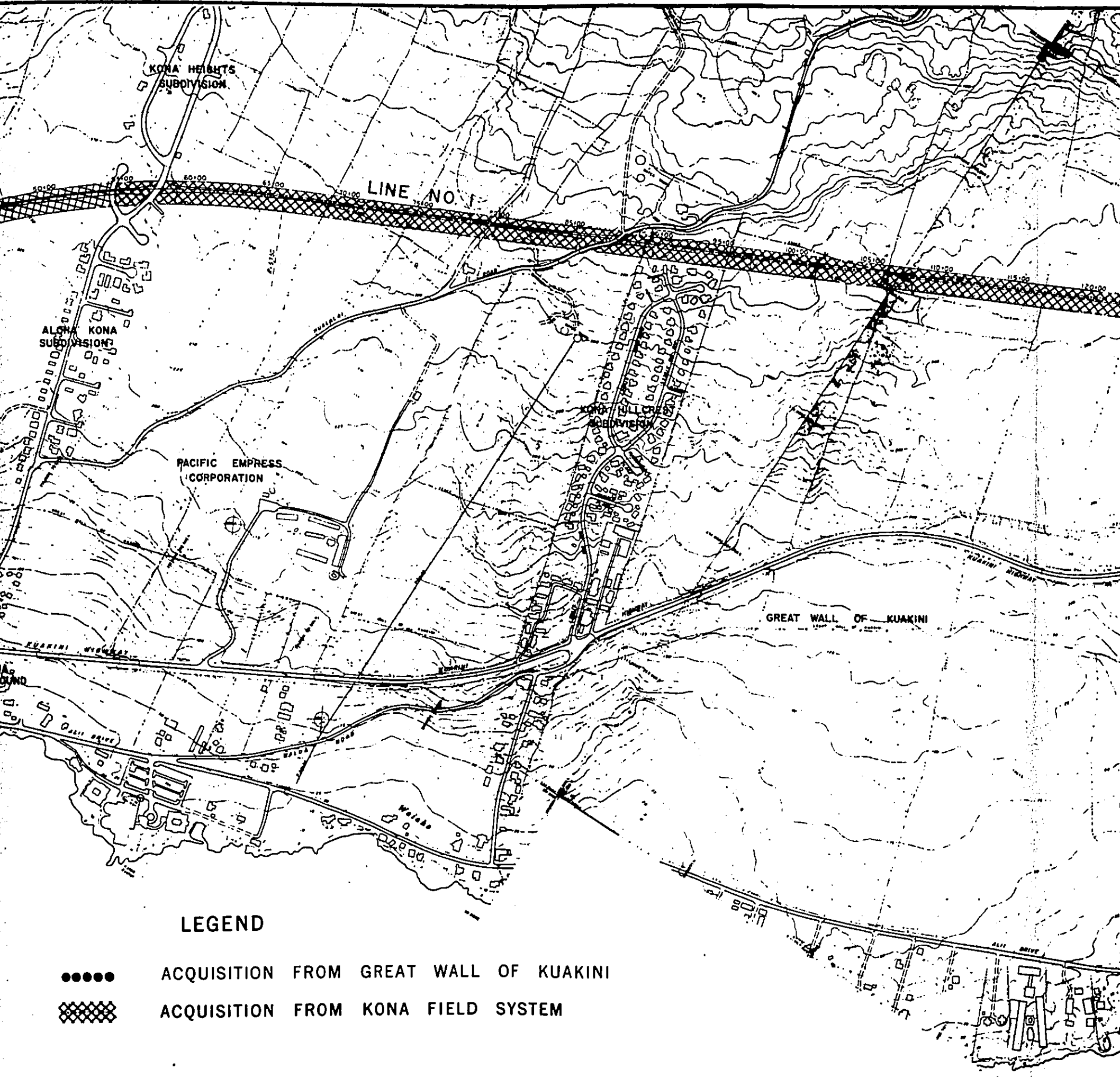
●●●●

ACQU

▨▨▨▨

ACQU

PACIFIC OCEAN



LEGEND



ACQUISITION FROM GREAT WALL OF KUAKINI



ACQUISITION FROM KONA FIELD SYSTEM

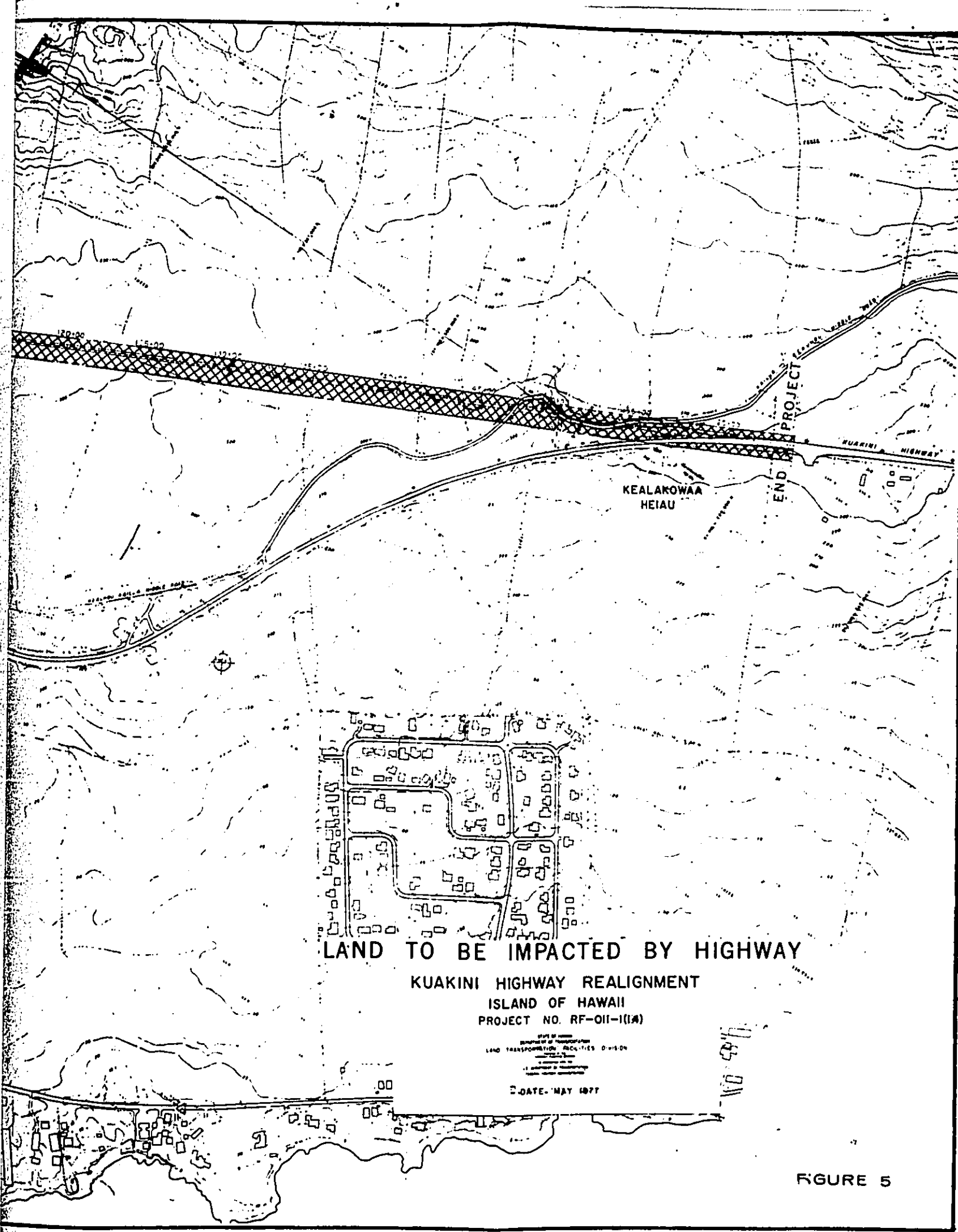
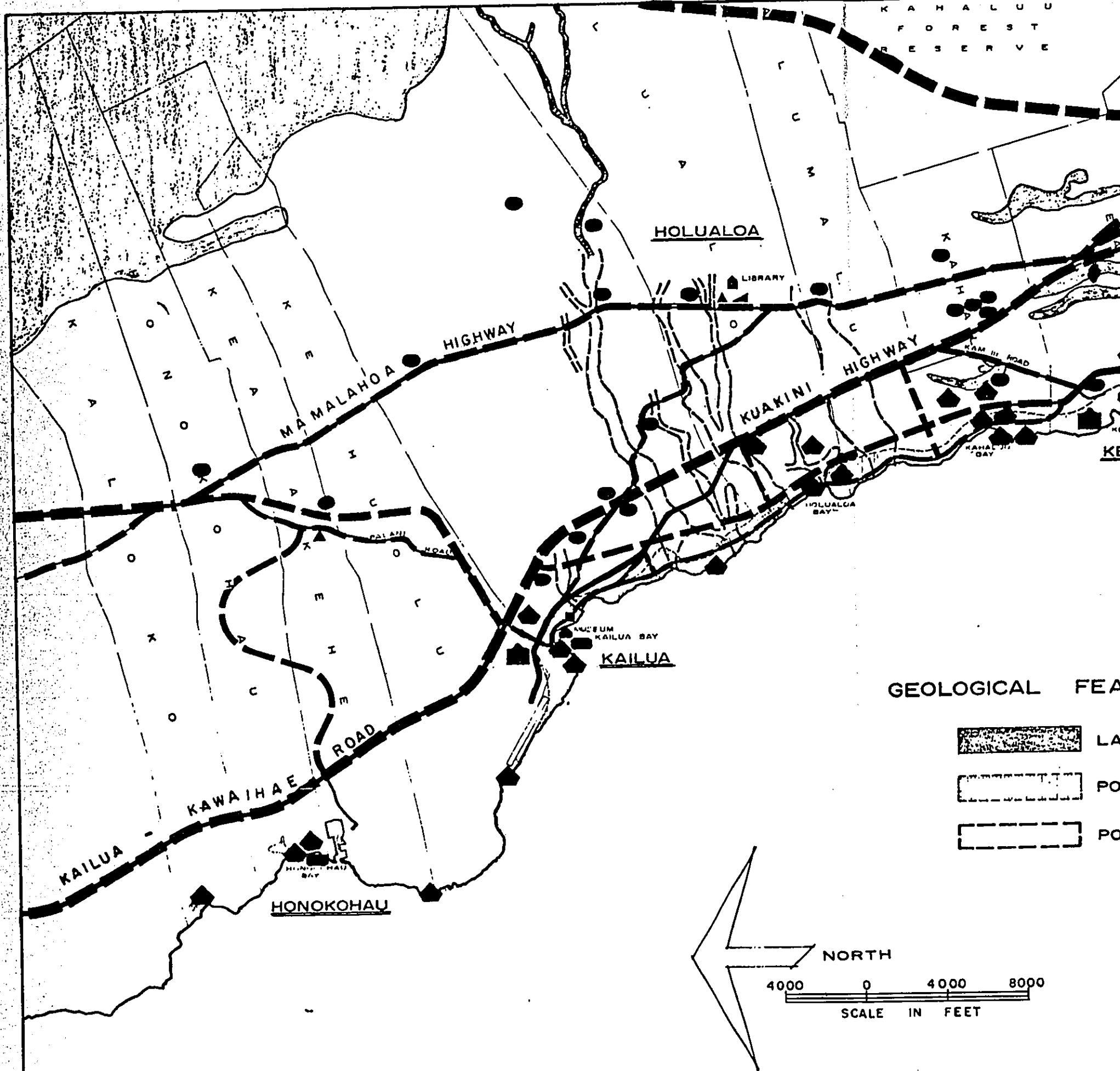



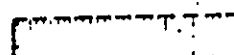

FIGURE 5

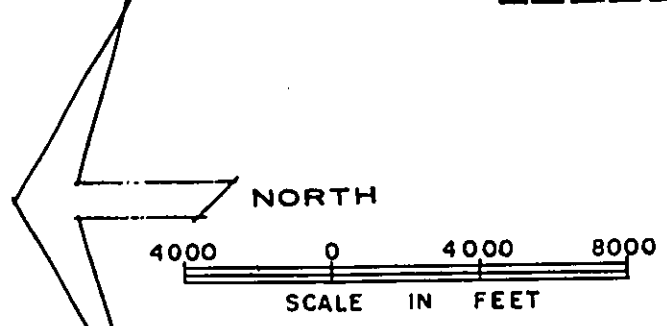
KUAKINI HIGHWAY REALIGNMENT
Project No. RF-011-1(14)
COMPARATIVE DATA

	LINE NUMBER		
	1	6	8
I. DESIGN FACTORS			
ROW Min. Width (feet)			
1. 4-Lane Section	None	120	120
2. 2-Lane Section	150	100	None
Roadway Lengths (miles)			
1. 4-Lane Section	None	2.42	2.96
2. 2-Lane Section	3.11	0.54	None
Design Speed (MPH)	60	50	50
Maximum Grade	4.5%	4.2%	4.0%
II. COSTS IN \$1000			
Construction	2,694	3,213	3,263
Preliminary Engineering	245	292	297
Rights-of-Way	2,739	4,136	3,484
TOTAL	5,678	7,641	7,044
III. SOCIAL EFFECTS			
No. of Parcels Affected	57	68	97
No. of Residences Affected	0	12	0
No. of Businesses Affected	0	7	5



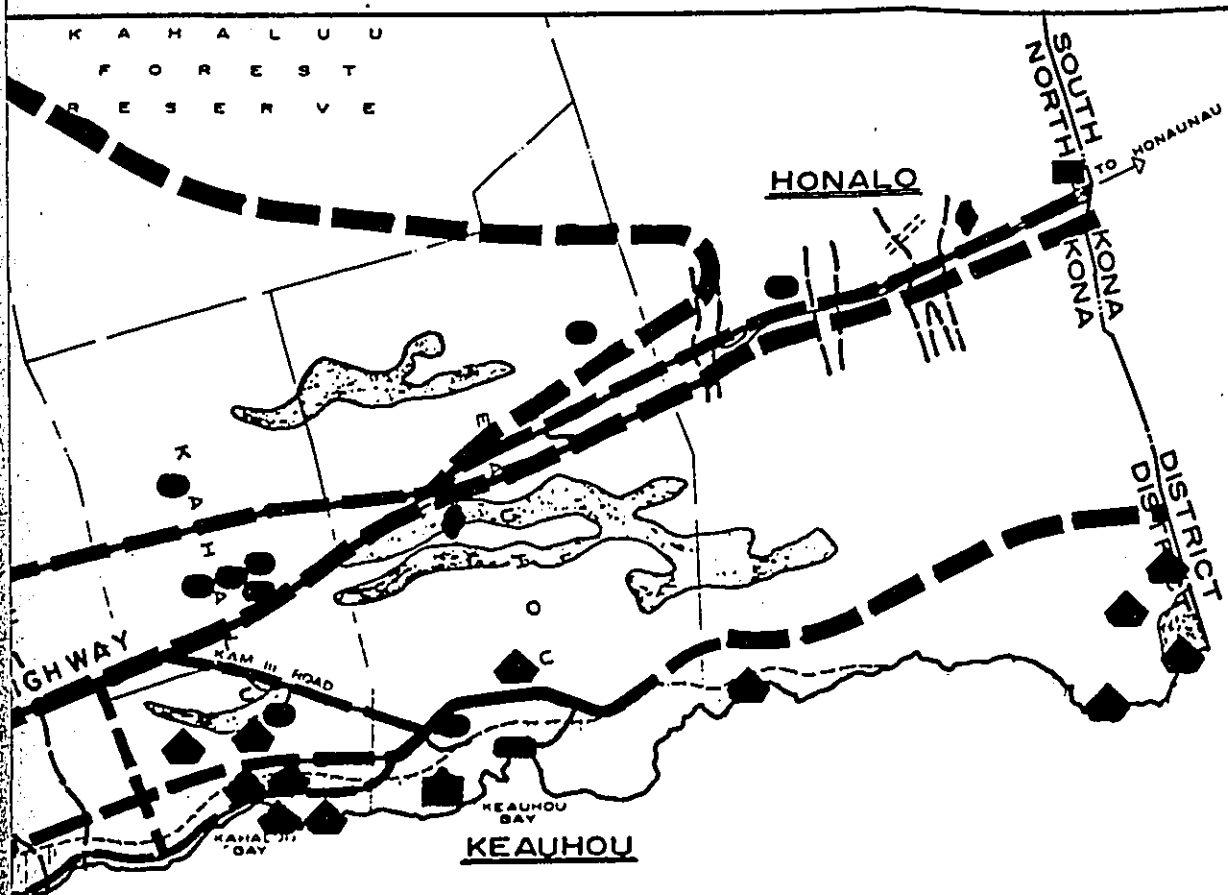
GEOLOGICAL FEAT

-  LA
-  PO
-  PO



NORTH KON

"SOURCE: GENERAL PLAN, COUNTY OF HAWAII, JANUARY 1971"



FACILITIES

PUBLIC & CULTURAL FACILITIES
UTILITIES & SAFETY AND TR

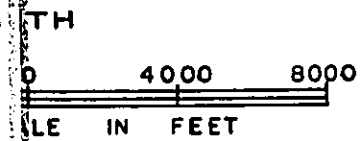
- ▲ ELEMENTARY, ▲ INT
- CIVIC CENTER
- FIRE STATION
- HOSPITAL
- ◆ HISTORICAL SITES
- ▲ LIBRARY OR MUSEUM
- WATER TANKS, RESER
- SEWER (TREATMENT P
- ◆ ELECTRICITY (PLANTS)
- DRAINAGE (CHANNELS)
- WHARF OR HARBOR
- ▭ AIRPORT TERMINAL

GEOLOGICAL FEATURES

- ▨ LANDS OF 20% SLOPE OR OVER
- ▭ POTENTIAL TSUNAMI INUNDATION AREAS
- ▭ POTENTIAL FLOOD HAZARD AREAS

CIRCULATION :

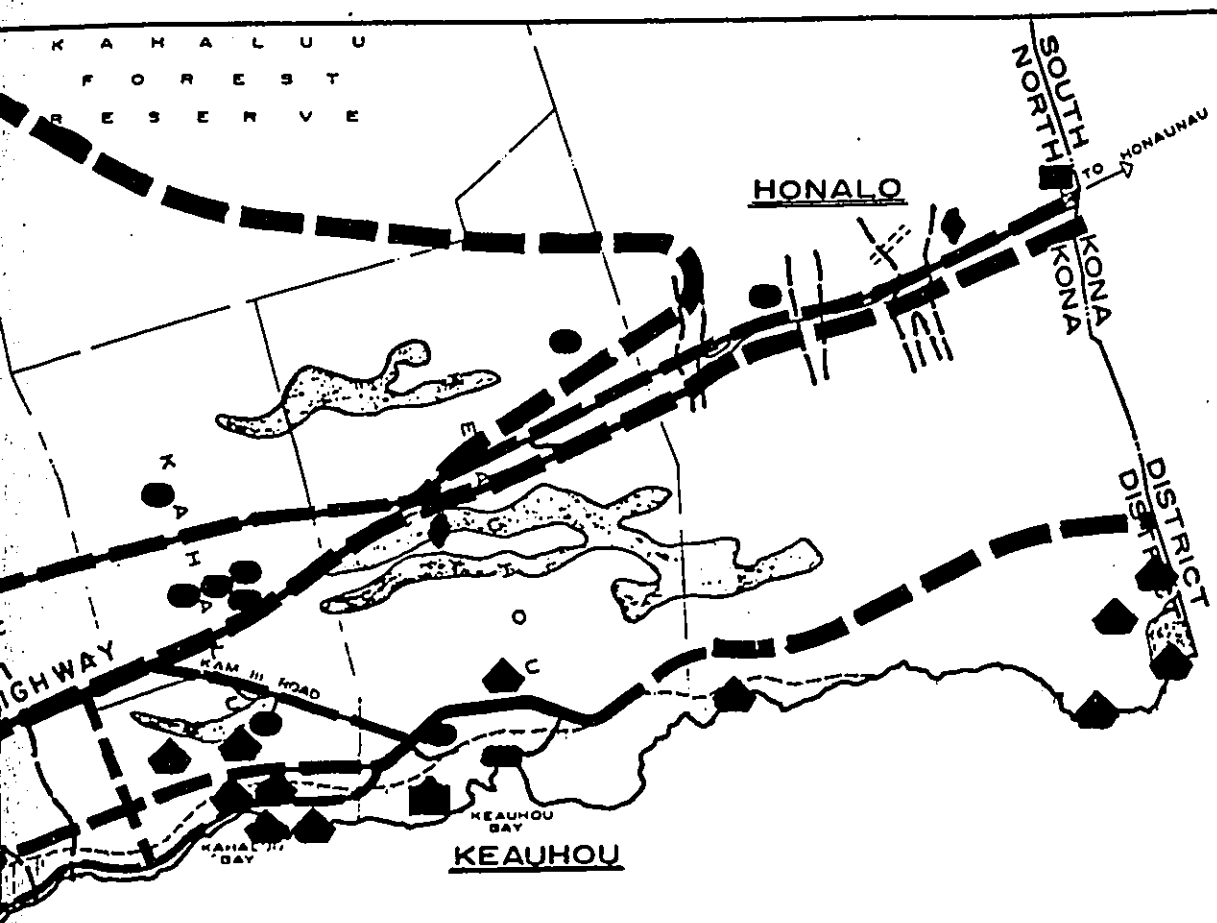
- ▭ PRIMARY ARTERIAL
- ▭ SECONDARY ARTERIAL
- ▭ COLLECTOR STREET



ORTH KONA DISTRICT

CORRECTION

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



FACILITIES

PUBLIC & CULTURAL FACILITIES
UTILITIES & SAFETY AND TRANSPORTATION

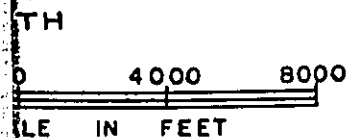
- ▲ ELEMENTARY, ▲ INTERMEDIATE
- CIVIC CENTER
- FIRE STATION
- HOSPITAL
- ◆ HISTORICAL SITES
- LIBRARY OR MUSEUM
- WATER TANKS, RESERVOIR
- SEWER (TREATMENT PLANT)
- ◆ ELECTRICITY (PLANTS)
- DRAINAGE (CHANNELS)
- WHARF OR HARBOR
- ▭ AIRPORT TERMINAL

GEOLOGICAL FEATURES

- ▨ LANDS OF 20% SLOPE OR OVER
- ▭ POTENTIAL TSUNAMI INUNDATION AREAS
- ▭ POTENTIAL FLOOD HAZARD AREAS

CIRCULATION :

- ▭ PRIMARY ARTERIAL
- ▭ SECONDARY ARTERIAL
- ▭ COLLECTOR STREET



ORTH KONA DISTRICT

S MAP

AL FACILITIES, PUBLIC TY AND TRANSPORTATION

NTARY, ▲ INTERMEDIATE, ▽ HIGH SCHOOL

ENTER

TATION

AL

CAL SITES

Y OR MUSEUM

TANKS, RESERVOIRS, SPRINGS (COUNTY)

(TREATMENT PLANTS)

RICITY (PLANTS)

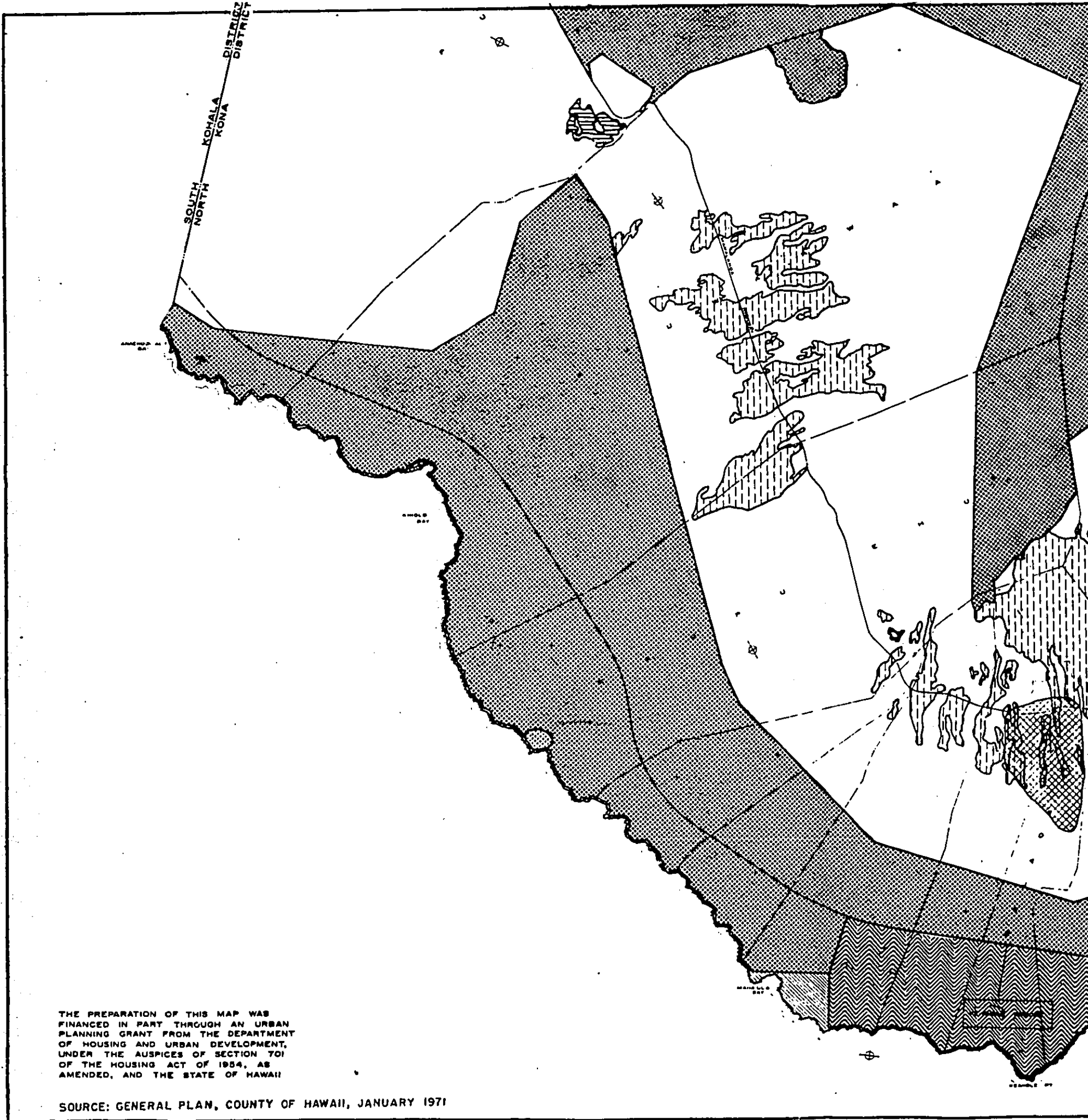
AGE (CHANNELS)

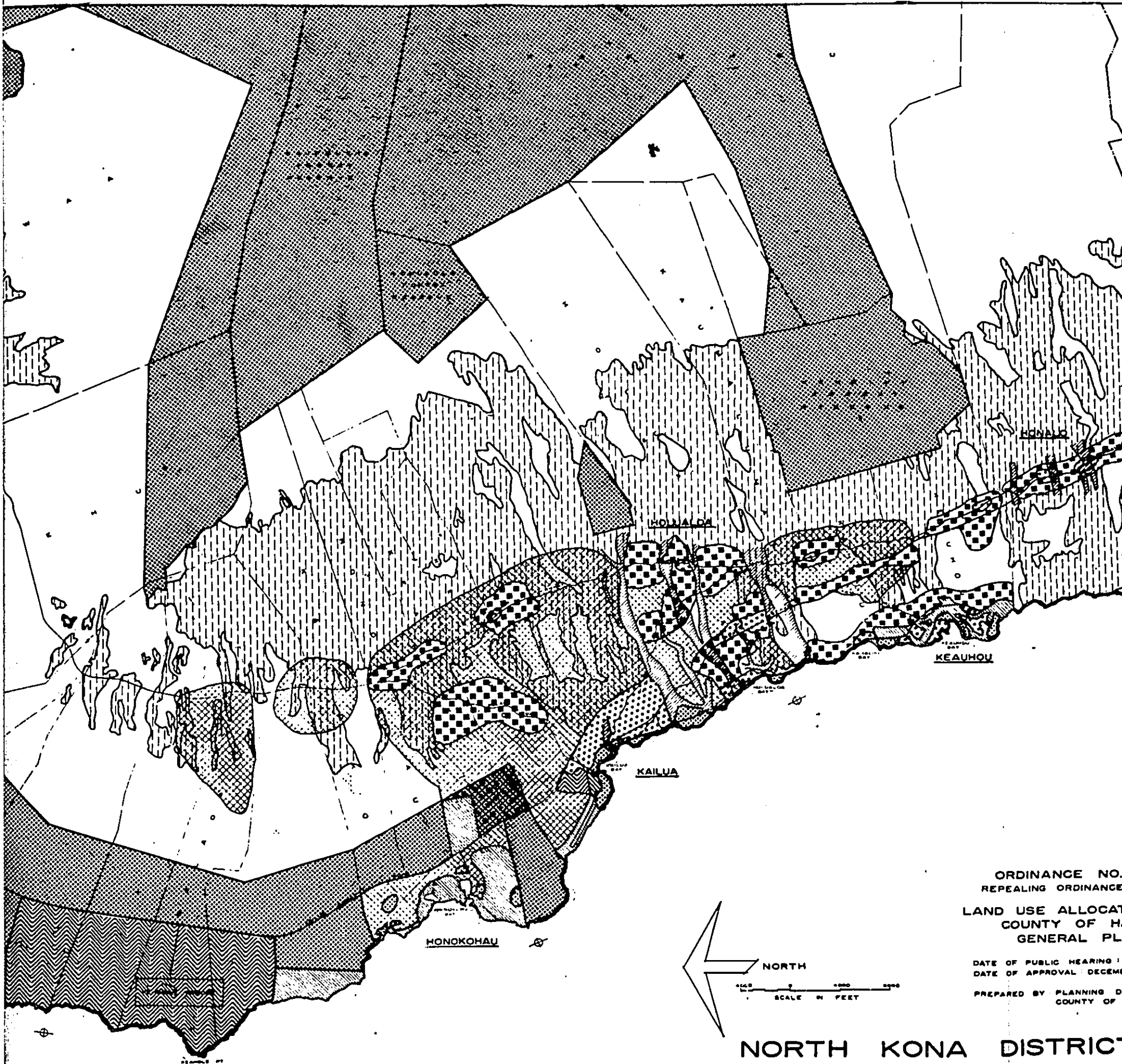
OR HARBOR

TERMINAL

	EXISTING	IMPROVE	PROPOSED
Y ARTERIAL			
DARY ARTERIAL			
TOR STREET			

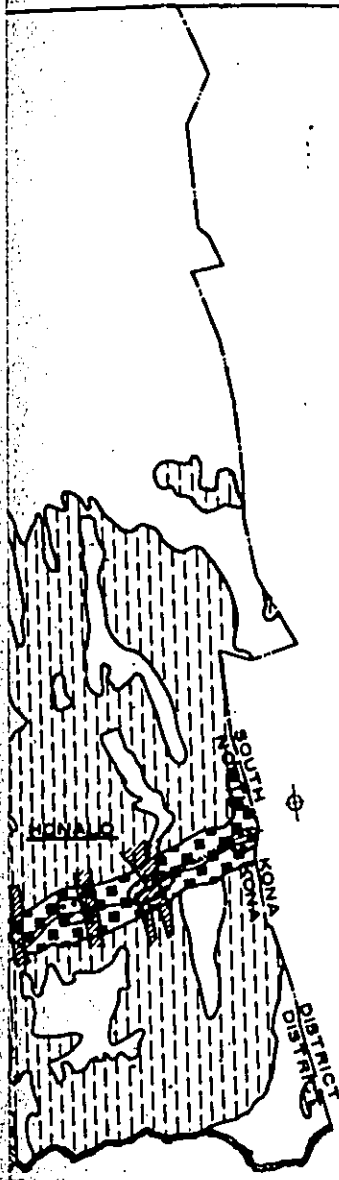
FIGURE 7A






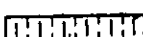









ORDINANCE NO. _____
 REPEALING ORDINANCE _____
 LAND USE ALLOCATION MAP
 COUNTY OF HAWAII
 GENERAL PLAN
 DATE OF PUBLIC HEARING: _____
 DATE OF APPROVAL: DECEMBER _____, 19____
 PREPARED BY: PLANNING DEPARTMENT
 COUNTY OF HAWAII

NORTH KONA DISTRICT

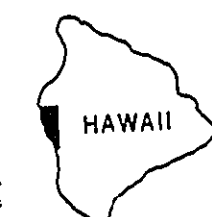
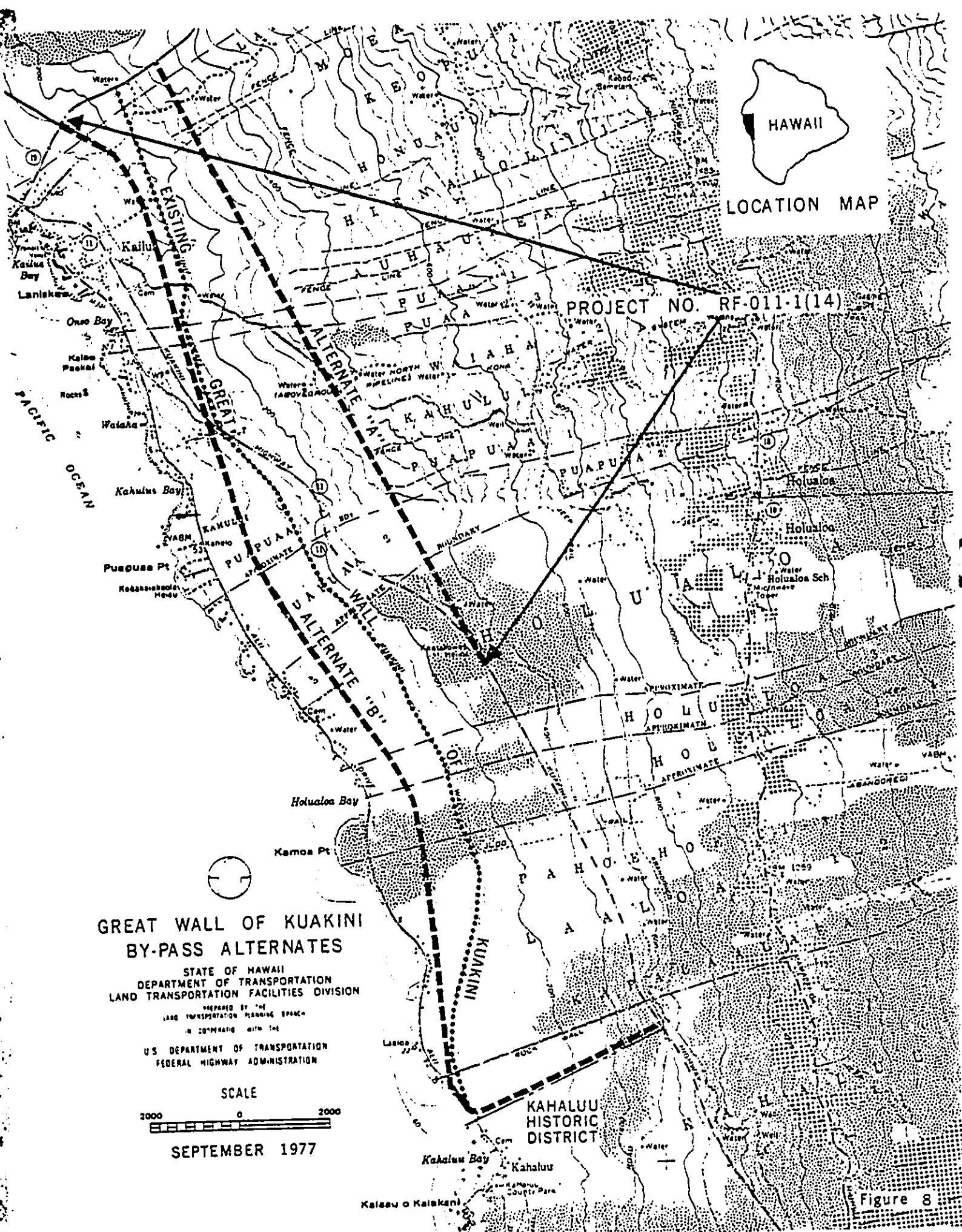


-  MEDIUM DENSITY
-  LOW DENSITY
-  INDUSTRIAL
-  INTENSIVE AGRICULTURAL
-  EXTENSIVE AGRICULTURAL
-  ORCHARDS
-  RESORT
-  OPEN AREA
-  CONSERVATION
-  FLOOD PLAIN
-  ALTERNATE URBAN EXPANSION
(LOW, MEDIUM, & HIGH DENSITY USES ONLY)

ORDINANCE NO. 439
 PLANNING ORDINANCE NO. 317
 USE ALLOCATION MAP
 COUNTY OF HAWAII
 GENERAL PLAN
 PUBLIC HEARING: JULY 8, 1971
 APPROVAL: DECEMBER 23, 1971
 PREPARED BY: PLANNING DEPARTMENT
 COUNTY OF HAWAII

DISTRICT

FIGURE 7B

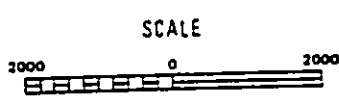


LOCATION MAP

PROJECT NO. RF-011-1(14)

**GREAT WALL OF KUAKINI
BY-PASS ALTERNATES**

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
PREPARED BY THE
LAND TRANSPORTATION PLANNING BRANCH
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



SEPTEMBER 1977

Figure 8