



EXECUTIVE CHAMBERS
HONOLULU

JOHN WAIHEE
GOVERNOR

88 DEC -2 AIO:14 November 15, 1988

OFC. OF ENVIRONMENTAL QUALITY CONTROL

The Honorable Russel S. Nagata
Comptroller
Department of Accounting and
General Services
State of Hawaii

Dear Mr. Nagata:

Based upon the recommendation of the Office of Environmental Quality Control, I am pleased to accept the Final Environmental Impact Statement for the site selection for the new Konawaena Elementary School as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes. This environmental impact statement will be a useful tool in the process of deciding whether the action described therein should be allowed to proceed. My acceptance of the statement is an affirmation of the adequacy of that statement under applicable laws and does not constitute an endorsement of the proposed action.

When the decision is made regarding the proposed action itself, I expect the proposing agency to 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, provide a useful analysis of the proposed action.

With kindest regards,

Sincerely,

JOHN WAIHEE

cc: Hon. John C. Lewin
✓ Mr. Marvin T. Miura

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LIBRARY**

**FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR THE SITE SELECTION
FOR THE NEW KONAWAENA
ELEMENTARY SCHOOL**

KONA, HAWAII

Prepared for:
**STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES**

Prepared by:
FUKUNAGA AND ASSOCIATES, INC.

SEPTEMBER 1988

FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
SITE SELECTION FOR THE
NEW KONAWAENA ELEMENTARY SCHOOL

This environmental document is prepared pursuant
to Chapter 343, Hawaii Revised Statutes

LOCATION:

North and South Kona
Island of Hawaii
State of Hawaii

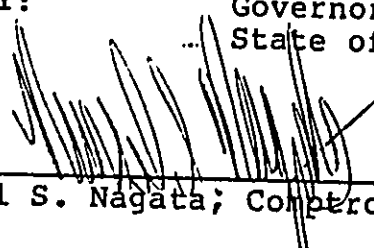
PROPOSING AGENCY:

Department of Accounting & General
Services
State of Hawaii

ACCEPTING AUTHORITY:

Governor
State of Hawaii

RESPONSIBLE
OFFICIAL:



Russel S. Nagata; Comptroller

9/13/82

Date

PREPARED BY:

Fukunaga and Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

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PREFACE

This document is prepared pursuant to the requirements of Chapter 343, Hawaii Revised Statutes and Environmental Impact Statement Rules and Regulations.

The site selection study conducted to identify potential sites for the new Konawaena Elementary School is contained within this document. The four potential sites identified and evaluated for the new school are assessed with respect to EIS requirements.

SUMMARY

1. Project Description

The Department of Education proposes to relocate the existing Konawaena Elementary School within its current service area and to expand the adjacent Konawaena High and Intermediate School into the elementary school's facilities. The development of the new elementary school will alleviate the overcrowded conditions at the high/intermediate school.

This document discusses potential environmental impacts of four potential school sites which were identified in a site selection study conducted and contained herein. Many potentially adverse environmental impacts were minimized through the site selection process.

2. Project Setting

The Island of Hawaii is the largest and southernmost island of the Hawaiian chain. The service area of the proposed school is located on the west side of the island and covers portions of the North Kona and South Kona districts. The rural communities of Hanalo, Kainaliu, Kealahou, and Captain Cook are found within the service area. These communities are found along Mamalahoa Highway, the only thoroughfare in the area.

3. Potential School Sites

Based on criteria established by the Department of Education, four sites were identified and evaluated in a Site Selection Study contained in this document. These sites are identified as: Site 1 - Kainaliu Mauka; Site 2 - Kainaliu Makai; Site 3 - Kona Hospital Makai; and Site 5 - Konawaena School Makai. These four sites were assessed with respect to EIS requirements.

4. Relationships to Plans, Policies and Controls

Plans, policies and controls as they are applicable to the proposed school are considered in the site evaluation process. Plans and controls affecting the development are the State Land Use Classification, the County General Plan and County Zoning.

5. Probable Impacts

Impacts which can be expected as a result of this project can be classified as having short or long term effects. Short term impacts are those associated with construction activities and may affect traffic, noise levels, air quality and public safety. Long term impacts are associated with school operations and may affect the social

environment, flora, fauna, infrastructure, and traffic of the area.

6. Alternatives Considered

Before recommending the development of a new elementary school, the Department of Education considered several alternatives. These include the reorganization of schools in the educational complex, the development of a new high or intermediate school, or the expansion of the existing school. All alternatives were rejected due to community objection, costs involved or the negative effects it would have on school operations.

7. Relationship of Local Short Term Uses and the Enhancement of Long Term Productivity

In the development of the proposed project, the enhancement of productivity is expected to outweigh the use of the environment. Construction activities will cause disruptions and nuisances near the project site. However, the new school will provide an essential educational service and facility to the area.

8. Irreversible and Irretrievable Commitments of Resources

The labor, utilities and materials required for the development and operation of the school will involve the irreversible and irretrievable commitment of these resources.

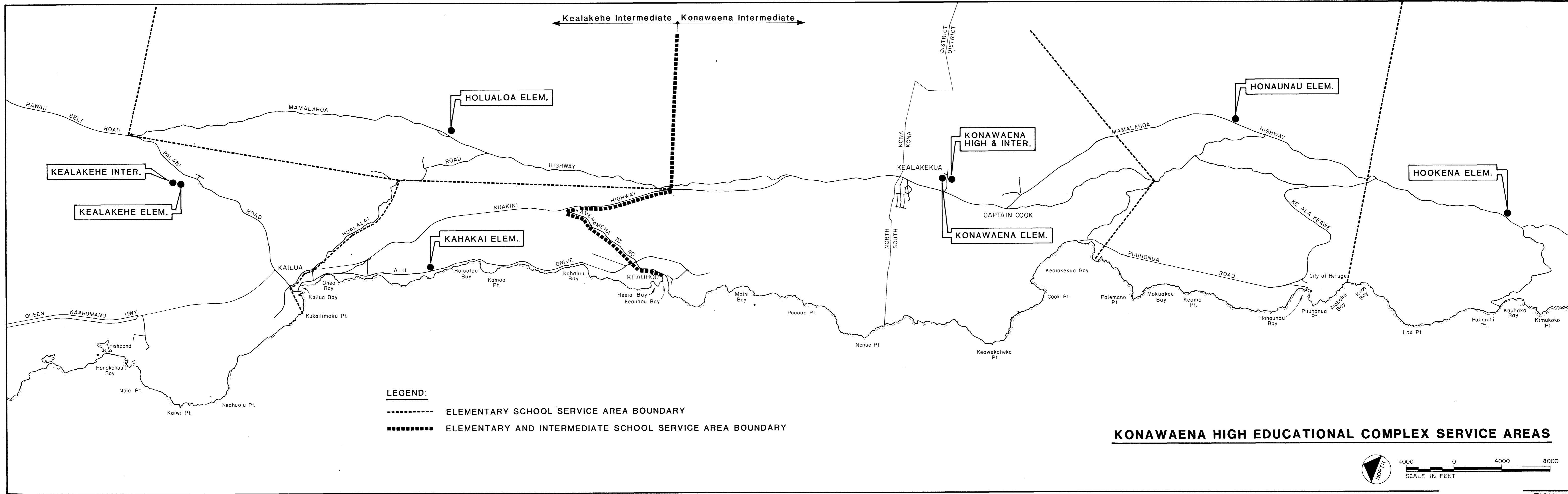
I. PROJECT DESCRIPTION

A. Study Purpose

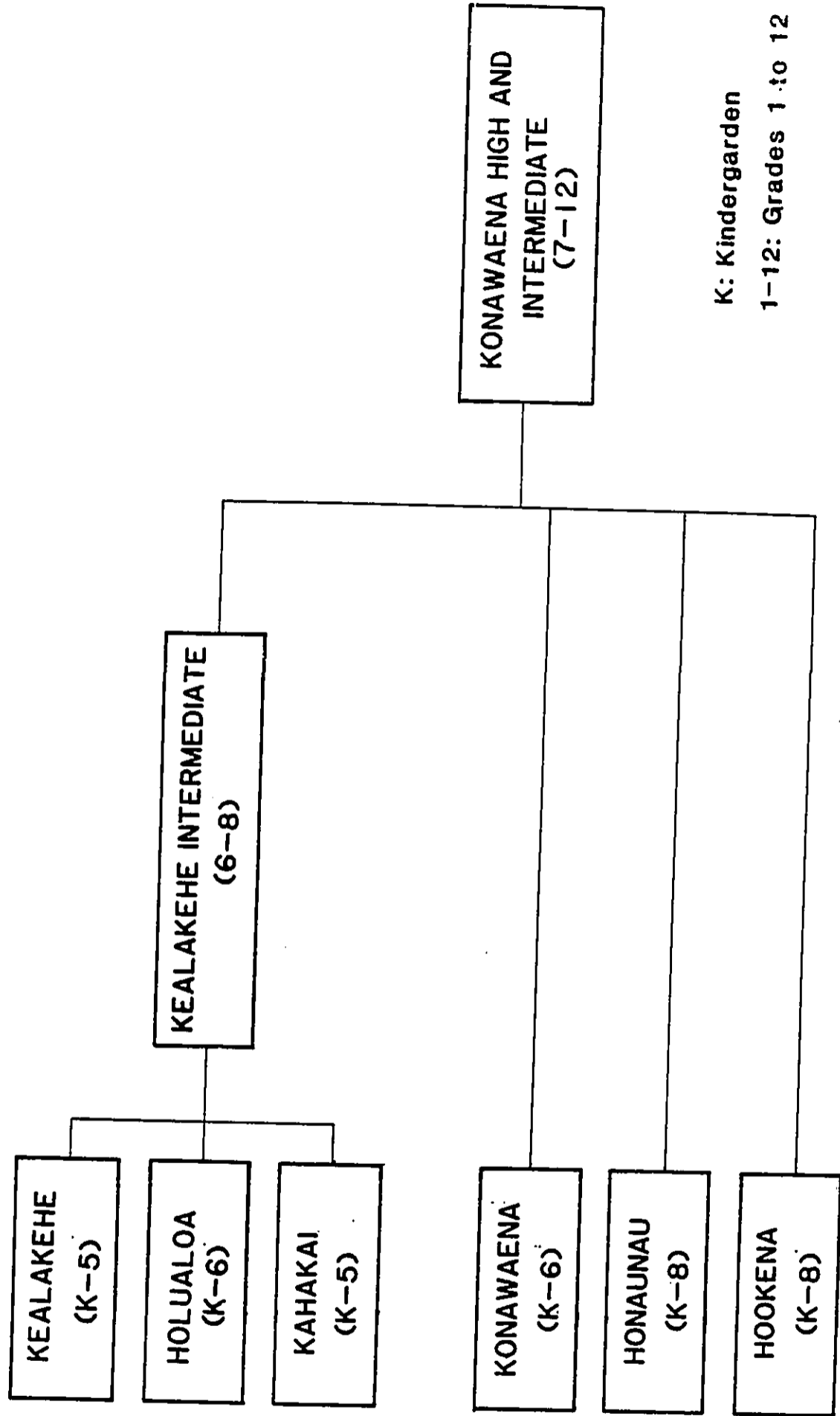
In accordance with the Hawaii State Plan's objective of ensuring the provision of adequate and accessible educational services and facilities, the State Department of Education (DOE) proposes the relocation of the existing Konawaena Elementary School within its current service area and the expansion of the adjacent Konawaena High and Intermediate School into the existing elementary school's facilities. This study represents the State's initial effort in the relocation of the elementary school by: (1) Identifying and evaluating potential school sites and (2) Assessing environmental impacts of the viable school sites in accordance with Chapter 343, Hawaii Revised Statutes.

B. Existing Facilities

The Konawaena High Educational Complex serves an area spanning approximately sixty miles in the North Kona and South Kona districts of the Island of Hawaii. The feeder system includes four elementary (grades K-5 or K-6), two intermediate/elementary (grades K-8), one intermediate (grades 6-8) and one high/intermediate (grades 7-12) schools. See Figures 1 and 2. School service area boundary changes are planned for Kealakehe, Holualoa and Kahakai Elementary Schools effective September 1988 in anticipation of student



KONAWAENA HIGH EDUCATIONAL COMPLEX FEEDER SYSTEM



K: Kindergarten

1-12: Grades 1 to 12

I-3

FIGURE 2

overflow at Kealakehe Elementary caused by new subdivisions in the area.

Konawaena Elementary School and Konawaena High and Intermediate School are adjoining schools sharing the same access road and support facilities, which include a cafeteria/kitchen, library and parking areas. The present combined school site covers 43 acres. The site is on inclined terrain of 10-15 percent, and portions of the land are not usable due to the steepness of the area.

C. Project Need

The combined enrollment of Konawaena Elementary and Konawaena High and Intermediate Schools, as of the 1987-88 school year, was 2158. The projected combined enrollment in 1991 and 2005 are 2219 and 3390 students, respectively. Existing facilities at the combined school site include 30 classrooms for the elementary school and 62 classrooms for the high and intermediate school.

The problem with facility shortages lies in the high and intermediate school's growth. In 1986, the secondary school operated with a shortage of ten classrooms. The projected enrollment predicts a shortage of 23 classrooms in 1991. The shortage is expected to reach 58 classrooms by the year 2005. There will be a problem to locate space to accommodate additional facilities for the 1991 enrollment, and it

would be impossible to accommodate the 2005 projection on the current school site.

D. Proposed Project

The State Department of Education (DOE) proposes to relocate the existing Konawaena Elementary School to a new site and to expand Konawaena High and Intermediate School into the existing elementary area. Based on enrollment projections, the secondary school can use the elementary school facilities without creating surplus classrooms.

The relocation of the elementary school will relieve the anticipated secondary school's classroom shortage without sacrificing quality programs. The school relocation will not create surplus support facilities at the present school site because the elementary campus does not have separate library and cafeteria facilities. The relocation will also provide relief of heavy vehicular traffic at the present combined school site. The feeder system of students graduating from elementary to intermediate to high school in the Konawaena High Educational Complex will not change.

E. Alternatives Considered

Before recommending the relocation of Konawaena Elementary School to a new site, the Department of Education considered the following alternatives:

1. Convert Honaunau (presently K-8) to an intermediate school (6-8), reorganize Konawaena High to 9-12

and Konawaena Elementary to K-5. The Honaunau community strongly rejected this alternative because they did not want to lose their community elementary school. This alternative was also rejected because: (a) the intermediate school would be very far from the center of the student population, thus increasing busing costs; (b) the present intermediate school has far better special facilities and it would be very costly to duplicate them; and (c) the total number of intermediate students at Konawaena and Honaunau does not meet the minimum requirements for a new school.

2. Build a second high school in North Kona. This option is strongly supported by the North Kona community. However, this alternative was rejected because: (a) the construction of a new high school would greatly increase the need of CIP funds (approximately \$30 million); and (b) a second high school would reduce the enrollment of the existing high school, creating a significant number of surplus classrooms and negatively affecting the present high school's program offering.
3. Expand the campus for the secondary school. This option would require the acquisition of abutting land. This alternative was rejected because: (a) it would worsen the already bad traffic situation at the student drop off area shared by the elementary and secondary schools, and (b) a greatly

expanded water pumping system and sewerage system would be required to serve the enlarged school site.

4. Build a new intermediate school in South Kona, combining the intermediate enrollment of Konawaena, Honaunau and Hookena Schools. This alternative was rejected because: (a) enrollment in grades 7-8 at the three schools is not large enough to establish a new school by DOE guidelines; and (b) the result in reducing the crowded conditions on the Konawaena campus would not be significant.

F. School Development Requirements

The new Konawaena Elementary School will be developed in accordance with Department of Education Specifications and Standards. The DOE has set the following requirements for the proposed school:

- Type of School: Elementary, Grades K-6
- Scheduled Opening Date: September, 1991
- Acreage: 6-8 acres (usable)
- Design Enrollment: 830 students
- Peak Enrollment: 930 students
- Enrollment Projected at School Opening: 300 students

Proposed school facilities will include the following:

- Thirty three (33) permanent regular classrooms
- Three (3) permanent special education classrooms
- Four (4) portable classrooms with space and

infrastructure for an additional four to
accommodate peak enrollment

- Administration building
- Library
- Dining Room/Kitchen
- Parking lot
- Playcourt

II. PROJECT SETTING

A. Regional Overview

The Island of Hawaii is the largest and southernmost island in the State of Hawaii. It is 93 miles long and 76 miles wide with a land area of 2,582,528 acres. The island comprises Hawaii County and contains 62 percent of the total land area in the State. Hawaii is commonly referred to as the Big Island.

The City of Hilo, located on the east side of the island, is the seat of the County Government. In 1980, Hilo had 35,269 of the total 92,053 resident population of the island.

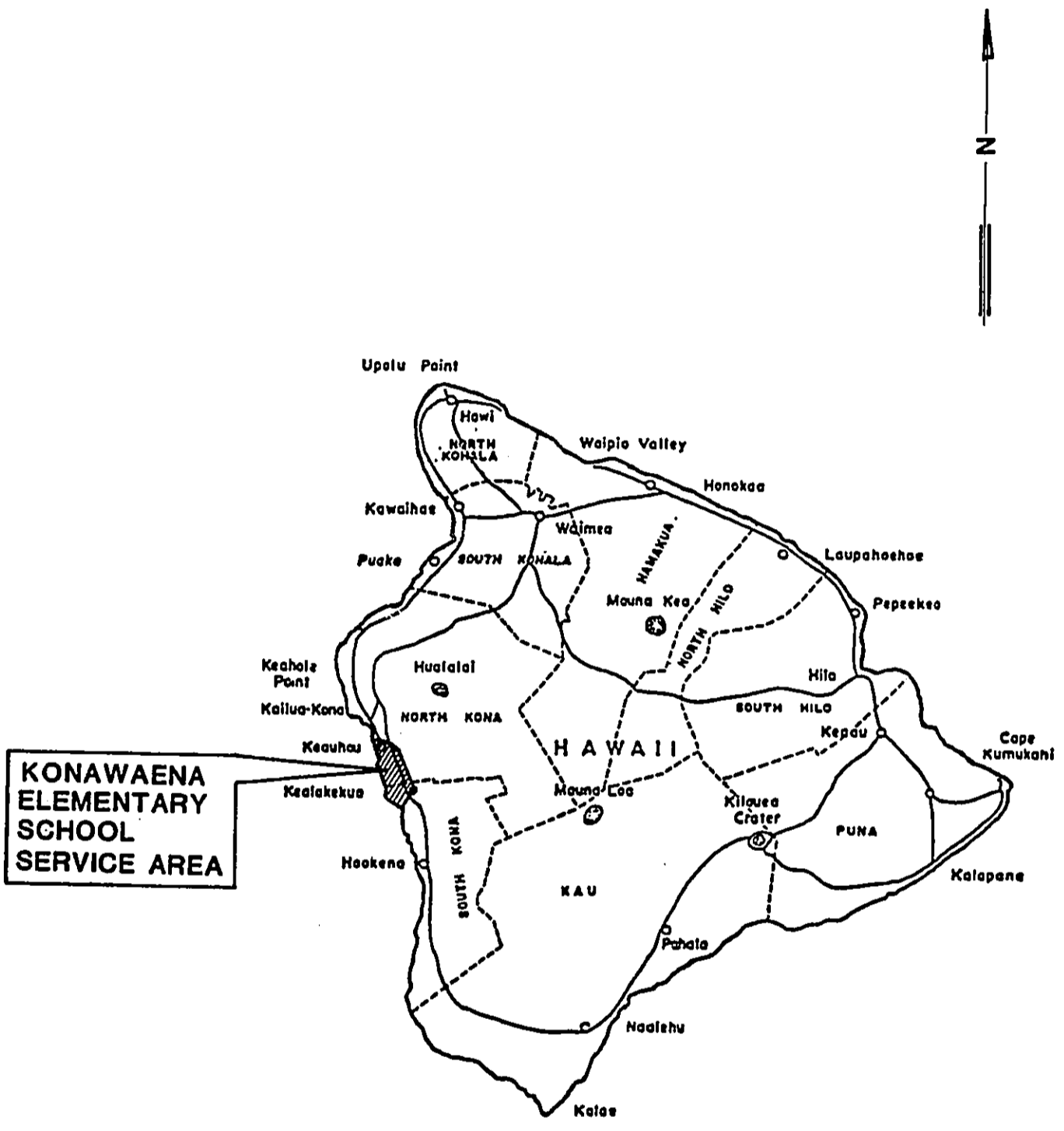
Tourism, sugar and diversified crops are the principal industries of the island of Hawaii. Extensive canefields are found along the north and northeast coast. Diversified crops include coffee, macadamia nuts, oranges, papayas and vegetables. The visitor industry centers in the Kailua-Kona area located on the western coast of the island.

The school service area is situated south of Kailua. See Figure 3. The rural communities of Honalo, Kainaliu, Kealakekua and Captain Cook are found within the service area.

B. Service Area Environment

1. Existing Land Use

Existing land use within the school service area



LOCATION MAP

is predominantly residential and agricultural. Diversified crops of coffee, macadamia nuts and oranges are grown in the area. Kona Hospital, a radio station and the Kona Branch of the University of Hawaii Agricultural Experiment Station are operated within the service area.

2. Climate

The climate in the Kailua-Kona area is influenced more by local heating and cooling of the ground than by the effect of tradewinds prevalent in the rest of the State. Land and sea breezes predominate as normal tradewinds are blocked by the mountain masses of Mauna Kea, Mauna Loa and Hualalai. During the day when the land is warmer than the ocean, the pressure gradient created causes the wind to blow from the ocean toward the land, forming showers that tend to fall in the late afternoon and evening. At night, the reverse occurs as the land cools.

The average annual rainfall in the service area varies from 50 inches at the shore to 75 inches at the existing school site. Rainfall is greater in the summer months and less in the winter months, a pattern unique in the State. This pattern is largely due to the greater intensity of the onshore breeze during the summer. Temperatures average about 75 degrees F during the day.

3. Flora

There are no known endangered species of flora within the project area. The types of existing flora found in the area are exotics or introduced plants commonly found throughout the islands. The overgrowth commonly consists of kiawe, haole koa, Christmas berry, lantana, guava, Spanish clover and various grasses.

The loss of vegetation by the clearing and grading of the school site will be offset by the grassing and landscaping of the campus.

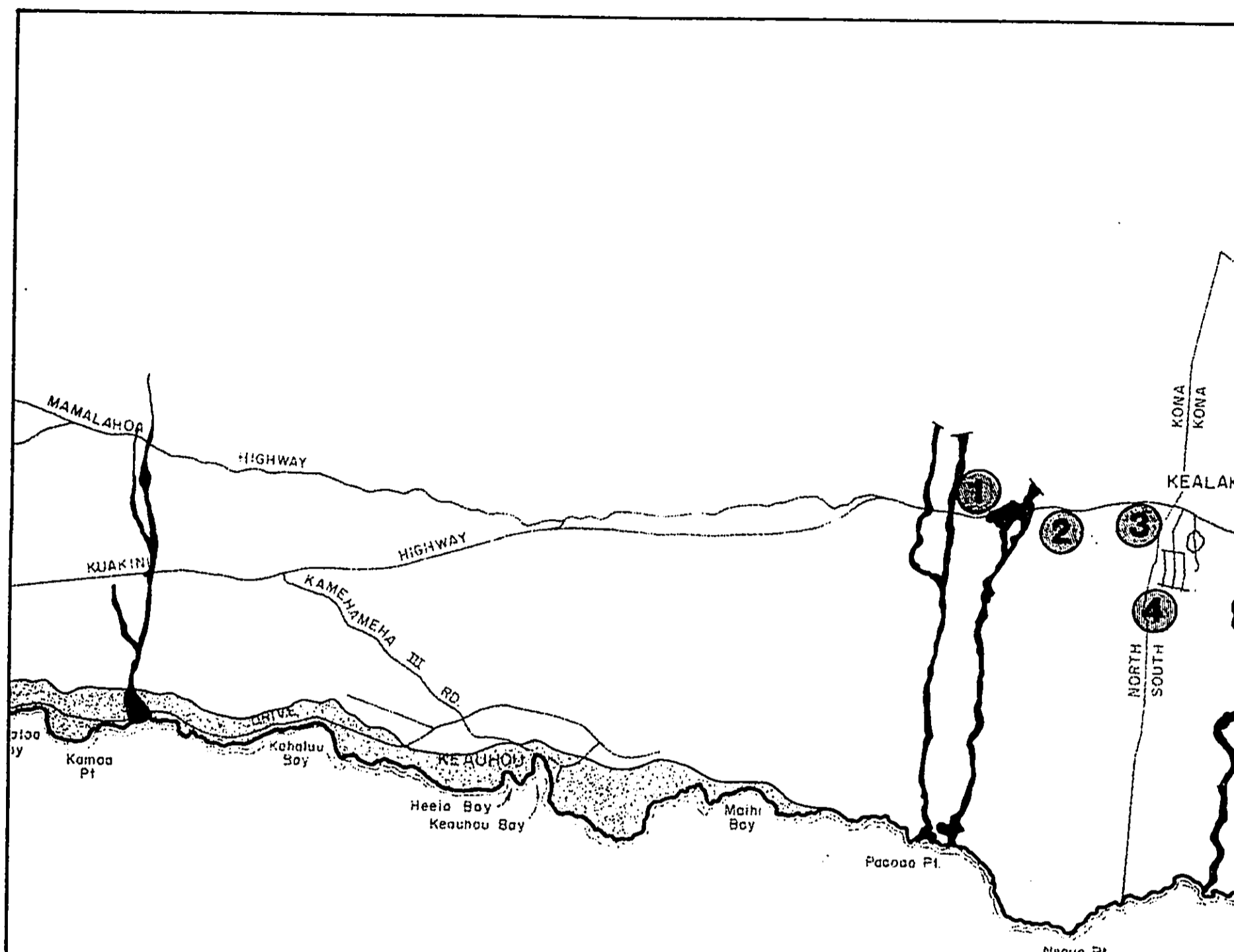
4. Fauna

There are no known endangered species of fauna within the project service area. The fauna in the area consists of species common throughout the Kona District and include rats, mice and mongoose. Birds found in the area include the mynah, dove and sparrow.



5. Flood/Tsunami Hazard

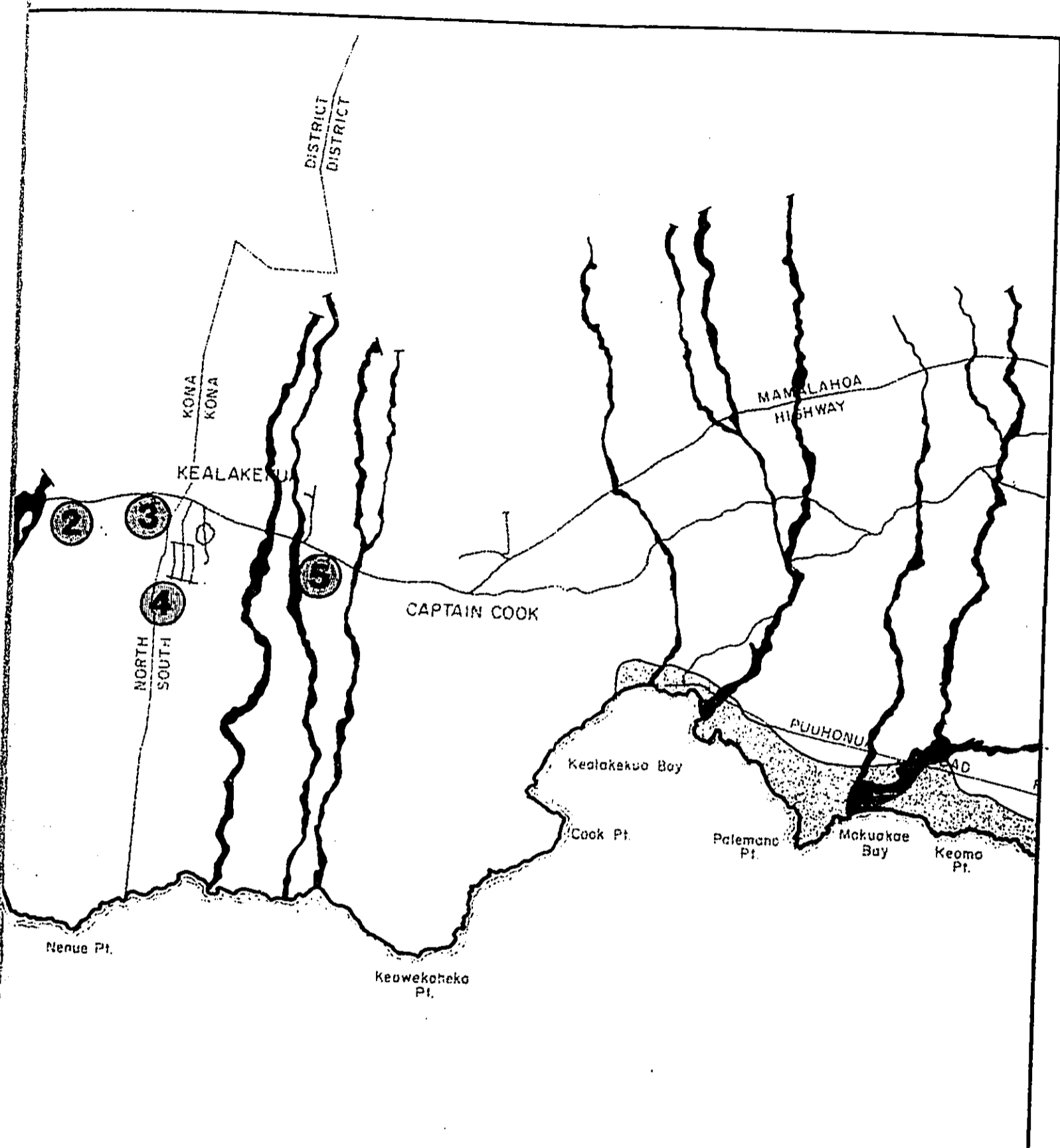
The entire Kona area is characterized by many underdeveloped and poorly defined drainageways, all subject to potential flooding. See Figure 4. Most drainageways are intermittent, going dry during the winter months.

Flood problems in the area are due to the steep topography and youthful geology. Most of the identified drainageways are underdeveloped and



LEGEND:

-  TSUNAMI INUNDATION AREA
-  FLOOD HAZARD AREA



TSUNAMI AND FLOOD HAZARD AREAS



shallow and thus cannot carry floodwaters within its banks during intense storms. Since the drainageways are intermittent, accumulated rocks and debris can clog them to alter the streamflow and define a new floodprone area.

The majority of the service area is designated Zone X (unshaded) in the Federal Flood Insurance Rate Map (FIRM). This zone is described as being an area outside of the 500-year flood plain.

Tsunami inundation areas are located in the low-lying areas along the shoreline.

The Drainage Master Plan for the County of Hawaii recommends that all coastal areas of less than 50 feet above mean sea level be considered susceptible to tsunami inundation. The same report notes that the threat of damages and loss of life in urban coastal areas is more severe from tsunami than from run-off or surface flooding.

6. Geology

The island of Hawaii is the largest and youngest island in the Hawaiian group and was formed by the eruptions of five volcanoes - Mauna Kea, Mauna Loa, Kohala, Kilauea and Hualalai. The project service area is situated on the western slope of Mauna Loa, in an area classified as a prehistoric lava flow. Lava flows from Mauna Loa are olivine basalts and are rarely more than 25 feet thick. The slope in

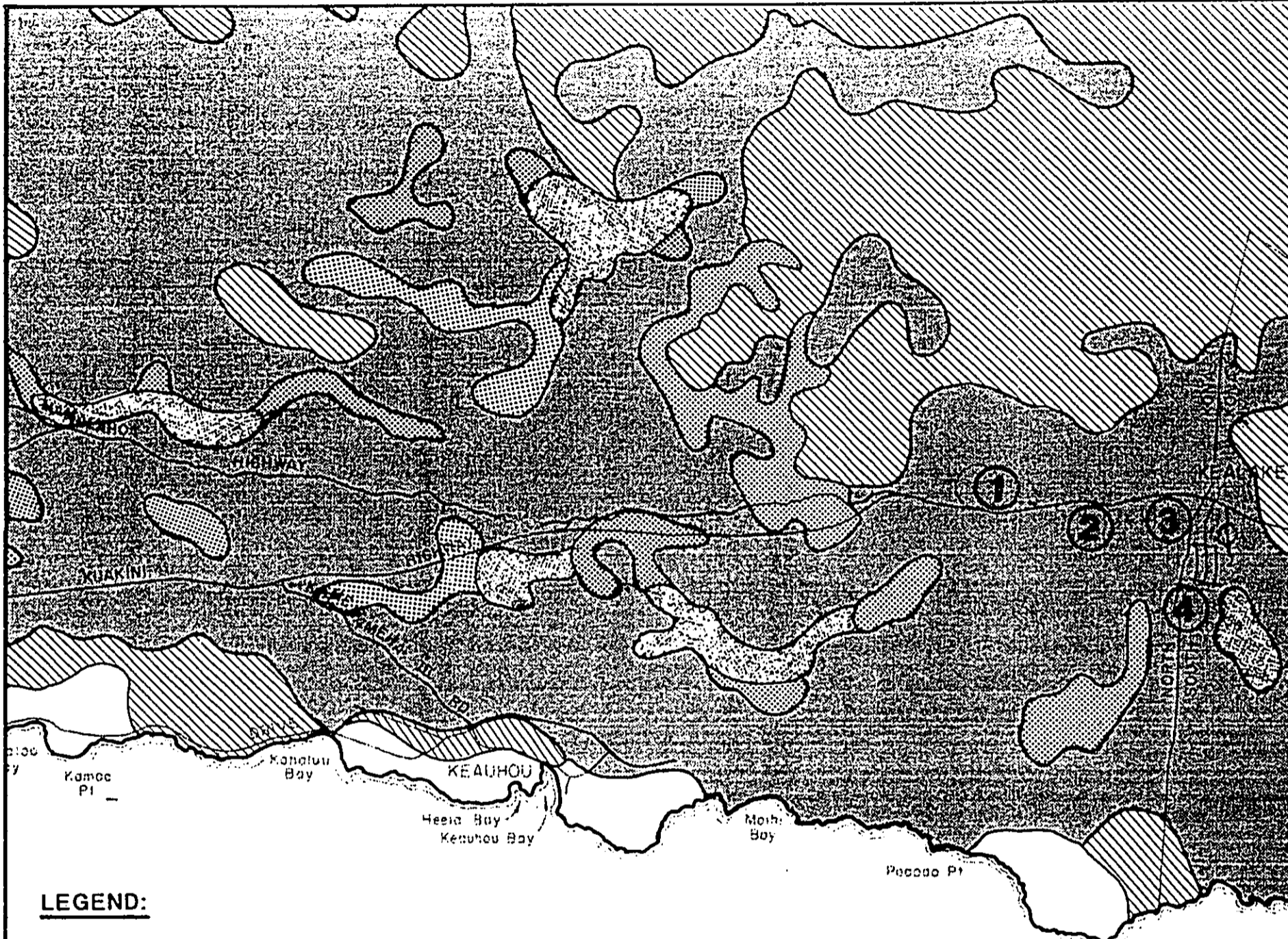
the service area is generally between 5 to 15 percent. See Figure 5.

7. Soils






According to the Soil Conservation Service (SCS), soils in the project service area are in the Puu Pa-Pakini-Waiaha association or the Kukaiau-Ainakea-Paauhau association. The Puu Pa-Pakini-Waiaha association is described as being shallow to deep, well-drained, consisting of moderately coarse textures to moderately fine textured soil that formed in volcanic ash and is well suited for use as pasture. The Kukaiau-Ainakea-Paauhau association is described as being deep to moderately deep, well drained, consisting of moderately fine textured soils that formed in volcanic ash and basic igneous rock.

The following individual descriptions are of soils comprising the associations and are prevalent in the project service area. The descriptions are taken from the SCS Soil Survey of the Island of Hawaii. See Figure 6.

HRD - Honaunau extremely rocky silty clay loam, 6-20% slope. Surface layer of very dark brown silt loam about 6 inches thick; subsoil layer of dark brown to dark reddish brown silt loam; rock outcrops occupy 25 to 50 percent of the surface; pahoehoe bedrock



LEGEND:

-  0-5%
-  5-10%
-  10-15%
-  15-20%
-  20+%

KAHOOLAWE

KAHOOLAWE

KUAKINI

KUAKINI

Kamooe Pt.

Kaunaloa Bay

KEAUHOU

Heaia Bay
Keanohou Bay

Moili Bay

Pecooe Pt.

Nanue Pt.

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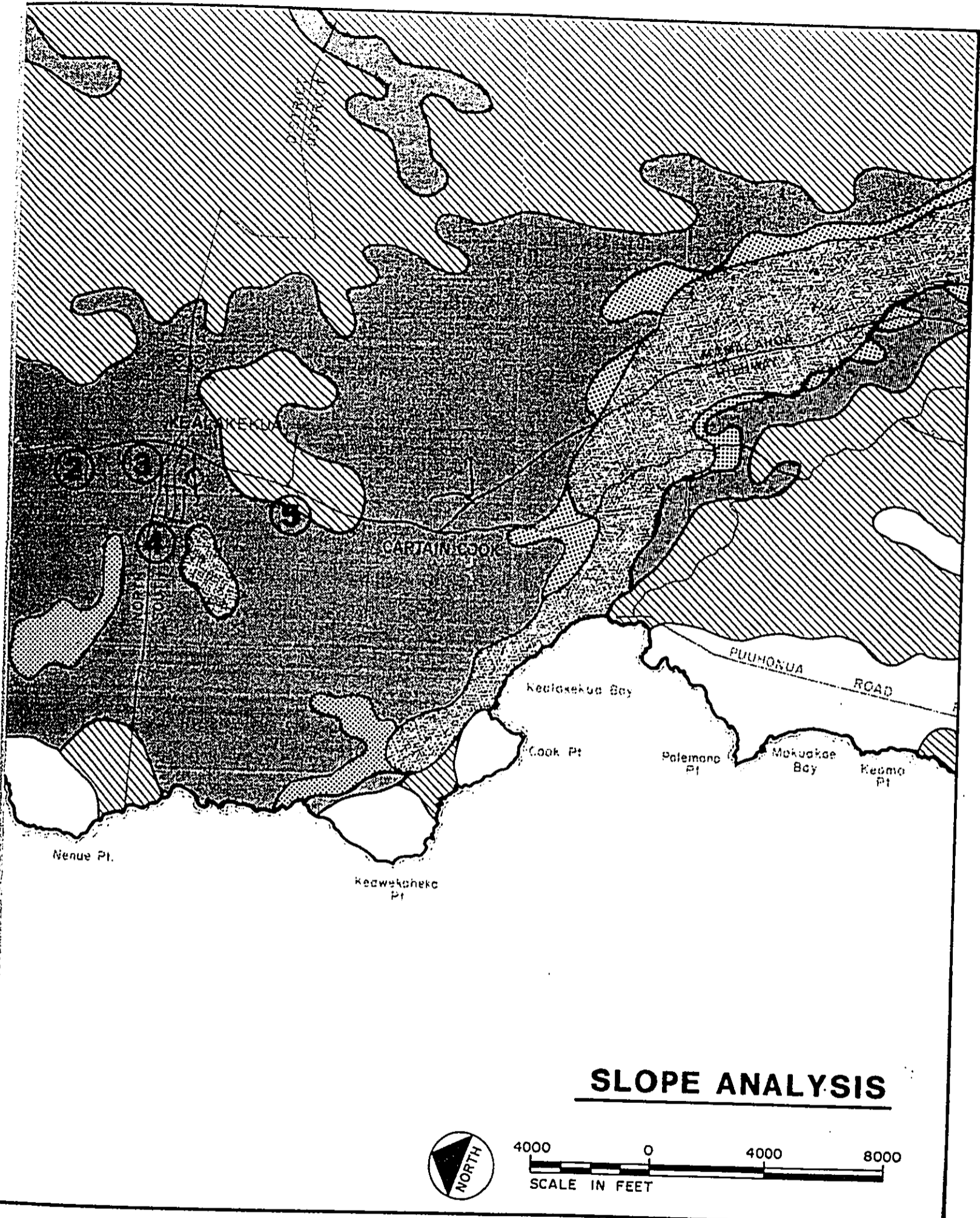
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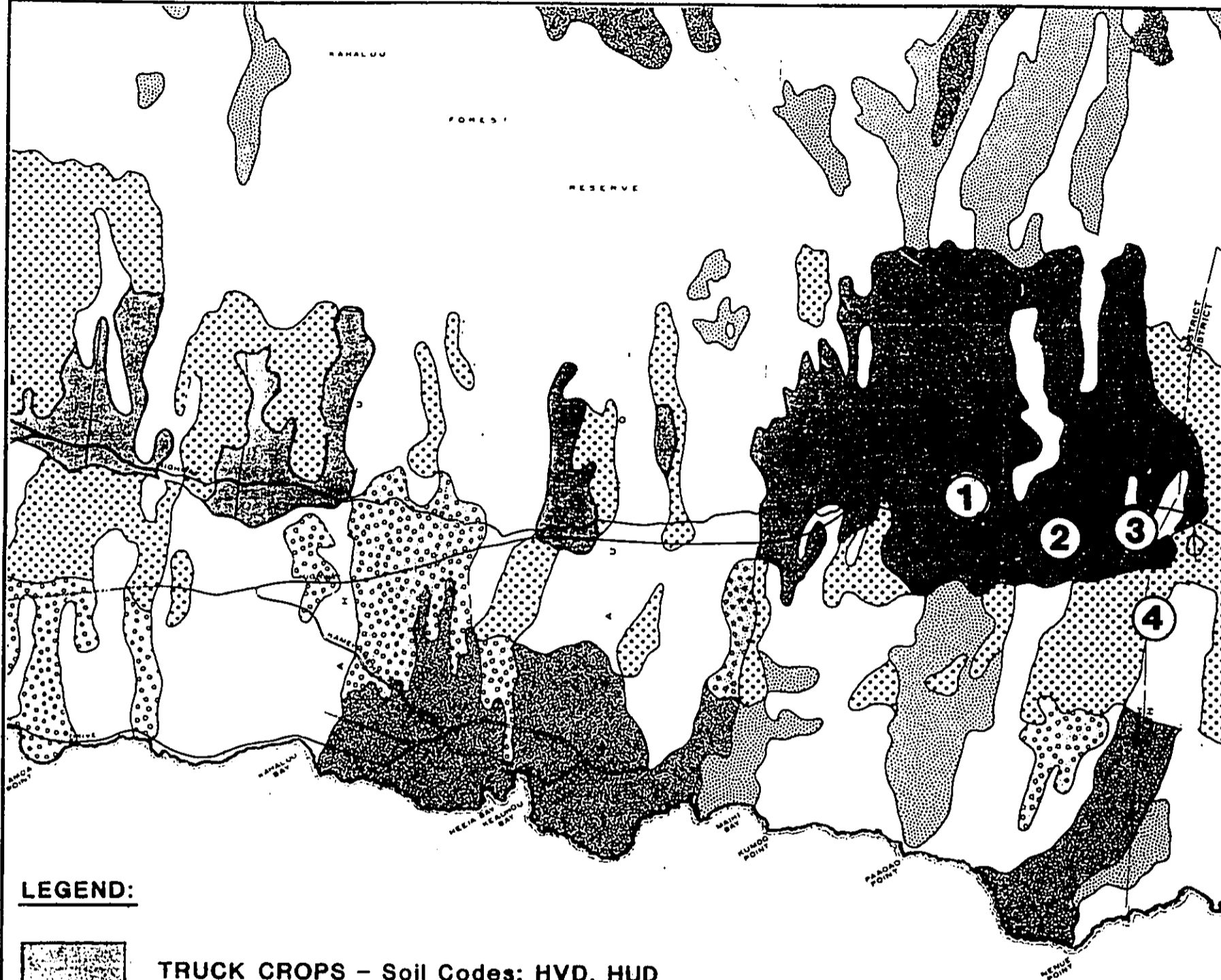
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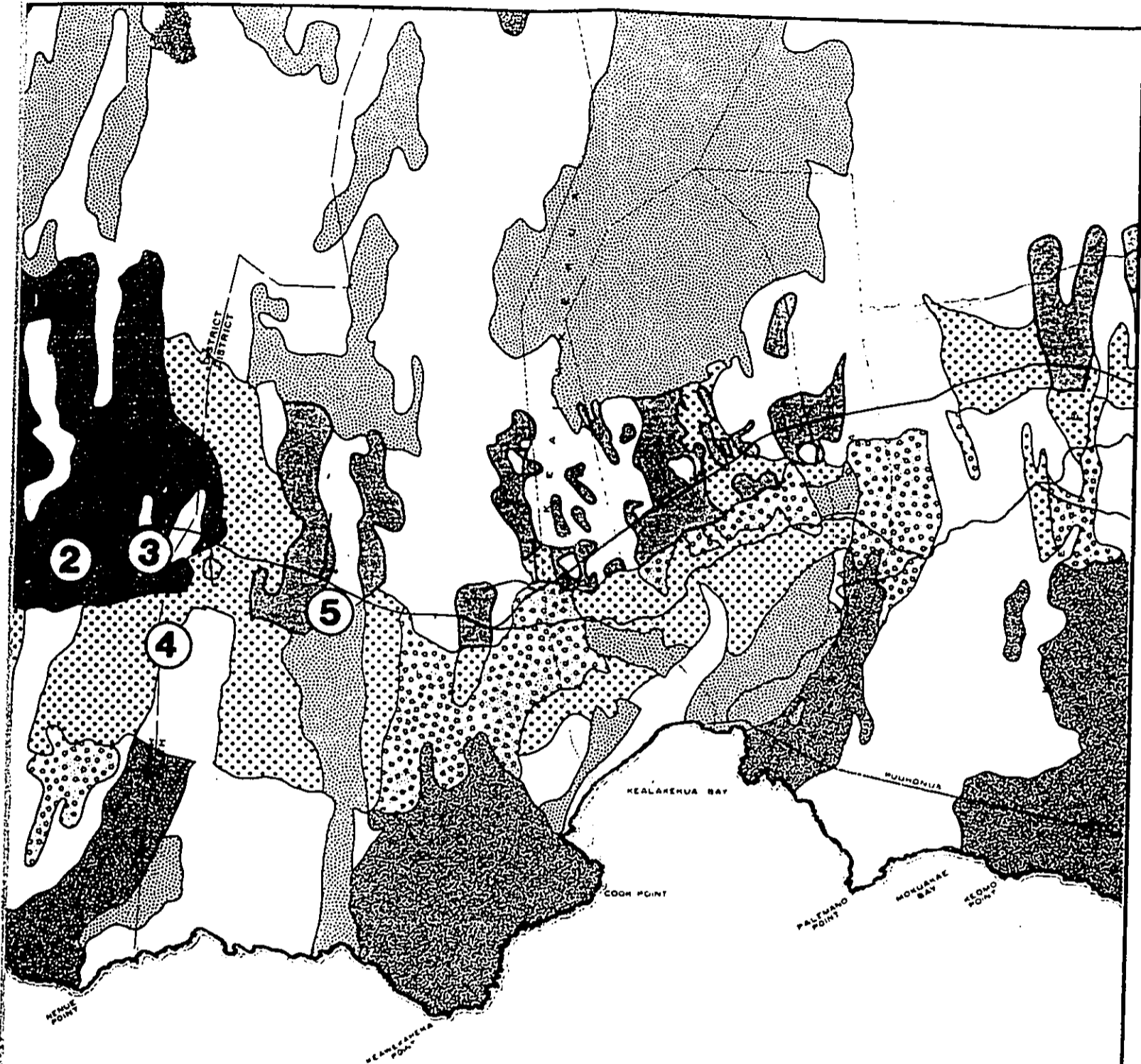
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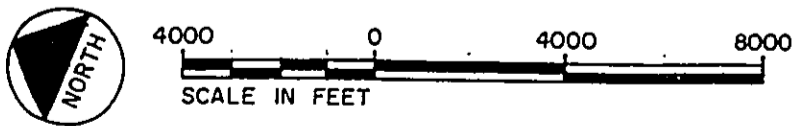


LEGEND:

- 
TRUCK CROPS - Soil Codes: HVD, HUD
- 
LIMITED TRUCK CROPS - Soil Codes: KDD
- 
ORCHARDS - Soil Codes: rKYD, KEC
- 
LIMITED ORCHARDS - Soil Codes: rKED
- 
PASTURE - Soil Codes: WHC, HRD, rPXE, rPYD
- 
LAVA - Soil Codes: rLV, rLW



SOIL ANALYSIS



at a depth of about 26 inches; permeability is rapid, runoff is slow; and erosion hazard is slight; capability subclass VIIs.

HVD - Honuaulu extremely stony silty clay loam, 12-20% slope. Surface layer of very dark brown silty clay loam about 9 inches thick; subsoil layer of dark brown cobbly and stony silty clay loam; stones cover 3-15% of the surface; fragmental Aa lava at a depth of about 36 inches; permeability is rapid, runoff is slow and erosion hazard is slight; capability subclass VIIs.

KDD - Kainaliu very stony silty clay loam, 12-20% slope. Surface layer of very dark brown stony silty clay loam about 10 inches thick; subsoil layer of dark brown stony silty clay loam and silt loam; fragmental Aa lava at a depth of about 26 inches; areas of this soil follow the pattern of the lava flows and are long and narrow; permeability is rapid, runoff is slow and erosion hazard is slight; capability subclass VIIs.

rPXE - Puna extremely stony muck, 3-25% slope. Surface layer of very dark brown extremely stony muck about 5 inches thick; no subsoil layer; fragmental Aa lava at a depth of about 5 inches; permeability is rapid,

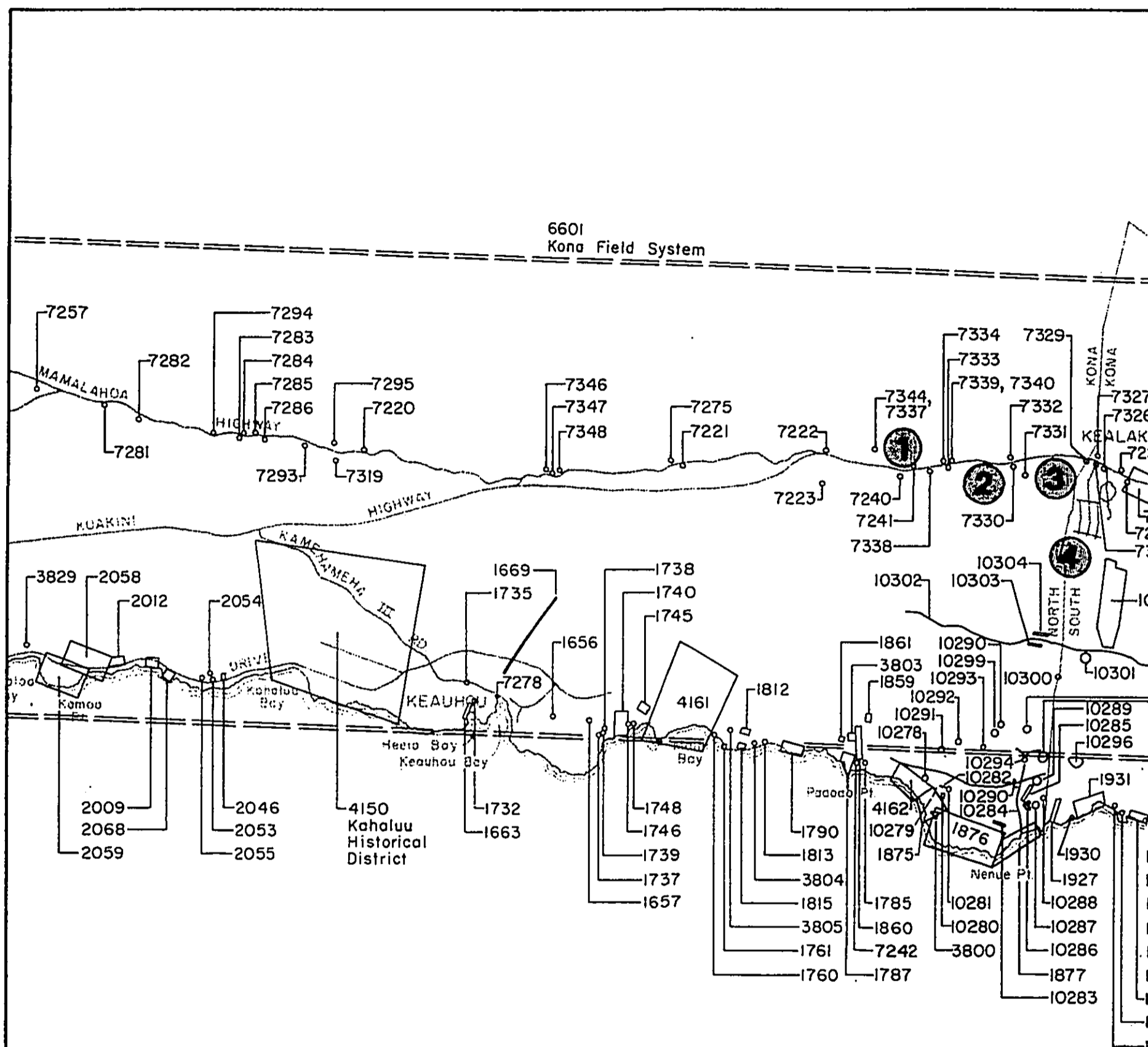
runoff is slow and erosion hazard is slight; capability subclass VIIs.

rPYD- Punaluu extremely rocky peat, 6-20% slope. Surface layer of black peat about 4 inches thick; no subsoil layer; pahoehoe lava bedrock at a depth of about 4 inches; peat is rapidly permeable; pahoehoe lava is very slowly permeable, although water runs rapidly through cracks, runoff is slow and erosion hazard is slight; capability subclass VIIs.

Capability subclass VI soils have severe limitations due to its shallowness or stoniness that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife. Capability subclass VII soils have very severe limitations due to shallowness or stoniness that make them unsuited to cultivation and restricts their use largely to range or pasture, woodland or wildlife.

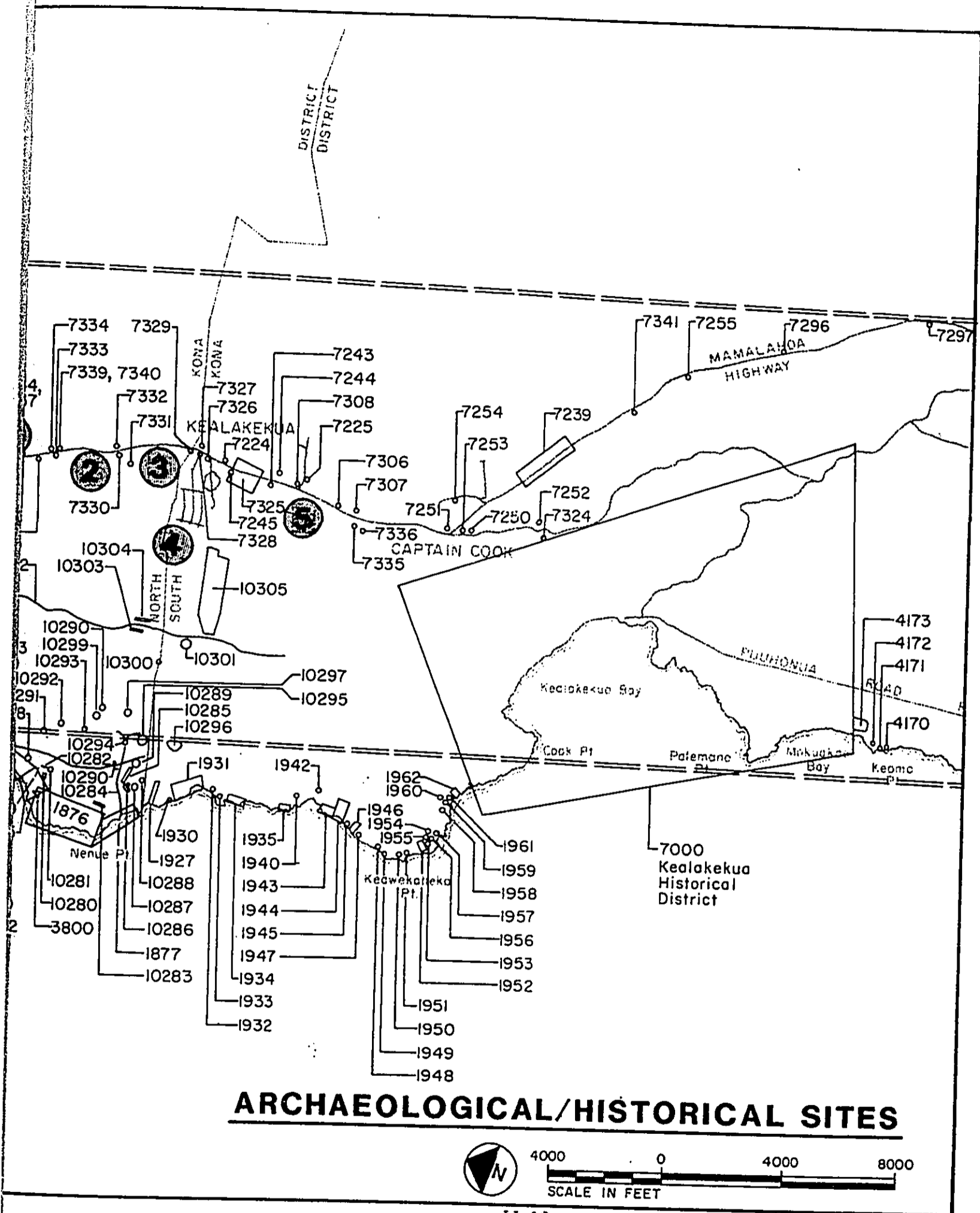
8. Archaeological/Historic Sites

A number of archaeological and historic sites in the project service area have been inventoried by the Department of Land and Natural Resources, Office of Historic Sites. See Figure 7. Most of the sites occur along the shoreline. One site, the Kealakekua Historical District (7000), is listed on the State

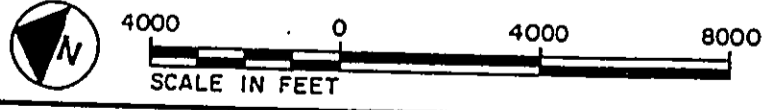


NOTE:

Numbers indicate archaeological/historical sites and corresponds with the numbering and filing system of the Dept. of Land and Natural Resources, Office of Historic Sites.



ARCHAEOLOGICAL/HISTORICAL SITES



and National Register of Historic Places. The Kona Field System (6601), which is eligible for the National Register, encompasses an area 3 miles by 18 miles in size. Most of the project service area is located within the Kona Field System, which covers much of the Kona Coast.

9. Scenic Characteristics

The service area, as well as much of the Kona Coast is characterized by a dramatic shoreline, mountain backdrop and gentle to steeply sloping terrain giving way to scenic vistas. The changing vegetation zones, beginning with the shoreline environment, gives way to barren lands then to increasingly diverse vegetation until the mauka forests and barren lands above. The diverse landscape is set-off by the deep blues of the surrounding ocean.

C. Socioeconomic Characteristics

1. Population

Population growth in the Kona districts is directly related to the economic growth of the area. The North Kona district, with its expanding visitor industry, experienced a population increase between 1980 and 1985 of 37.9 percent, to a total of 18,962 residents. In the South Kona district, where agriculture is the primary economic activity, the population increased by 17.3 percent, to a total of

6,937 between 1980 and 1985.

The major population centers located in the school service area are Captain Cook, Kainaliu and Kealahou, with resident populations in 1980 of 2008, 512, and 1033, respectively.

2. Employment and Income

In 1984, the per capita personal income in Hawaii County was \$9,998, which was below the state average of \$13,028. The unemployment rate for the County in 1984 was 7.7 percent.

Tourism has expanded tremendously in North Kona, primarily in the Kailua Village area. Currently, there are about 4,750 visitor units in the district. Other industries in the district include agriculture (coffee, bananas, avocados, macadamia nuts, and vegetables), timber, fishing, quarrying and construction.

South Kona's primary economic activity is agriculture, with coffee growing and processing being the mainstay. Macadamia nuts are also an important crop. Also grown in the district are bananas, oranges, tangerines, avocados and tomatoes. Cattle ranching is also one of the prominent industries of South Kona. Unlike the North Kona area, South Kona has limited accommodations for visitors.

As of 1985, Hawaii County had approximately 2100

acres planted with coffee and 18,200 acres with macadamia nuts. The production of these crops had an estimated value of \$4.7 million and \$30 million, respectively. Also as of 1985, the County had 400 livestock operations (beef and dairy) on approximately 788,000 acres with livestock and beef sales of \$38.69 million.

3. Public Services

A police facility, serving the North and South Kona districts, is headquartered in Captain Cook. The police force consists of 60 men. There is also a police substation located in Kailua-Kona.

A 33-man, 24 hour fire facility is located in Kailua with air, land and sea rescue capabilities. An 18-man, 24 hour fire fighting facility is located in Captain Cook. Volunteer stations are located at Hualalai Ranch and the Kona Village Resort.

County government offices are located in Captain Cook and Kailua. The Court is presently at the site of the old Kona Hospital. Public Works, the Deputy Managing Director, the Planning Department, Licensing and Liquor Control have offices in Kailua. The state operates baseyards in Kaloko and Honaunau, while the County has a baseyard in Captain Cook.

Postal facilities are located in Captain Cook, Holualoa, Honaunau, Kailua and Kealahou.

The present Kona Hospital has medical/surgical,

obstetrical and skilled nursing facilities. Services include intensive and critical care, skilled nursing and intermediate care, orthopedics and emergency care. Ambulance service is provided by the fire department in Captain Cook.

A solid waste disposal site, utilizing open pit dumping, is located in Kailua/Kealakehe and will most likely be moved to Puuanahulu. Solid waste transfer stations are located in Kailua, Keauhou, Napoopoo, Waiea, Keei and Milolii, with additional stations planned for Captain Cook and Honaunau.

Recreational facilities in the service area include the County's Greenwell Park in Captain Cook, with tennis and basketball courts and a lighted playfield; Yano Memorial Hall in Captain Cook, with multipurpose facilities; and Kona Scenic Park in Kealakekua, with a baseball field. The County maintains the swimming pool at the Konawaena School. Limited facilities are available at County beach parks.

The major traffic arteries serving the Kona districts are the Hawaii Belt Highway (Mamalahoa Highway) connecting Kona with this districts of South Kohala and Kau, the Queen Kaahumanu Highway connecting Kailua to Kawaihae, and the Kuakini Highway connecting Kailua to the mauka Keauhou area. There is also a network of private subdivision roads with steep grades and limited sight distances.

D. Service Area Infrastructure

1. Water System

The Department of Water Supply operates and maintains the water systems of the County of Hawaii. The Kona system can be divided into the North Kona and South Kona systems. These systems are interconnected, allowing for the transport of water from one system to the other. This is done only during emergencies and at a very limited rate.

The North Kona system is supplied by four wells and one shaft at Kahaluu and one well at Holualoa. The South Kona system is supplied by three wells at Keei. See Figure 8.

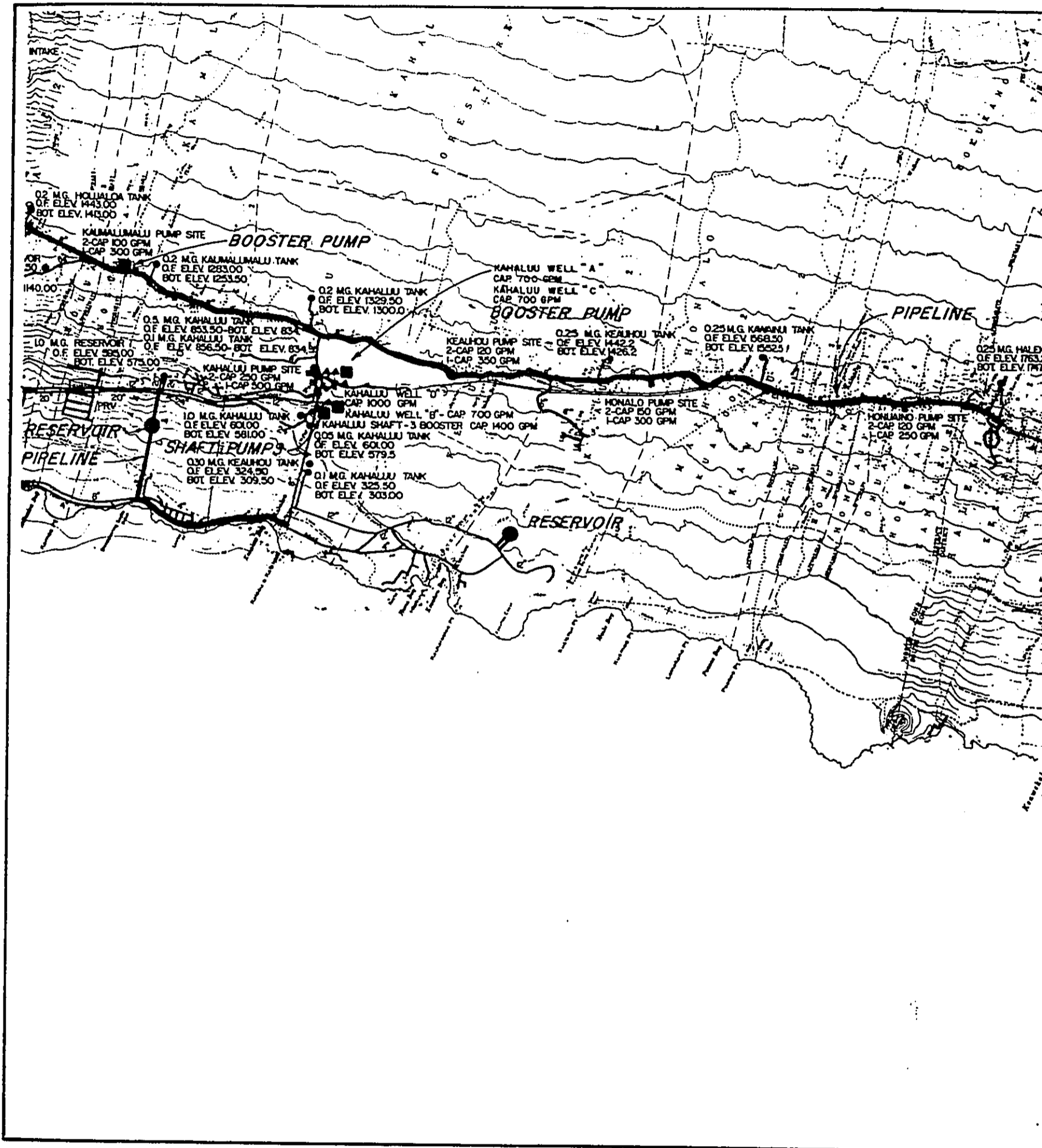
The school service area is served by an 8-inch water line within the North Kona system running along Mamalahoa Highway. From the Kahaluu wells, water is pumped through a series of booster stations to the area and to several storage tanks.

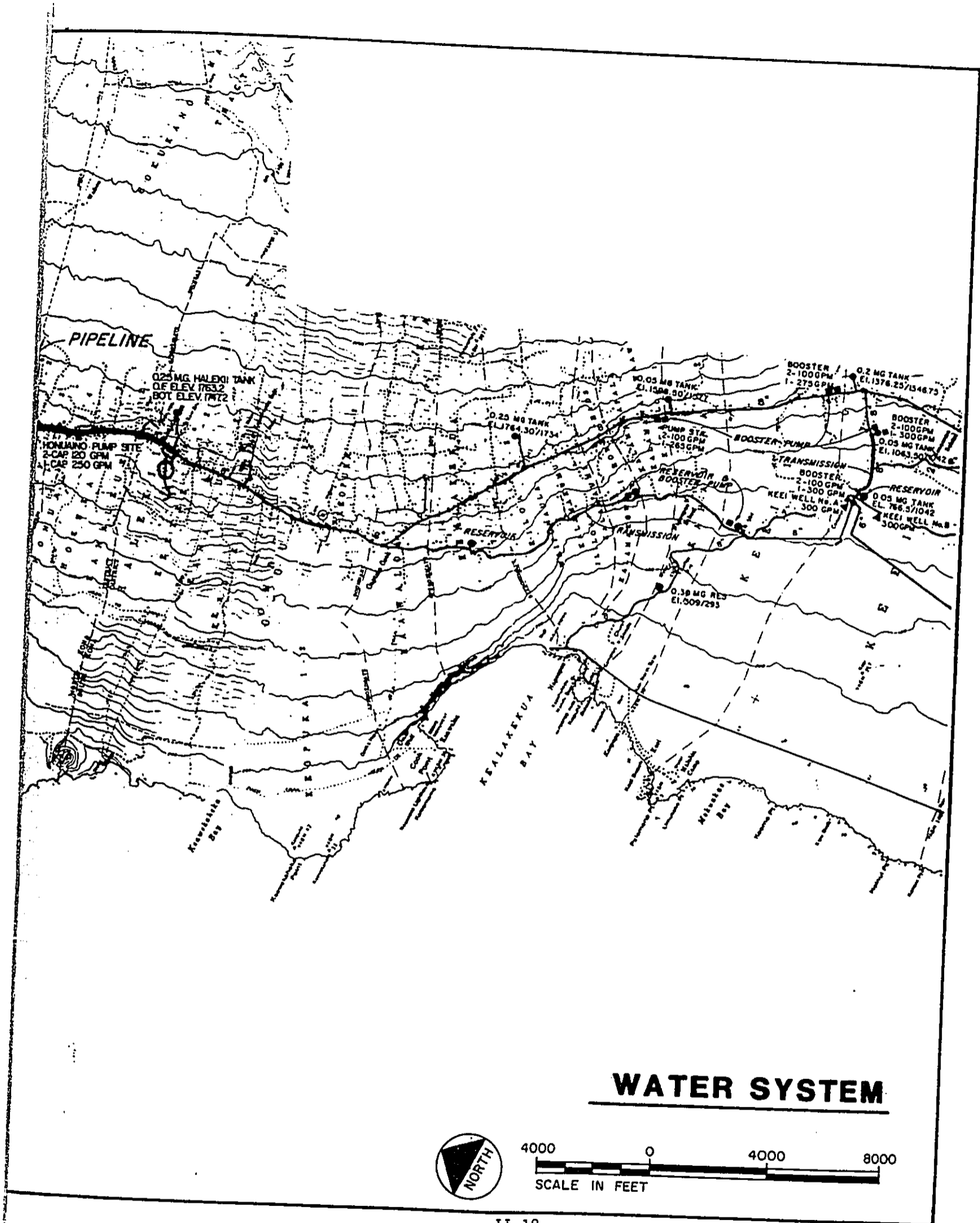
Due to the system's limited transmission capacity, the school site will need a water storage tank and pump system for adequate fire flow and domestic use.

Estimated water demands for the school, based on peak enrollment, are 60 gpm at maximum daily demand and 200 gpm at peak hour flow.

2. Sewer System

There is no municipal sewerage system serving





the school service area. Cesspools are the primary on-site treatment system in the area. Several small on-site package plants are operated in the area, discharging effluent into cesspools. Because the soils in the Kona area are highly permeable, cesspools are successfully operated.

The State Department of Health has designated an Underground Injection Control or "no-pass" line. All sewer discharge greater than 1,000 gallons per day in sites at elevations above the "no-pass" line are prohibited from underground injection (i.e. cesspools). Thus, the school site would require an alternate means of disposal, such as a leaching field. Also, the sewage system must meet all applicable requirements of Act 282, SLH 1985 as amended by Act 302, SLH 1986. Because wastewater flows greater than 800 gallons per day are anticipated, a wastewater treatment works must be used instead of an individual wastewater system. The wastewater generation at peak enrollment is estimated at approximately 20,000 gallons per day.

3. Electrical, Gas and Telephone Service

Electricity for the County is supplied by the Hawaii Electric Light Company, Inc. (HELCO). Three levels of transmission voltages deliver energy throughout the island. There are three 69KV cross-island transmission lines; five 34.5KV lines which

serve smaller communities that are a distance from the 69KV lines; and three 13.8KV tie-lines in the Hilo area. The distribution system basically consists of overhead pole lines, although some of the newer subdivisions and developments have installed underground systems. Distribution substations, which transform transmission voltages to distribution voltages, are located island-wide in proximity to communities and developments.

Propane gas is widely used in the County. In some rural areas, the gas is the only source of power. Rural communities utilize liquid propane gas which is stored in refillable tanks. A propane gas substation is located in Kealahou.

Telephone service for the County, like the rest of the state, is provided by the Hawaiian Telephone Company.

E. Land Use Plans, Policies and Controls

1. Hawaii State Plan

The Hawaii State Plan serves as a guide for the future long-range development of the State by identifying goals, policies and priorities. The proposed project is consistent with the following state objective and policy:

"Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to

fulfill their needs, responsibilities, and aspirations. To achieve the education objective, it shall be the policy of this state to: Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs."

2. State Education Functional Plan

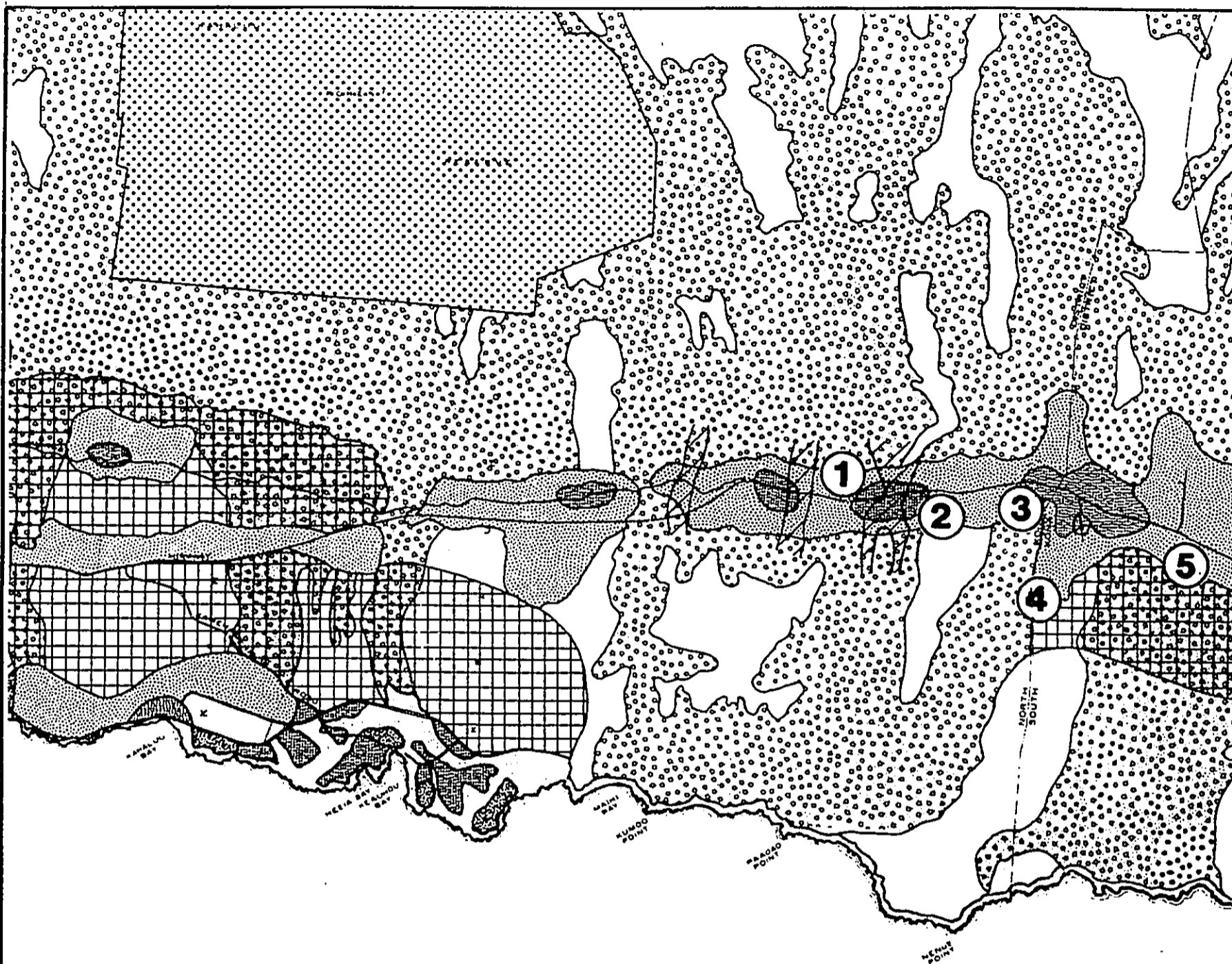
The major purpose of the State Education Functional Plan is to help implement the Hawaii State Plan. This functional plan was prepared in compliance with Chapter 226, Hawaii Revised Statutes by the State Department of Education and advances priority directions for the DOE and improves the quality of public education in Hawaii.

The proposed project is consistent with the following State Policy, State Priority Guideline, Board of Education Concern and/or State Education Functional Plan Advisory Committee concern regarding educational services and facilities:

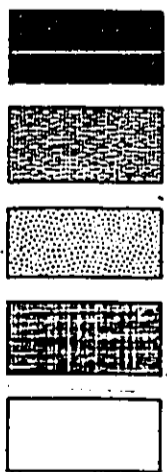
"Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs."

3. Hawaii County General Plan

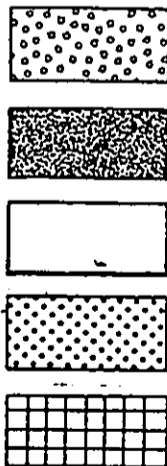
The Hawaii County General Plan is the policy document for the long-range comprehensive development of the island of Hawaii. See Figure 9. The General Plan is adopted by ordinance and provides the direction for the future growth of the County.



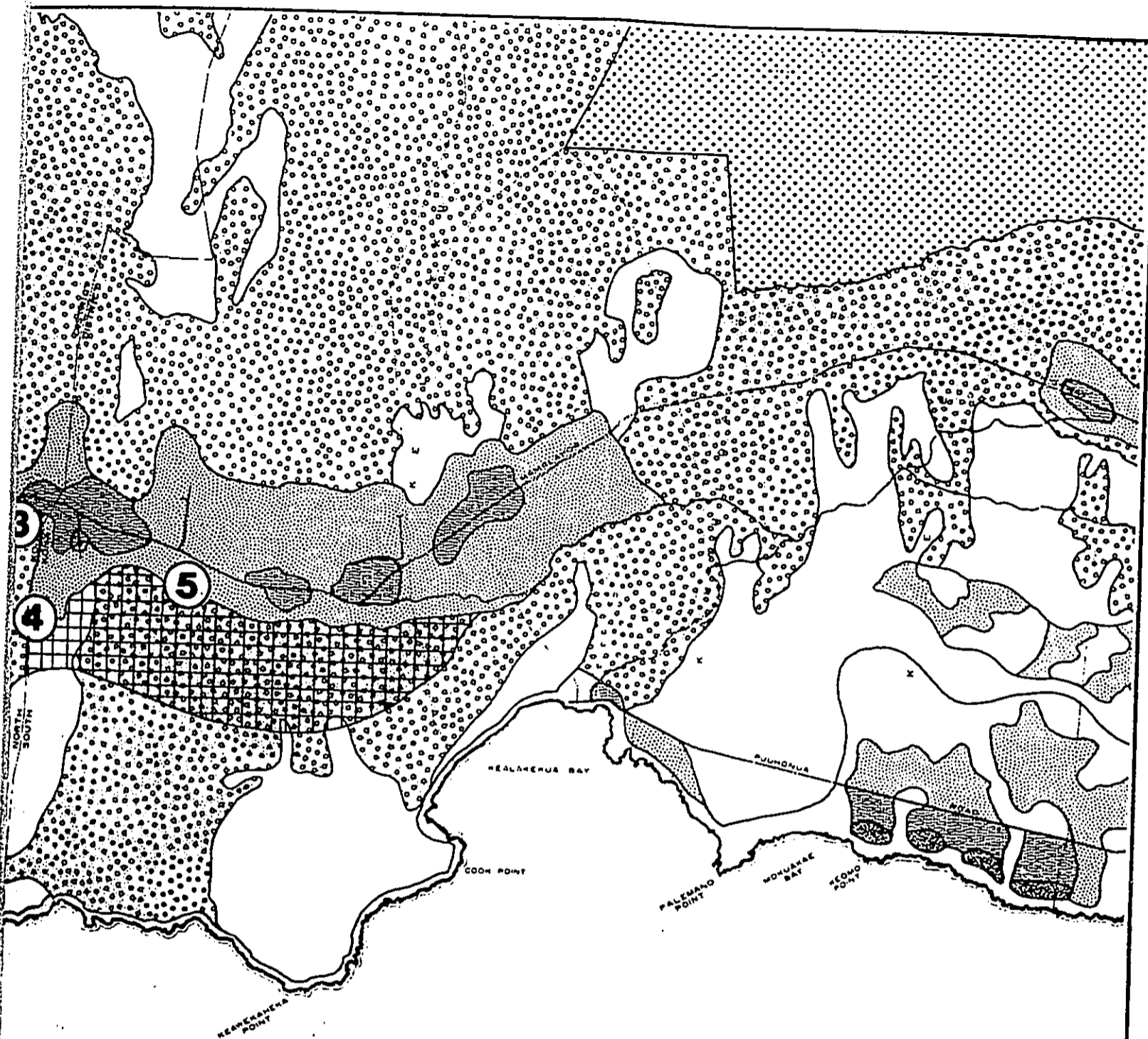
LEGEND:



HIGH DENSITY URBAN
MEDIUM DENSITY URBAN
LOW DENSITY URBAN
INDUSTRIAL
EXTENSIVE AGRICULTURE



ORCHARD
RESORT
OPEN
CONSERVATION
ALTERNATE URBAN EXPANSION



GENERAL PLAN - LAND USE ALLOCATION

PANSION



The proposed project is consistent with the following goal of the General Plan:

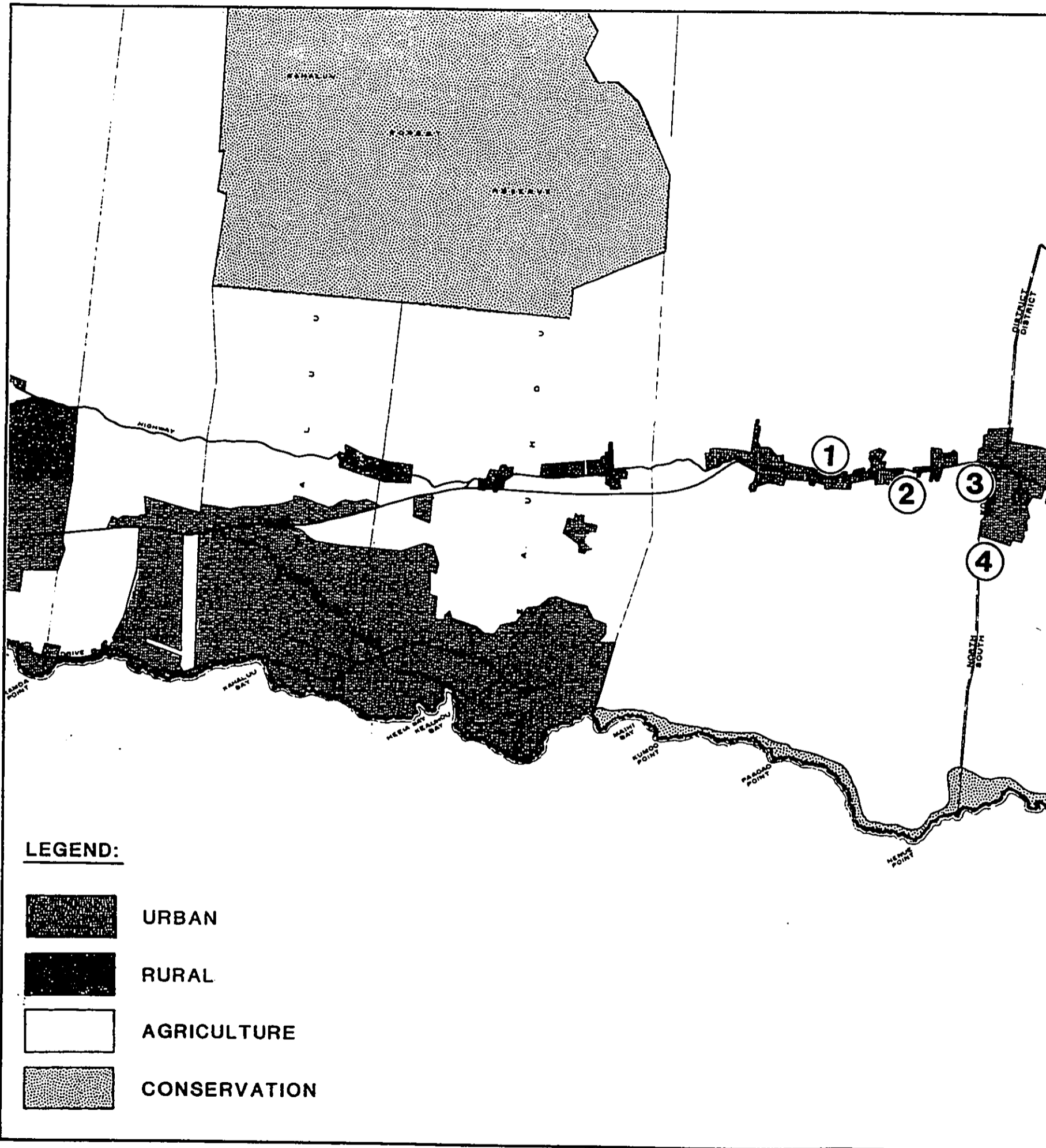
"Encourage the provision of public facilities that effectively service community needs and to continue to seek ways of improving public service through better and more functional facilities which are in keeping with the environmental and aesthetic concerns of the community."

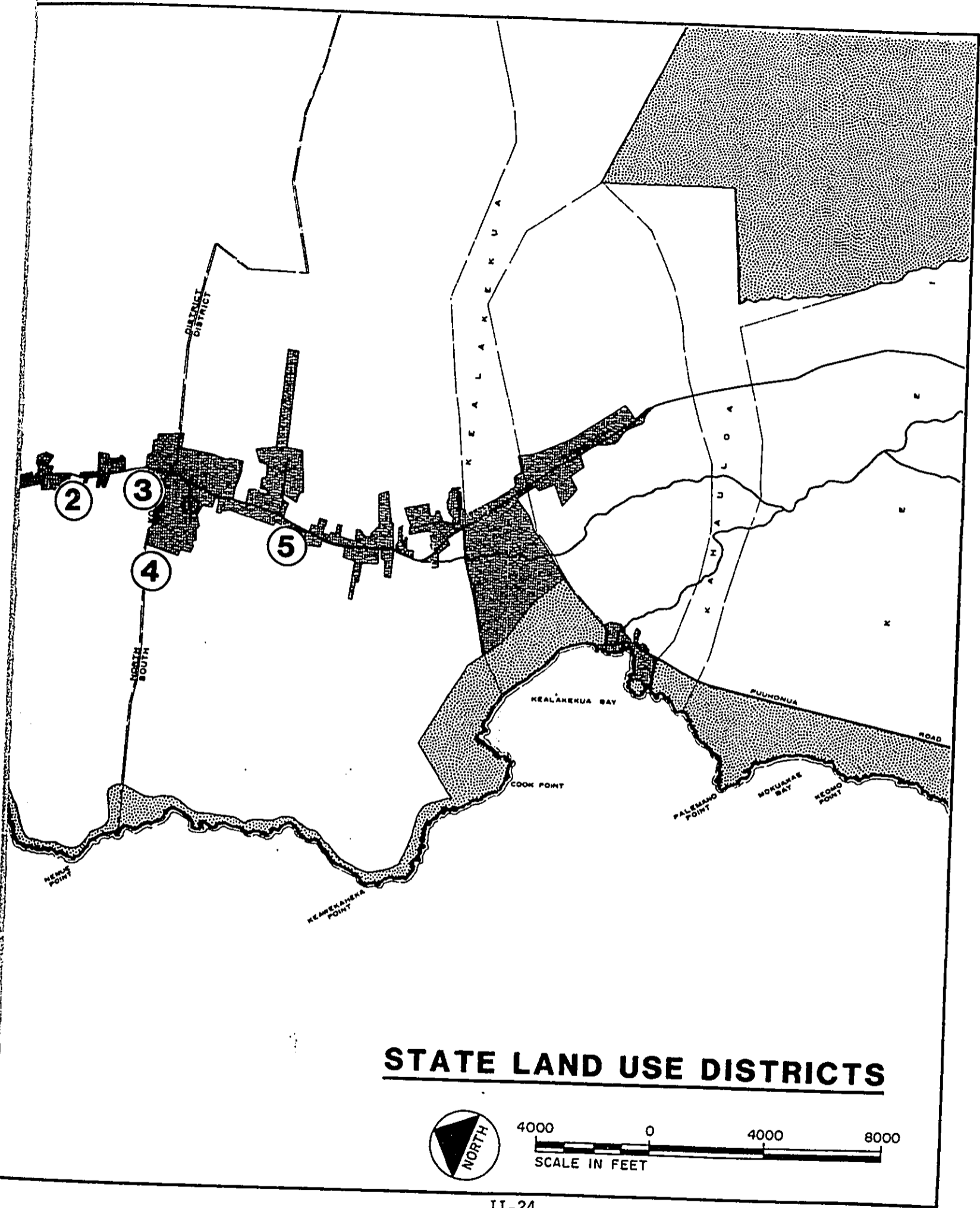
The project is directly in line with the course of action stated in the Hawaii County General Plan:

"Implement the development of a new elementary school complex in central Kona."

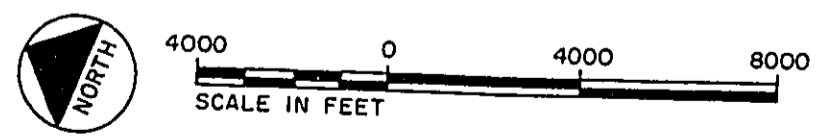
4. State Land Use Designation

The State Land Use Law regulates the classification and uses of land to accommodate growth and development, and to retain the natural resources of the area. All lands in the State are classified by the State Land Use Commission, with consideration given to the County's General Plan, as either Urban, Rural, Agricultural or Conservation. See Figure 10. Within Urban districts, the County has sole jurisdiction over the permissible uses and densities. In Rural and Agricultural districts, both the State Land Use Commission Rules and Regulations and the County requirements apply. In Conservation districts, the State Board of Land and Natural Resources establishes permitted uses.





STATE LAND USE DISTRICTS



5. County Zoning

County of Hawaii Zoning districts within the project service area include Residential, Resort, Commercial, Residential Agriculture, Agriculture, Open and Unplanned Districts. See Figure 11. A Use Permit must be obtained from the County Planning Commission for the school in any of the districts named above except for Resort and Open, in which case a variance is needed.

6. Special Management Area

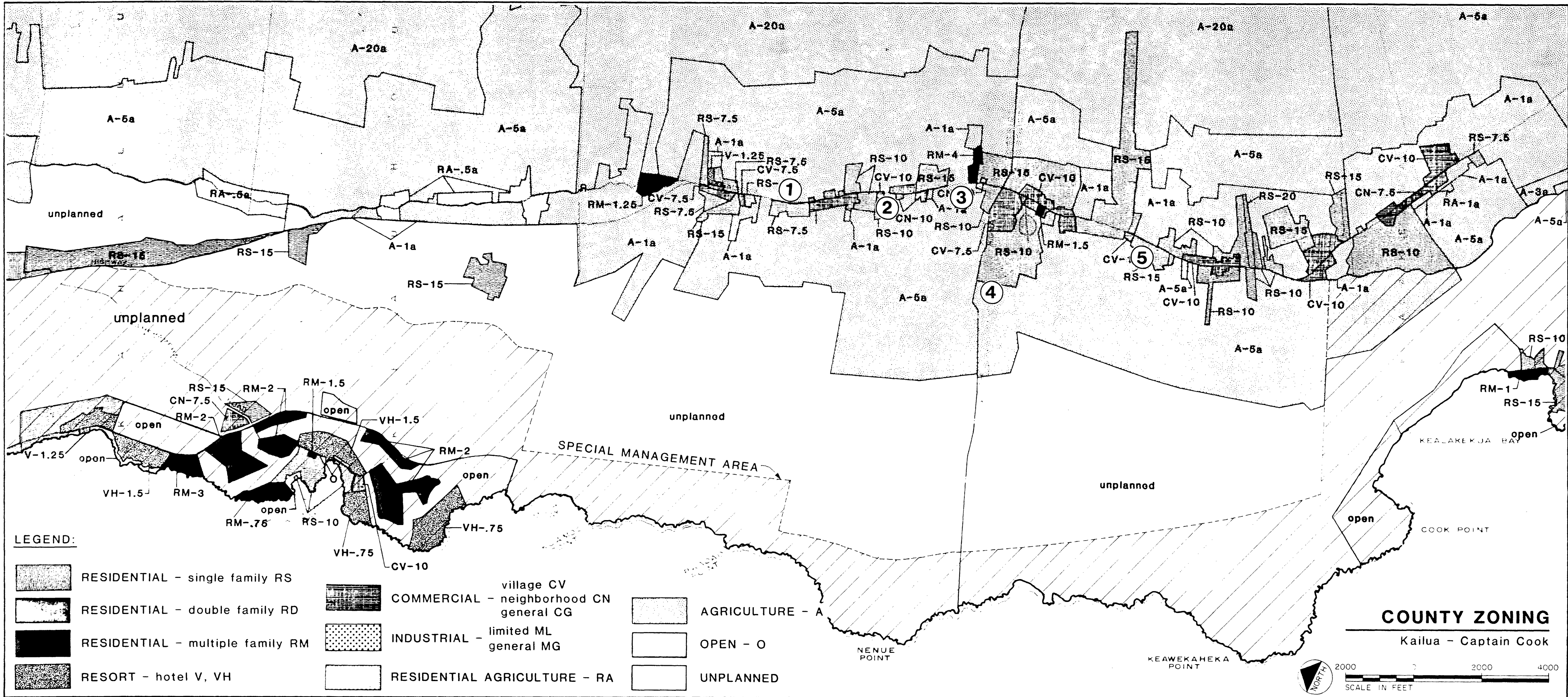
Through the Federal Coastal Zone Management Act, a Special Management Area (SMA) was established to regulate development along the shorefront of the coastal zone. The SMA extends a minimum of 100 yards from the shoreline vegetation or debris line.

The purpose of the SMA is to preserve, protect, and where possible, restore the natural resources of the coastal zone. Any development within the SMA requires a use permit issued by the County.

The potential school sites will not be located within the Special Management Area. See Figure 11.

7. Landownership

In 1986, approximately 59.6 percent or 1,486,689 acres of the Island of Hawaii belonged to private landowners. The State of Hawaii owned approximately 31.5 percent (786,115 acres), followed by the Federal Government with about 8.9 percent (221,851

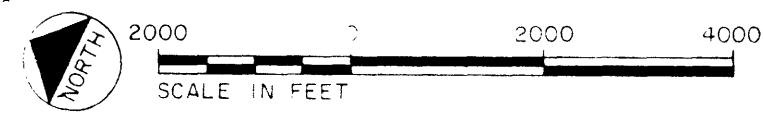


LEGEND:

- | | | | | | |
|--|----------------------------------|--|------------------------------|--|-----------------|
| | RESIDENTIAL - single family RS | | village CV | | AGRICULTURE - A |
| | RESIDENTIAL - double family RD | | COMMERCIAL - neighborhood CN | | OPEN - O |
| | RESIDENTIAL - multiple family RM | | INDUSTRIAL - limited ML | | UNPLANNED |
| | RESORT - hotel V, VH | | INDUSTRIAL - general MG | | |
| | | | RESIDENTIAL AGRICULTURE - RA | | |

COUNTY ZONING

Kailua - Captain Cook



acres) and Hawaii County with 0.05 percent (1260 acres).

III. IDENTIFICATION OF POTENTIAL SITES

A. Methodology

The site selection process involves two steps. The first step is a broad assessment of the service area to identify sites warranting further evaluation. This assessment is based on a set of minimum criteria established by the Department of Education and includes factors such as tsunami, flood and landslide hazards, size and shape, and existing land development. The proximity to the population center of the service area was also applied to narrow the field of potential sites. To facilitate the identification of sites to be considered, discussions with DOE officials were held and tax maps reviewed.

The second step involves a more detailed evaluation of the potential sites meeting the minimum criteria. This evaluation system formulated by the DOE includes school site and community criteria, such as the availability of utilities, accessibility to the site, zoning designations and environmental characteristics. Each of the potential sites is rated "good", "fair", or "poor" with respect to each criteria, all of which are weighted equally.

B. Minimum Site Criteria

The minimum site criteria is used to screen the area for viable sites. The criteria used are:

1. Acreage - a minimum size of 8 acres (usable)

is sufficient, except that if the site is adjacent to a County park for which joint usage can be arranged, 6 acres is sufficient. Due to the steepness in the service area, a larger parcel may need to be obtained to meet the minimum usable land requirement.

2. Shape - the length to width ratio of the site must not exceed 2.5 to 1.
3. Tsunami - the site must not be in a tsunami inundation zone as established by an authorized agency recognized by the State of Hawaii.
4. Flood - the site must not be in a major flood plain if adequate drainage provisions cannot be made at reasonable cost.
5. Landslide - the site must not be in a known or potential landslide area.
6. Traffic - the site must not be located in an area hazardous from the standpoint of pedestrian and traffic safety unless adequate safety provisions can be made.
7. Timing - the acquisition of the site must be early enough to allow sufficient construction time to meet the DOE's scheduled school opening date.
8. Location - the site must be within the ultimate service area.
9. Displacement - the site must be obtained without mass relocation of families.
10. Historical - the development of the site must be such that no buildings or sites designated as historic or deserving of preservation by the State Historic Preservation Office will be destroyed.

C. Additional Criteria

The service area for the new school stretches over seven miles along the Kona coast. Most of these lands are undeveloped; and especially as one gets off Mamalahoa Highway, numerous parcels of land satisfied the minimum criteria.

Therefore, in order to narrow the field of

potential sites, the following additional criteria were applied:

1. Proximity to Population Center - to facilitate pedestrian and vehicular access, the site should be close to the center of the student population.
2. Infrastructure - the site should be located near existing roads and utility corridors to minimize the cost of access roads and service connections.

D. Potential Sites

Based on the minimum site and additional criteria, potential school sites were sought within the school service area. Five potential school sites were located along Mamalahoa Highway between Kainaliu and the existing Konawaena School. See Figure 12. Each site is described below. After initial checking, Site 4 was eliminated from further consideration (see description of Site 4 for reasons for elimination).

1. Site 1 - Kainaliu Mauka Site (Figure 13)

This site involves two parcels, TMK 7-9-08:por. 1 owned by William J. Paris, Jr and TMK 7-9-09:por. 11 owned by Agnes Smith. It is located north of Kainaliu Village, with frontage on the mauka side of Mamalahoa Highway. The site is presently used for open pasture, coffee, and macadamia nuts and is surrounded by other agricultural establishments and residences.

Site 1 is the northernmost of the candidate sites, and as such is the farthest from the center of population, which is located between





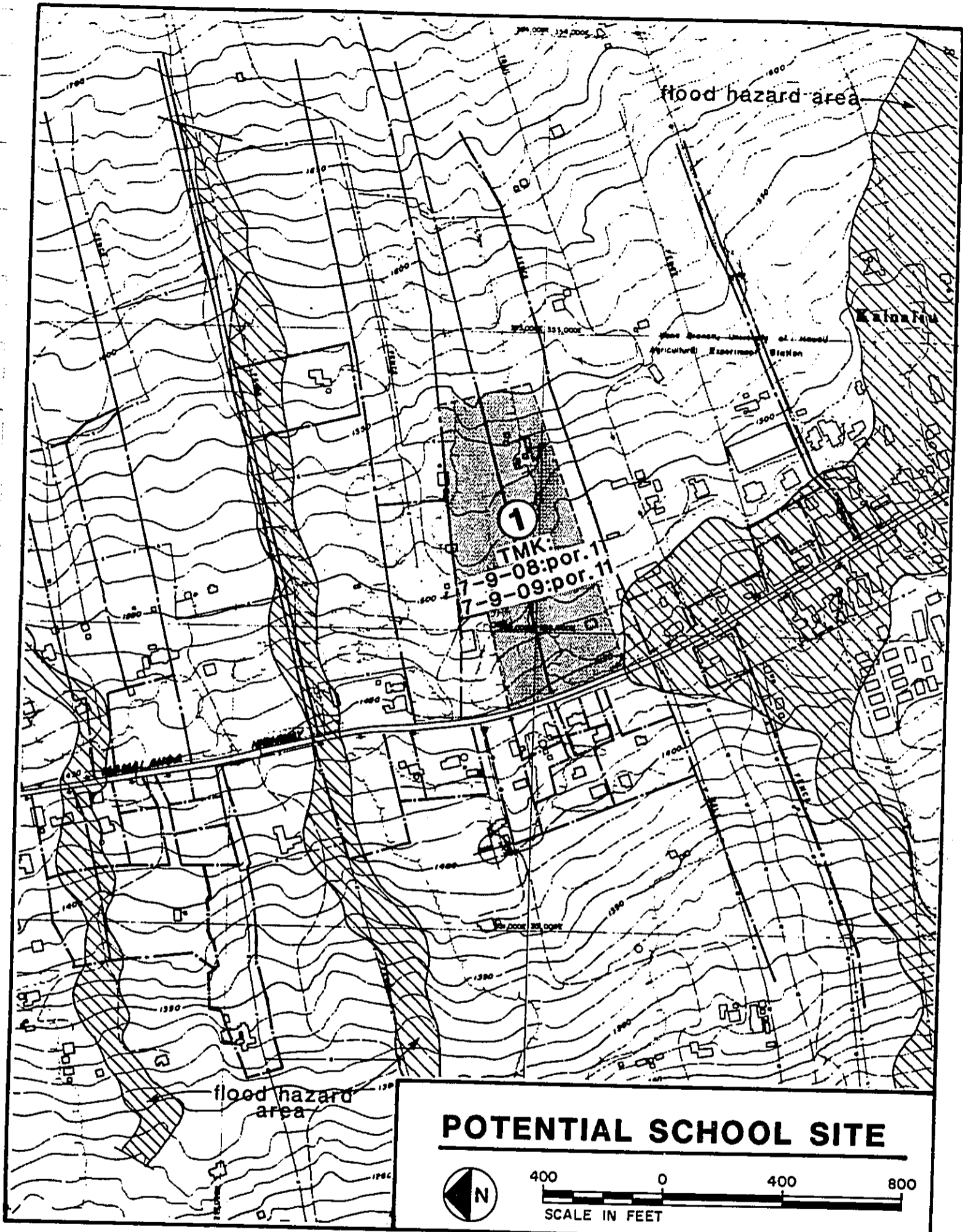
School Service Area Boundary

POTENTIAL SCHOOL SITES



III-4

FIGURE 12



POTENTIAL SCHOOL SITE



III-5

FIGURE 13

Kealakekua and Captain Cook.

2. Site 2 - Kainaliu Makai Site (Figure 14)

This site involves two parcels, TMK 7-9-11:por. 10 owned by the Walter Ackerman Trust; and TMK 7-9-11:por. 11, owned by Mathew Coelho. Parcel 11 is a 2 acre lot within parcel 10, which covers 33.17 acres. The site is located along Mamalahoa Highway (makai side) and is partially vacant and partially used for coffee. There are residences bordering the site along the highway.

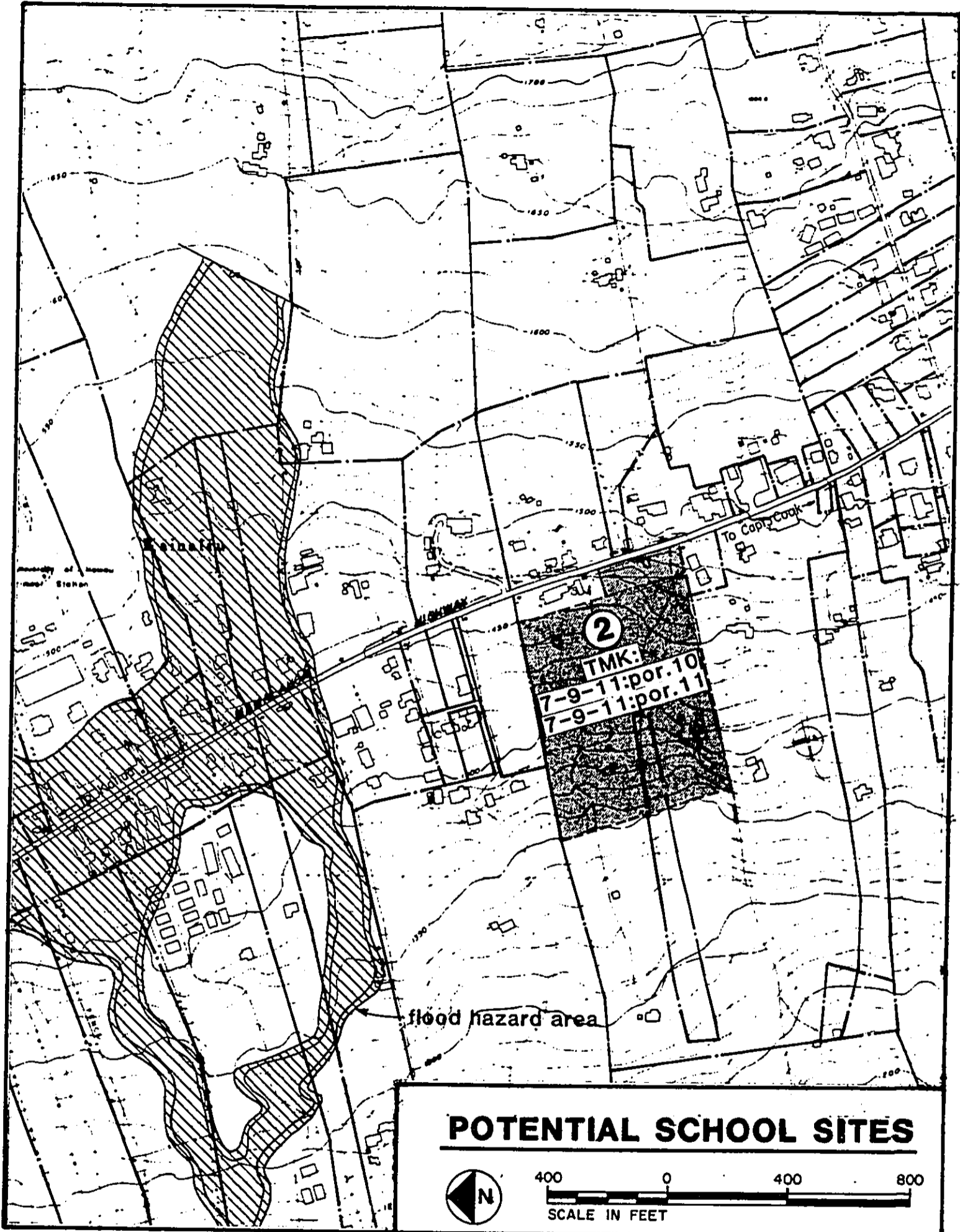
Site 2 was shown as a future school site on the "old" General Plan for this area.

3. Site 3 - Kona Hospital Makai Site (Figure 15)

This site involves two parcels, TMK 7-9-12:por. 9 is part of a 114.45 acre parcel owned by Gary Yamagata, and TMK 7-9-12:15, a 4.774 acre parcel owned by Yamagata Development Corp. The site is located along Mamalahoa Highway (makai side) and is used partially for pasture and partially for coffee. Residences and coffee and macadamia nut farms border the property.

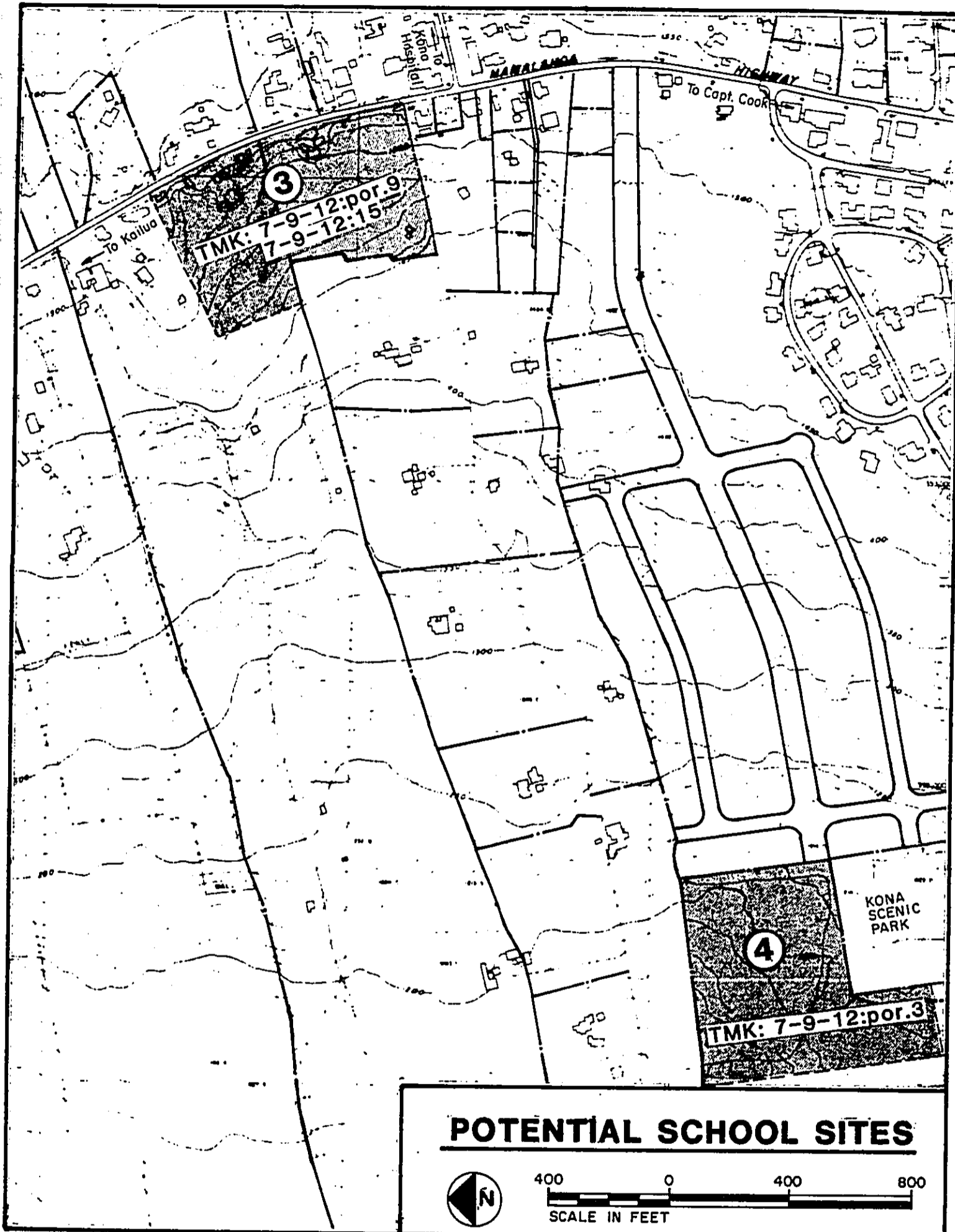
4. Site 4 - Kona Scenic Subdivision Site (Figure 15)

This site, TMK 7-9-12:por. 3 is part of a 711.18 acre parcel owned by Kevin Yancy Trustee. It is located at the makai end of the Kona Scenic Subdivision about half a mile from Mamalahoa



III-7

FIGURE 14



III-8

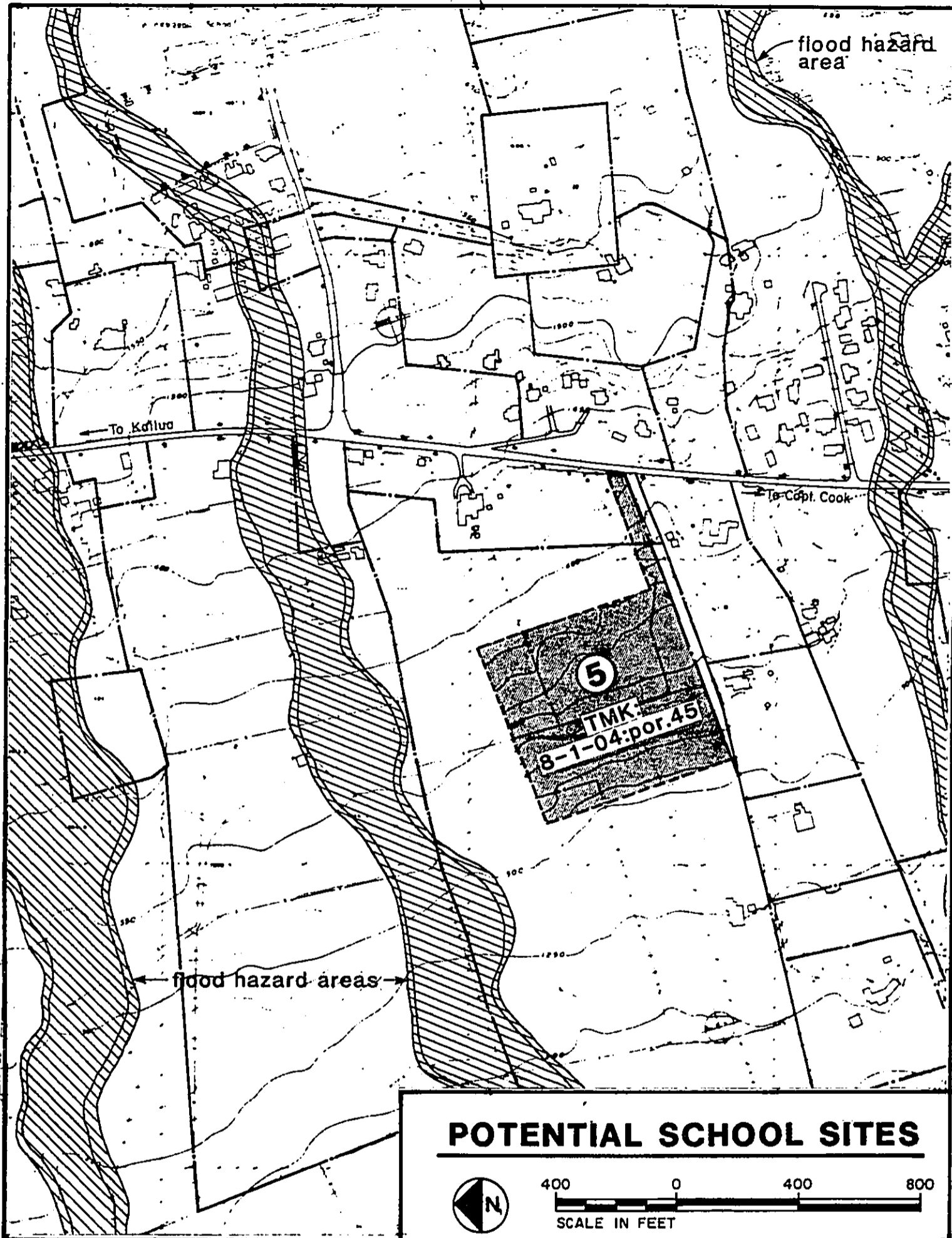
FIGURE 15

Highway. The site is vacant and covered with brush. The County's Kona Scenic Park and residential lots border the site.

After initial investigation this site was eliminated from further consideration because of the steep access road to the site. Halekii Street, an improved County road, has a slope of approximately 17-1/2% for an extended length above the site. This was deemed hazardous for school buses to have to negotiate twice each day.

5. Site 5 - Konawaena School Makai Site (Figure 16)

This site, TMK 8-1-04:por. 45, is part of a 51.87 acre parcel owned by Jack Greenwell. The site is approximately 400' from Mamalahoa Highway, and there is an existing 30 foot wide road and utility easement to the site. The site is used for mainly for pasture, with a portion in macadamia nuts. Additional access width will be needed from the parcel fronting the highway, TMK 8-1-04:5, which is also owned by Jack Greenwell.



III-10

FIGURE 16

IV. PROBABLE IMPACTS AND MITIGATIVE MEASURES

The development and operation of a school site may have direct or secondary consequences on the environment. This chapter discusses the potential impacts of and mitigative measures for the proposed project.

A. Short Term Impacts

The potential sites and the areas surrounding them may be affected as a result of the school development. Short term impacts that can be anticipated as a result of this project are those associated with construction activities such as grading, utility installation, construction of structures and increased traffic at the site.

1. Noise

Residences and businesses near the school site may be sensitive to the increased noise levels during construction. Noise will be generated by heavy equipment, such as those vehicles used in excavation or to import materials to the site. Construction activities will be limited to daylight hours.

The contractor will be required to obtain a noise permit if noise levels are expected to exceed allowable levels as specified in the State Department of Health's Public Health Regulations, Title 11, Chapter 43. The contractor is responsible

for properly maintaining construction equipment to minimize noise levels. Equipment mufflers or other noise attenuating equipment may be necessary. Heavy vehicles required for construction must comply with the State Department of Health's regulations for vehicular noise control.

2. Air Quality

Ambient air quality will temporarily decrease as a result of construction activities. The contractor will be responsible for minimizing dust generated during construction, particularly during grading operations, as prescribed in the State Department of Health's Public Health Regulations, Chapter 60 on Air Pollution Control. The contractor will be required to implement precautions to prevent particulate matter from becoming airborne, such as water sprinkling.

Emissions from construction equipment and other motor vehicles involved in construction may adversely affect ambient air quality. The contractor can minimize these impacts with proper maintenance of these vehicles.

The location of the service area will also aid in the minimizing of fugitive dust during construction. The land and sea breezes in the Kona area are lighter than the northeasterly tradewinds prevailing in the rest of the state.

3. Construction Wastes

Due to the magnitude of the project, the contractor will be required to landfill (compact and cover) his construction wastes.

4. Water Quality

The proposed school development should not adversely affect water quality in the area. None of the potential sites are proximate to any body of water. However, erosion control practices will be implemented during site work, in accordance with State and County erosion control standards.

5. Public Health and Safety

Appropriate measures to assure public health and safety will be the contractor's responsibility during all phases of construction. The construction site will be secured by safety signs and devices during non-work hours as required by State and County regulations.

6. Flora/Fauna

There are no known rare or endangered species of flora or fauna in or around any of the potential school sites.

7. Economic

The development of the school will have economic impacts such as job opportunities for local construction personnel. The increased construction

activities may also benefit local material suppliers and retail businesses.

8. Traffic

Increased traffic at the school site is anticipated during construction, as construction equipment will use existing roadways. These effects are unavoidable and will be compounded due to the fact that there are no alternative routes through the area. The contractor will be responsible for providing traffic control measures and safety precautions to minimize these effects.

9. Archaeological/Historical

An archaeological reconnaissance survey was conducted to determine the presence or absence of significant historic sites at the potential school sites. The resulting report is contained in Appendix B.

A total of seventeen archaeological sites (two prehistoric and 15 historic) were identified within the designated boundaries of Sites 1, 2, 3, and 5. Twelve of the historic sites were assessed as being significant solely for their information content; sufficient amounts of the significant data were collected during the survey so that these sites are considered to be no longer significant. Three historic sites (T-14 in Site 1, T-8 and the Japanese School in Site 3) are assessed as being significant:

T-14 and T-8 for information content, and the school potentially for multiple criteria. The prehistoric sites, comprised of remnants of the Kona Field System, were found to exist on Sites 1 and 5. They are significant solely for their information content. In total, five significant historic sites are present on the combined potential school sites. A summary of the significance assessments and recommended treatments of the identified historic sites are included in Table I.

Since this project is a direct State undertaking, it must comply with Chapter 6E, Hawaii Revised Statutes, on Historic Preservation. The significant historic sites present at the selected site will be affected by the development of the school, except in the case of site 2, where there are none present. Site 1 has two significant sites (T-14 and Kona Field System remnant); site 2 has no significant sites; site 3 has two significant sites (T-8 and the Japanese School); and site 5 has one significant site (Kona Field System remnant). However, adverse effects can be altered to no adverse effects by the development of an acceptable mitigation plan prepared for the specific school site selected.

Mitigation would either involve archaeological data recovery and/or preservation. Preservation is not required, as the sites are significant for information content, but archaeological features

TABLE I - SUMMARY OF GENERAL SIGNIFICANT ASSESSMENTS
AND RECOMMENDED GENERAL TREATMENTS

Site or Feature No.	Significance Category				Recommended Treatment			
	A	X	B	C	FDC	NFW	PID	PAI
T-1	-	+	-	-	-	+	-	-
T-2	-	+	-	-	-	+	-	-
T-3	-	+	-	-	-	+	-	-
T-4	-	+	-	-	-	+	-	-
T-5	-	+	-	-	-	+	-	-
T-6	-	+	-	-	-	+	-	-
T-7	-	+	-	-	-	+	-	-
T-8	+	-	-	-	+	-	-	-
T-9	-	+	-	-	-	+	-	-
T-10	-	+	-	-	-	+	-	-
T-11	-	+	-	-	-	+	-	-
T-12	-	+	-	-	-	+	-	-
T-13	-	+	-	-	-	+	-	-
T-14	+	-	-	-	+	-	-	-
50-10-37-6601 (Site 1)	+	-	-	-	+	-	-	-
50-10-37-6601 (Site 5)	+	-	-	-	+	-	-	-
Japanese School/ Residence	+	-	*	*	+	-	-	-

General Significance Categories:

- A = Important for information content, further data collection necessary (PHRI=research value)
- X = Important for information content, no further data collection necessary (PHRI=research value, SHPO=not significant)
- B = Excellent example of site type at local, region, island, State, or National level (PHRI=interpretive value)
- C = Culturally significant (PHRI=cultural value)

Recommended General Treatments:

- FDC = Further data collection necessary (intensive survey and testing, and possibly subsequent data recovery/mitigative excavations)
- NFW = No further work of any kind necessary, sufficient data collected, archaeological clearance recommended, no preservation potential (possible inclusion into landscaping suggested for consideration)
- PID = Preservation with some level of interpretive development recommended (including appropriate related data recovery)
- PAI = Preservation "as is," with no further work (and possible inclusion into landscaping), or minimal further data collection necessary.

*Provisional assessment; definite assessment pending further data collection.

PHRI = Paul H. Rosendahl, Inc., Consulting Archaeologist
SHPO = State Historic Preservation Office

present at the selected school site may be viewed as an asset and incorporated into the design of the school as a teaching aid or point of interest. When a specific school site is selected, a more specific mitigation plan will be prepared for review and approval of the State's Historic Sites Section.

B. Long Term Impacts

Long term impacts are those anticipated due to school operations. These impacts will affect the environment proximate to the school site as well as the infrastructure in the area.

1. Flora/Fauna

There are no known rare or endangered species of flora existing at any of the potential sites. The loss of vegetation by clearing and grading of the site should be offset by the grassing and landscaping of the school campus. Existing trees which are desirable may be incorporated in landscape plans where possible or transplanted.

No rare or endangered species of fauna are known to exist at the potential sites. Impacts to the existing fauna, such as rats and mongoose, are unavoidable and not viewed as a negative impact. The loss of trees for the nesting and feeding of birds in the area will be a temporary adverse effect until the school landscaping is planted and matured.

2. Social

Students at both the elementary and high/intermediate schools will benefit from the relief of overcrowding at the present school site. The separation of the present educational cluster can be deemed a positive long-term impact. The commingling of elementary with the older students can cause safety, security and behavioral problems.

The proposed school will also benefit the community by providing new facilities for public use. School facilities can be made available for use by the community during non-school hours.

3. Public Health and Safety

The potential school sites are generally free from flood, tsunami, and landslide hazards.

The close proximity of agricultural establishments to the potential school sites may cause concern associated with dust and odor resulting from normal farming operations. Appropriate mitigative measures such as proper building design to allow for adequate air circulation should be incorporated during the design phase.

The school will be planned to minimize hazardous traffic conditions by providing adequate school bus and vehicular loading zones and turn around areas. Sidewalks, crosswalks and traffic control measures

will be incorporated in the school development for pedestrian and vehicular safety.

The school site will be planned with a water storage tank and pump system to provide for adequate fire flows.

4. Displacement

All of the potential school sites have some type of agricultural operation which would be displaced by the school's development. The operations involved, mainly coffee, macadamia nut and cattle, are the primary agricultural land uses in Kona.

While the acreage needed for the school is small compared to the total area of the County devoted to the specific farming operation, individual hardship may occur by the selection of a site. Site 1 is totally used for agriculture. Approximately half of the site is used for pasture, while the other half is used for coffee and macadamia nuts. Site 2 is partially used for coffee, with the remaining portion covered with medium growth. Site 3 half used for pasture with the other half used for coffee. Site 5 is used mainly for cattle, with a small portion in coffee and macadamia nuts.

In addition to agricultural operations, Sites 1, 2, and 3 have occupied dwellings located within the boundaries shown. These dwellings number one, three, and four, respectively.

Each entity (eg. family, farm or business) displaced by the school development will qualify for relocation assistance and payments to minimize the hardship of moving. A relocation plan will be prepared with the relocation assistance available to those affected at the selected site.

5. Infrastructure Impacts

Design and construction of the new school will be coordinated with the existing infrastructure in the area.

Water service from the existing system can be made available for the school site. Regardless of the site selected, water storage and booster pump improvements would be required for adequate fire flow and domestic use. Site 5 will require an extension of the existing water main along Mamalahoa Highway.

Telephone and electrical service lines would need to be extended for Site 5 because of its location off of the highway.

Sewer, drainage and gas service would not be affected by the school development as the school site will have individual on-site systems for these utilities.

Wastewaters generated at the school site will be subject to treatment as required by Act 282, SLH 1985 as amended by Act 302, SLH 1986. Because all

of the sites are above the Underground Injection Control line designated by the State Department of Health, an alternate method to cesspools such as a leaching field, will be used for the on-site disposal of the treated effluent. Soil conditions pertinent to the development and operation of the wastewater system will be investigated prior to its design.

The existing drainage pattern at the selected school site will be maintained as much as possible. However, the development of the site will create increased runoff as areas are paved. This flow will be handled by on-site swales and drywells designed to meet County requirements.

6. Traffic

The only thoroughfare in the service area is the Mamalahoa Highway. As of 1978, traffic counts showed the traffic volume to be equal to or exceeding the design capacity calculated by the State Department of Transportation for the portion between Honalo and Captain Cook.

During peak hours, traffic conditions for Mamalahoa Highway in the service area are classified at Level of Service "F". At this level, traffic conditions are in a forced flow operation at low speeds and volumes are below capacity. These conditions usually result from queues of vehicles

backing up from a downstream restriction. Speeds are substantially reduced and stoppages may occur because of downstream congestion. In the extreme, both speed and volume may drop to zero.

Based on 1986 traffic counts taken by the State Department of Transportation, peak hour traffic conditions at the northern side of the service area occur from 7:00 to 8:00 in the morning and from 3:45 to 4:45 in the afternoon. At the southern end of the service area, peak hour traffic occurs from 7:15 to 8:15 in the morning and from 3:45 to 4:45 in the afternoon.

The traffic growth trends are likely to continue, given the anticipated population and tourism growth. These increased volumes will impose heavier loads on the roadway network and additional roadway improvements will be needed. One proposed roadway project for the Kona area is the Hawaii Belt Road from Holualoa to Papa. This road would start on Kuakini Highway just south of Kamehameha III Road and follow a route makai of Mamalahoa Highway and connect with Ke Ala Keawe Road at Honaunau. This project would separate the through traffic from the local traffic. However, this project is not expected to be constructed in the near future.

The potential site locations were chosen near the center of the student population to minimize commuting distance. The development of the new

school would ease localized traffic congestion at the present combined elementary/high school site, as traffic would be divided to two sites. Specific measures to aid traffic flow at the new site, such as a separate turning lane or the installation of traffic signals, would be investigated in a traffic study conducted after a site is selected. From the standpoint of traffic safety, Sites 1 and 2 are located on curves along the highway and do not allow for as much sight distance as Sites 3 and 5 do.

Traffic counts taken in 1988 by the County Traffic Division at the Konawaena Road/Mamalahoa Highway intersection during the morning peak hour indicate an affinity of traffic flow northbound through the service area toward Kailua. The number of vehicles heading north on Mamalahoa Highway from the intersection is about twice the volume heading south.

The traffic volume in the service area will not change due to the school, as the existing school and all of the potential school sites are accessed by Mamalahoa Highway. The traffic generated at the new school site with its opening enrollment (300 students) is estimated at 60 vehicles. At the design enrollment (830 students), the traffic generation is estimated at 166 vehicles. These estimates are based on trip generation rates determined by the Institute of Transportation

Engineers. Local traffic congestion will increase with the further north that the school is relocated from its existing location, given the northbound traffic affinity determined by the County Traffic Division.

V. ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

The schools in the project area are presently operating beyond capacity with further enrollment growth projected for the region. A "no action" alternative would be against the Department of Education's policy to ensure the provision of adequate and accessible educational services and facilities designed to meet community needs.

B. Reorganization of Schools within the Educational Complex

This alternative involved converting Honaunau (presently K-8) to grades 6-8, and reorganizing Konawaena High to 9-12 and Konawaena Elementary to K-5. This alternative was rejected because the intermediate school would be far from the student population and the number of intermediate students would not meet minimum requirements for a new school. Also, the special facilities at the existing intermediate school would be very costly to duplicate.

C. New High School in North Kona

The alternative to build a second high school is strongly supported by the North Kona community. However, this alternative would reduce the enrollment at the existing high school, create surplus classrooms and affect the high school's program offerings. This

alternative is also the most costly.

D. Expand the Capacity of the Existing Schools

Expanding the capacity of the existing schools is not considered viable since it would worsen the already bad traffic situation at the combined school site. The water and sewerage systems would need to be expanded. Also, additional land adjacent to the existing school would need to be acquired.

VI. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The short-term effects of the school development on man's environment is expected to be minimal in comparison to the long-term benefits to be gained. Construction activities involved with this project will cause disruptions and nuisances near the project site. However, temporary economic benefits will arise from construction expenditures and employment.

Long-term benefits will result as the new elementary school will provide an essential educational service and facility to the area. The school development will ensure the continued maintenance and enhancement of public education. Economic benefits will also result from employment opportunities associated with the operation and maintenance of the school.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The labor and materials required for the development of the school will involve the irreversible commitment of these resources. The labor, materials and utilities used for the operation and maintenance of the new school will also be an irretrievable commitment.

The development of the proposed school will involve the commitment of land for school use which would preclude other land uses for the site. However, the land could be committed to other uses if the school were discontinued in the future.

VIII. LIST OF NECESSARY APPROVALS

The development of the new school will be subject to various governmental permits and approvals, depending on the State Land Use and County Zoning designations of the selected site. Sites 2 and 3 are in the State Land Use (SLU) Agricultural District while Sites 1 and 5 are in both the Agricultural and Urban Districts. All of the sites are zoned A-5a (Agricultural-5 acres minimum) by the County of Hawaii.

Schools can be developed in the SLU Urban District but are not a permitted use in the SLU Agricultural District. However, a school may be developed in the SLU Agricultural District upon approval of a petition by the appropriate State or County decision-making authority for sites less than 15 acres. In this case, the appropriate decision-making authority is the County Planning Commission. A Use Permit must be obtained from the County Planning Commission for development of a school on a site within the SLU Urban District and zoned agricultural.

In summary, the State Land Use, County zoning and County permits required for the sites are as follows:

<u>Site</u>	<u>State Land Use</u>	<u>County Zoning</u>	<u>County Permits</u>
1	Agricultural/Urban	A-5a	Special & Use
2	Agricultural	A-5a	Special
3	Agricultural	A-5a	Special
5	Agricultural/Urban	A-5a	Special & Use

Both the Special Permit and the Use Permit procedures would require a public hearing and County Planning Commission

approval.

The County General Plan Land Use Allocation Guide (LUPAG) map provides guidelines for development in the County. The development of a new school would be allowed with the current General Plan designations, as all sites are classified as Low or Medium Density Urban, or Alternate Urban Expansion.

IX. AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED IN THE
PREPARATION OF THIS DOCUMENT

FEDERAL AGENCIES

U.S. Army Engineering District, Honolulu
Department of the Army
Building 230
Fort Shafter, Hawaii 96858

Soil Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

STATE AGENCIES

Department of Accounting & General Services
State of Hawaii
1151 Punchbowl Street
Honolulu, Hawaii 96813

Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

Department of Education
State of Hawaii
1390 Miller Street
Honolulu, Hawaii 96813

Department of Health
State of Hawaii
1250 Punchbowl Street
Honolulu, Hawaii 96813

Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Strteet
Honolulu, Hawaii 96813

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

Office of Environmental Quality Control
State of Hawaii
465 South King Street
Honolulu, Hawaii 96813

Environmental Center
University of Hawaii
2250 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Honorable Richard Henderson
State Senate
Honolulu, Hawaii

Honorable Virginia Isbell
State House of Representative
Honolulu, Hawaii

Honorable Mike O'Kieffe
State House of Representatives
Honolulu, Hawaii

COUNTY AGENCIES

Planning Department
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Department of Parks and Recreation
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Office of the Mayor
County of Hawaii
Hilo, Hawaii 96720

Department of Public Works
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Hawaii County Council
25 Aupuni Street
Hilo, Hawaii 96720

ORGANIZATIONS

Konawaena Elementary PTSA
P. O. Box 728
Kealahou, Hawaii 96750

Konawaena Elementary Teachers
P.O. Box 728
Kealahou, Hawaii 96750

Blue Sky Enterprises
865 Piilani Street
Hilo, Hawaii 96720

Hawaii Electric Light Co.
1200 Kilauea Avenue
Hilo, Hawaii 96720

West Hawaii Today
P.O. Box 789
Kailua-Kona, Hawaii 96750

Life of the Land
P.O. Box 155
Hilo, Hawaii 96719

The Sierra Club, Mokulua Group
P.O. Box 1137
Hilo, Hawaii 96720

INDIVIDUALS

James J. Ackerman

Stephanie Ackerman

Mathew Coelho

Jack B. Greenwell

William J. Paris, Jr.

Agnes P. Smith

Gary Yamagata

X. EIS CONSULTATION PHASE, COMMENTS AND RESPONSES

The following agencies, organizations, and individuals provided comments in reviewing the Site Selection Study and Environmental Impact Assessment. A total of 14 comment letters were received. All comment letters and their responses are reproduced in this section.

A. Federal Agencies

1. Department of the Army, U.S. Army Engineering District, Honolulu
2. U.S. Department of Agriculture

B. State Agencies

1. Department of Agriculture
2. Department of Business and Economic Development
3. Department of Education
4. Department of Health
5. Department of Land and Natural Resources
6. Department of Transportation

C. County Agencies

1. Department of Parks and Recreation
2. Department of Water Supply

D. Individuals

1. James J. Ackerman
2. Jack B. Greenwell
3. William J. Paris, Jr.
4. Agnes P. Smith



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 230
FT. SHAFTER, HAWAII 96854-5440

REPLY TO
ATTENTION OF:

JOHN W. JAMES
Special Agent



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 111, HONOLULU, HAWAII 96810

RUSSEL S. NAGATA
COMPTROLLER

NEW DIVISION
GENERAL SERVICES

LETTER NO. (R)2137.7

DEC 30 1987


Russel S. Nagata
State Comptroller
Department of Accounting and
General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Nagata:

Thank you for the opportunity to review the Environmental Impact Assessment for the Site Selection for the New Konawaena Elementary School, Kona, Hawaii. The following comments are offered:

- a. None of the possible school sites will require a Department of the Army permit application. Neither waters of the United States nor adjacent wetlands will be modified or filled.
- b. According to the Flood Insurance Study for Hawaii County, the possible project sites are all located in the unshaded portion of zone X (areas outside of the 500-year flood plain).

Sincerely,

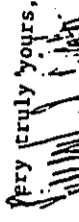

Kisuik Cheung
Chief, Engineering Division

Mr. Kisuik Cheung
Chief, Engineering Division
U. S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, Hawaii 96858-5440

Dear Mr. Cheung:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your November 19, 1987 comments that none of the alternative sites will require a Department of the Army permit application.

Very truly yours,

RUSSEL S. NAGATA
State Comptroller

UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

P. O. JX 50004
HONOLULU, HAWAII
96850

November 17, 1987

Mr. Russell S. Nagata
State Comptroller
Department of Accounting and
General Services
1151 Punchbowl Street
P.O. Box 119
Honolulu, HI 96810



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

RUSSELL S. NAGATA
COMPTROLLER
NEW ORLEANS
DEPT. OF REVENUE
LETTER NO (P) 2139.7

DEC 30 1987

Dear Mr. Nagata:

Subject: Konaena Elementary School, EIS Consultation Phase

The above-mentioned document has been reviewed as requested. The following comments are offered for your consideration:

We note that presently all five potential school sites are zoned for agricultural use and that four, specifically Sites 1, 2, 3, and 5, are being used for either coffee, macadamia, or livestock production. Since these are some of the primary agricultural land uses in Kona, we suggest that the environmental impact statement include a discussion and evaluation of the agricultural importance of each site for the main crops grown in Kona.

Thank you for the opportunity to review this document.

Sincerely,

RICHARD N. DUNCAN
State Conservationist

Mr. Richard N. Duncan
State Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Duncan:

Subject: New Konaena Elementary School
EIS Consultation Phase

Thank you for your November 17, 1987 comments on the subject project. As suggested, more investigation will be done on the agricultural importance of the potential sites to the agricultural crops grown in Kona.

Very truly yours,

RUSSELL S. NAGATA
State Comptroller

JOHN WAHIEE
GOVERNOR



SUZANNE D. PETERSON
CHAIRPERSON, BOARD OF AGRICULTURE
DEPUTY TO THE CHAIRPERSON

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814-2512
November 24, 1987

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 114, HONOLULU, HAWAII 96810



JOHN WAHIEE
GOVERNOR

RUSSEL S. NAGATA
COMPTROLLER

REM BY: RRU
MAIL ROOM

LETTER NO. (P)2151.7

MEMORANDUM

To: Mr. Russel S. Nagata
State Comptroller
Department of Accounting and General Services

Subject: Environmental Impact Statement Preparation Notice
(EISP/N) for proposed Konawaena Elementary School
Department of Accounting and General Services
TMK: 7-9-08: por. 1
7-9-11: por. 10 and por. 11
7-9-12: por. 9
7-9-12: por. 3
8-1-04: por. 45 North and South Kona, Hawaii
Area: approximately 8 acres each

The Department of Agriculture has reviewed the subject
EISP/N and offers the following comments.

The subject document describes five possible sites for the
proposed elementary school. Alternative site 4 was rejected
because of the steep access road to the site. All remaining
sites have some existing agricultural use such as pasture and
orchard (coffee and macadamia nut).

We note that the agriculturally-related community criteria
ratings for alternative sites 1, 2, 3 and 5 range from "fair" to
"poor". To the greatest extent possible, the alternative site
that is selected should be the one that will involve the least
agricultural impact, such as displacement of farming operations.
Furthermore, when selecting among the subject sites, it should
be kept in mind that agricultural uses in the vicinity of the
selected site may be the source of fugitive dust, noise and odor
resulting from normal farming operations. Chapter 165 of the
Hawaii Revised Statutes limits the conditions under which normal
farming activities may be deemed a nuisance.

Thank you for the opportunity to comment.

Suzanne D. Peterson

SUZANNE D. PETERSON
Chairperson, Board of Agriculture

cc: OEQC

JAN 7 1988

Honorable Suzanne D. Peterson
Chairperson
Department of Agriculture
State of Hawaii
Honolulu, Hawaii

Dear Ms. Peterson:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your November 24, 1987 comments on the
subject project.

The dominant presence of agricultural lands in the
school service area makes it difficult to avoid negative
impacts to and from agricultural operations. However, we
will keep in mind that adjacent agricultural operations may
be the source of fugitive dust, noise and odor.

DAGS has included items on use of prime agricultural
lands plus displacement of farms and businesses in the site
selection criteria to minimize the school's impact on
agriculture. However, these items must be considered along
with many others in selecting the most suitable school site.

Very truly yours,

Russel S. Nagata
RUSSEL S. NAGATA
State Comptroller



**DEPARTMENT OF BUSINESS
AND ECONOMIC DEVELOPMENT**

KAMAHAULIULU, HAWAII, 96825
HAWAIIAN TELEPHONE COMPANY, INC. 808-541-1111
HAWAIIAN TELEPHONE COMPANY, INC. 808-541-1111

JOHN W. WILSON
GOVERNOR
ROGER A. ULVELING
DIRECTOR
MURRAY E. TOWILL
DEPUTY DIRECTOR
BARBARA KIM STANTON
DEPUTY DIRECTOR

Ref. No. P-7729

December 3, 1987

D/S

MEMORANDUM

TO: The Honorable Russel S. Nagata, State Comptroller
Department of Accounting and General Services

FROM: Roger A. Ulveling

SUBJECT: EIS Preparation Notice, Konaewaena Elementary and Pahoa Elementary Schools

We have reviewed the subject Environmental Impact Statement preparation notice and offer the following comments.

Hawaii's Coastal Zone Management policies advocate managing land and water uses to comply with State water quality standards in order to protect coastal waters. The notice indicates that possible school sites are within the Pahoa and Kailua-Kona areas. The coastal waters of these areas are designated Class AA by the Department of Health. Since there are no public sewer systems available to service the proposed schools, individual wastewater systems will be employed. The Draft Environmental Impact Statement should discuss this situation in detail and assess alternative approaches to sewage treatment and wastewater disposal to assure minimizing adverse impacts on coastal receiving waters.

Thank you for the opportunity to comment on these preparation notices.

[Signature]
of Director



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 118, HONOLULU, HAWAII 96818

JOHN W. WILSON
GOVERNOR

RUSSEL S. NAGATA
COMPTROLLER
STATE OF HAWAII
LETTER NO. (P)1000

JAN 11 1988

Honorable Roger Ulveling
Director
Department of Business and
Economic Development
State of Hawaii
Honolulu, Hawaii

Dear Mr. Ulveling:

Subject: New Konaewa Elementary School
EIS Consultation Phase

Thank you for your December 3, 1987 comments on the subject project.

The EIS will be revised to indicate that an individual wastewater treatment system, such as the Cavette system, will be required as part of the school sewer improvements to meet applicable State and County rules and regulations.

Very truly yours,
[Signature]
RUSSEL S. NAGATA
State Comptroller

FORM 8100-1
1-78

CHARLES T. TOGUCHI
Superintendent



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2208
HONOLULU, HAWAII 96810

OFFICE OF BUSINESS SERVICES

December 23, 1987

MEMO TO: Mr. Teuane Tomimaga, Public Works Engineer
Public Works Division, DAGS

ATT'N : *By Mark Yamada, Engr.*

F R O M: Eugene S. Imai, Assistant Superintendent
Office of Business Services

SUBJECT: New Kona waena Elementary School
Site Selection/EIS Report

Attached are comments on the report made by the Kona waena Elementary School teachers. Per procedure, please include their comments in the updated report.

Should you have any questions, please call Wallace Okamura at 737-4743.

ESI:W0:ey
Attach.
cc Hawaii District

11-23--87

A few concerned teachers at Kona waena Elementary School would like to share our ideas and opinions regarding the site selection for the new elementary school.

We are very much in favor of the Greenwell property located close by to the high school for several reasons. We have considered some pros and cons and feel that the benefits outweigh the disadvantages. Benefits include the following:

1. We'd like to be in close proximity to the high school in order to be able to continue to use the pool for a Learn-to-Swim program and the Onizuka gym for special performances.
2. 50 acres of property as opposed to 30 will assure us the proper playground facilities. We need large fields like we presently have for all of our outdoor activities.

The biggest disadvantage is the traffic congestion, however, we feel that no matter where the school is located, there will be traffic congestion. Therefore, we feel that it should be attended to regardless of the site selection. Alleviating traffic congestion should not be the basis for a school site selection. It should be considered one of the problems that need to be addressed. Possibly a solution may be a staggered school schedule with the high school starting a half hour later and ending a half hour later (eg. 8:30 a.m. to 3:00 p.m.). Another solution may be two elementary school entrances and exits like a loop that bypasses the high school traffic.

We'd also like you to consider some other factors. Kahakai School's first building increment did not include an office, a library, or a cafeteria. For two years the school used classrooms that were converted into a makeshift office, library, and lunch serving area. These facilities are a very necessary, supporting part of a school. It's like a home with only bedrooms. A school cannot function without its pillars for support. These facilities must be included in the first increment.

Smilo Kaneko
Richard Kaneko
James W. O'Neil
Wally W. O'Neil
Brian O'Neil
Kathleen S. O'Neil
Nancy J. O'Neil
Elaine O'Neil
Norman J. O'Neil
Mary C. O'Neil

Maria Bergman
Mitchee Bergman
Janice Bergman
Robert Bergman
Christina Bergman
Michael Bergman
Joseph Bergman
David Bergman
John Bergman
James Bergman
Robert Bergman
Janice Bergman
Michael Bergman
Joseph Bergman
David Bergman
John Bergman



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 114, HONOLULU, HAWAII 96810

MUSUMI S. NAKATA
COMPTROLLER
ALEX KITAHARA
DEPUTY COMPTROLLER

LETTER NO. (P)1061.8

NOV 18 1988

Mr. Eugene Imai
Page 2
Ltr. No. (P)1061.8

Please note that a staggered school schedule as a traffic mitigative measure is not related to the site selected and can be implemented any time by the Department of Education.

4. First Increments - The determination of facilities to be included in the first increment is the responsibility of the Department of Education. The present DOE practice is to start new schools with temporary administration, library and dining facilities.

We appreciate the input for this project.

If there are any questions on this matter, please call Mr. Mark Yamabe of the Planning Branch at 548-7660.

Very truly yours,

TEUANE TOMINGA
State Public Works Engineer

MY:jk

Mr. Eugene Imai
Assistant Superintendent
Office of Business Services
Department of Education
State of Hawaii
Honolulu, Hawaii

Dear Mr. Imai:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for the December 23, 1987 letter transmitting comments by the Konawaena Elementary School teachers on the subject project. Our responses to their comments are as follows:

1. Site Preference - The preference for Site 5 for the reasons given is noted and will be considered in the selection of the school site.
2. Size - The DOE's specifications and standards on page I-7 calls for a school site with 6 to 8 acres of usable land. Therefore, if Site 5 is selected, only a portion of the 51.87-acre parcel will be acquired for the school.
3. Traffic - Mamalahoa Highway presently provides access to the existing Konawaena Elementary school and will provide access to the new school site. Therefore, relocation of the elementary school should have minimal impact on the existing traffic.

However, we are looking at alternative measures to reduce traffic congestion. One of the measures being considered for Mamalahoa Highway at the proposed school intersection is to provide left-turn lanes. Other economically feasible alternatives for the DOE will also be considered during the design phase of the project.

RUSSEL S. NAGATA
COMPTROLLER
SEN AITOBU
SENATE COMPTROLLER
LETTER NO. (P) 1042



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 115, HONOLULU, HAWAII 96810

JAN 12 1988

JOHN LEWIN
DIRECTOR

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 328
HONOLULU, HAWAII 96810

In reply, please refer to:
EPHSD

November 30, 1987

MEMORANDUM

To: Honorable Russel S. Nagata, State Comptroller
Department of Accounting and General Services

From: Director of Health

Subject: EIS Consultation Phase
(1) Pahoehoe Elementary School
(2) Konawaena Elementary School

X-00

The primary concern is the wastewater generated from the schools and the proposed means of treatment and disposal of the wastewater. Our Underground Injection Control (UIC) rules, Chapter 23, Administrative Rules, Title 11, Hawaii State Department of Health restricts the disposal of wastewater in amounts greater than a thousand gallons (1,000) per facility in areas where drinking water sources need to be protected. It is the intent of the Department to support the treatment of wastewater from public facilities and restrict the use of cesspools for publicly owned facilities. We would like to recommend a meeting involving your engineering consultants with our UIC and wastewater staff and Chief Sanitarian, Hawaii District, to discuss the wastewater concerns.

JOHN C. LEWIN, M.D.

cc: Chief Sanitarian, Hawaii

Honorable John Lewin
Director
Department of Health
State of Hawaii
Honolulu, Hawaii

Dear Dr. Lewin:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your November 30, 1987 comments on the subject project.

The EIS will be revised to indicate that an individual wastewater treatment system, such as the Cavitec system, will be required as part of the school sewer improvements to meet applicable State and County rules and regulations. DAGS consultant will be meeting with your staff to discuss the project during the planning and design phases.

Very truly yours,

RUSSEL S. NAGATA
State Comptroller

JOHN WAINES
Chairman



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 851
HONOLULU, HAWAII 96810

WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
INVESTIGATIVE REPORT

CONSTRUCTION DEVELOPMENT
PROGRAMS
ENVIRONMENTAL AND
CULTURAL RESOURCES
CONSERVATION AND
RECONSTRUCTION
CONTRACTS
FOR STATE AND FEDERAL
LANDS
STATE HISTORIC
SITES

DOC. NO.: 2123E
FILE NO.: 88-225

DEC 14 1987

Honorable Russel S. Nagata, Comptroller
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Nagata:

SUBJECT: New Konawaena Elementary School

Thank you for the opportunity to review the EIS Preparation
Notice cited above. We offer the following comments:

HISTORIC SITES CONCERNS

Historic preservation concerns are covered on pp. 11-11 through
11-11 and Figure 7 of this notice are 10 years out of date. Many
more sites have been found, both inland and on the shore. However,
the basic fact that the project is within the Kona Field System
historic district still is true. It is indicated that an
archaeological survey will be conducted for the candidate sites with
the findings presented in the Draft EIS. We will await the findings.

Since this is an undertaking by a State agency, this project
must comply with the State's Historic Preservation Law (Chapter
6E). Also, if federal funds are involved, compliance with the
National Historic Preservation Act must occur. In either case,
coordination with our Historic Preservation Office (the Historic
Sites Section) is needed to obtain concurrence that historic
preservation review steps have been completed.

Thank you for your consideration of our concerns.

Very truly yours,

WILLIAM W. PATY, Chairperson
Board of Land and Natural Resources



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 111, HONOLULU, HAWAII 96810

JOHN WAINES
Chairman

RUSSEL S. NAGATA
Comptroller
815 ALIPIA
HONOLULU, HAWAII
LETTER NO (P)1044

JAN 13 1988

Honorable William W. Paty
Chairperson
Department of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

Dear Mr. Paty:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your December 14, 1987 comments on the
subject project.

The map of inventoried findings presented in the report
will be revised to show the up-to-date listings of DLNR's
Historic Sites Section.

The intent of the archaeological survey is to determine
if historic sites are present on the candidate school sites
and, if so, to gather information required to evaluate their
significance. If significant sites are present, then
potential impacts to these sites will be disclosed and a
mitigation plan developed, as appropriate.

This project will comply with the State's Historic
Preservation Law (Chapter 6E). We will coordinate archae-
ological work with your Historic Preservation Office to
assure compliance.

We appreciate your input for this project.

Very truly yours,

RUSSEL S. NAGATA
State Comptroller

100-110446
- 110446



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
155 WASHINGTON STREET
HONOLULU, HAWAII 96813

JOHN WALKER
DIRECTOR

100-110446

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
155 WASHINGTON STREET
HONOLULU, HAWAII 96813

JEREMY HELEN
DIRECTOR

STP 8.2532

December 7, 1987

DEC

MEMORANDUM

TO: The Honorable Russel S. Nagata, Comptroller
Department of Accounting and General Services

FROM: Director of Transportation

SUBJECT: EIS CONSULTATION PHASE
KONAWAENA ELEMENTARY SCHOOL

A Traffic Impact Analysis Report (TIAR) should be prepared to address the effects of the traffic generated by the proposed development. The report should also identify any mitigation measures required including the possible need to widen the highway fronting the development.

The TIAR should be submitted for our review and included in the EIS.

We appreciate this opportunity to provide comments.

Edward Y. Hirata
Edward Y. Hirata



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 111, HONOLULU, HAWAII 96810

RUSSEL S. NAGATA
COMPTROLLER

PER MISS
MITSU OHTSUKA

LETTER NO. (P)2155.7

JAN 7 1988

Honorable Edward Hirata
Director
Department of Transportation
State of Hawaii
Honolulu, Hawaii

Dear Mr. Hirata:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your December 7, 1987 comments on the subject project.

We anticipate that highway improvements such as widening for traffic channelization in front of the school will be needed. However, the extent of the improvements will be made during the design phase of the project, following the selection of a school site.

We appreciate your input for this project.

Russel S. Nagata
Very truly yours,
RUSSEL S. NAGATA
State Comptroller

Danie K. Carpenter
Mayor
KUMUHOU
Managing Director



Patricia G. Engelhard
Director
Ronald Okamura
Deputy Director

JOHN WAINALE
COUNTY



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

P. O. BOX 111, HONOLULU, HAWAII 96810

MAIL ROOM
MAIL ROOM
MAIL ROOM

December 1, 1987

Dept. of Accounting & General Services
1151 Punchbowl Street
P. O. Box 119
Honolulu, HI 96810

RE: Konawaena Elementary School (Site Selection)
EIS Consultation Phase

We have reviewed the EIS Preparation Notice and foresee no adverse impact resulting from any of the proposed school sites on the County's recreational facilities or resources.

Thank you for the opportunity to review the document.

Pat Engelhard
Patricia Engelhard
Director

PE:GM:a1

X-11

DEC 29 1987

Ms. Patricia Engelhard
Director
Department of Parks and Recreation
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Ms. Engelhard:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your December 1, 1987 comments confirming that development of a school on the candidate sites will not have foreseeable adverse impact on the County's recreational facilities.

Very truly yours,

Teuane Tomina
TEUANE TOMINA
State Public Works Engineer

MY:jk



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

25 AUPUNI STREET • HILO, HAWAII 96720

JOHN WALKER
DIRECTOR



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

P. O. BOX 115, HONOLULU, HAWAII 96810

PLUMBING RECEIPT
EMPLOYMENT
EIS NUMBER
PROJECT IDENTIFICATION
LETTER NO. (P)2148.7

November 20, 1987

Mr. Russel S. Nagata
State Comptroller
Department of Accounting and General Services
State of Hawaii
P. O. Box 119
Honolulu, HI 96810

EIS PREPARATION NOTICE
KONAENA ELEMENTARY SCHOOL
SITE SELECTION

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

1. Anticipated maximum daily water demand and peak hour water demand requirements should be included in the document.
2. Water can be made available for the proposed school site. However, pipeline, storage and booster pump improvements will be required in order that minimum design standards for fire flow and domestic use can be met.
3. Water service to the proposed project will be subject to requirements of the Department's Rules and Regulations and applicable policies.

H. William Sewake
H. William Sewake
Manager

DEC 30 1987

Mr. H. William Sewake
Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Sewake:

Subject: New Konaena Elementary School
EIS Consultation Phase

Thank you for your November 20, 1987 comments on the subject project.

Water demand requirements and water system improvements for fire flow and domestic use will be included in the EIS. These facilities will be provided according to DWS Rules and Regulations and applicable policies.

Very truly yours,

T. Tani

TEUANE TONIWAGA
State Public Works Engineer

MY:jk

... Water brings progress...

James J. Ackerman
Trustee: Walter D. Ackerman Estate Trust
PO Box 555 Kealahou, HI. 96750

Mr. Mark Yamabe
Division of Public Services
Dept. of Accounting and General Services
PO Box 119
Honolulu, HI. 96810

December 30, 1987

Dear Mr. Yamabe,

Subject: Konawaena Elementary School
EIS/Site Selection

I am against Site 2 - Kainaliu Makai - TRK 7-9-11: par 10, owned by the Walter Ackerman Estate Trust, being selected for the new Konawaena Elementary School.

Currently there are six dwellings on the property, all of which are occupied by families, as well as coffee farms in production. These farmers have worked hard to keep this prime agricultural land productive, and to bring back coffee land once abandoned in the 60's and 70's. Selection of this site would not only displace families and farmers, but further reduce the availability of prime agricultural land, and hence contribute to the deterioration of farming as a viable industry.

Traffic is also a major problem in regards to Site 2. The traffic situation on the Mamalahoa Highway between Teshima's Restaurant and Konawaena School Road is extremely heavy, particularly during early morning and afternoon rush hours. In fact, it is the ONLY road for ALL vehicular traffic to and from South Kona. Adding a large public elementary school to the area would only add to the congestion.

It is also common knowledge that the majority of Konawaena Elementary children live in South Kona and are bused to the Konawaena campus. By putting the new school NORTH of the existing SOUTH Kona campus, the school buses servicing the elementary school would be criss-crossing with the high school buses from North Kona making even more traffic and increasing the very serious dangers of more traffic fatalities on an already severely stressed highway.

Since most of the children who will be attending the new school live in South Kona, it would seem logical to find a site in that area

On behalf of the Walter D. Ackerman Estate Trust, I urge you to select a different site for the new elementary school.

Sincerely,

James J. Ackerman
James J. Ackerman, Trustee
Walter D. Ackerman Estate Trust



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 115, HONOLULU, HAWAII 96810

RUSSEL E. NACATA
COMPTROLLER
SEA ETIABU
DEPT. COMPTROLLER

LETTER NO. (P)1161.8

FEB 29 1988

Mr. James J. Ackerman
Page 2
Ltr. No. (P)1161.8

We appreciate your input for this project.

If there are any questions on this matter, please call
Mr. Mark Yamabe of the Planning Branch at 548-7660.

Very truly yours,

TEUANE TOMINAGA
State Public Works Engineer

MV:jk

Mr. James J. Ackerman, Trustee
Walter D. Ackerman Trust
P. O. Box 555
Kealahou, Hawaii 96750

Dear Mr. Ackerman:

Subject: New Konawaena Elementary School
EIS Consultation Phase

X-14

Thank you for your December 30, 1987 comments on the subject project. Your objections to the selection of the Kainaliu Makai Site - Site 2 for the reasons given are noted and will be considered in the selection of the school site. In this regard, we offer the following responses to your comments:

1. Displacement - The information on occupants of the property will be included in the EIS. Please be assured that full disclosure of the displacement of families, farms, businesses, and prime agricultural lands will be included in the EIS.
2. Traffic - We agree that the traffic on Mamalahoa Highway is heavy. However, this condition already includes the existing Konawaena Elementary School traffic. Therefore, we do not believe that a new Konawaena Elementary School at Site 2 would have a major impact on the present traffic in Kainaliu.
3. Bussing - There are presently 8 buses serving the existing Konawaena Elementary School with 4 approaching from the north and 4 from the south. If Site 2 is selected, there will be a redistribution of buses with respect to the new school site. However, the number of bus trips in the area between Site 2 and the existing elementary school should not increase significantly.

CIRCLE J RANCH

Registered Polled Herefords
P. O. Box 47 / Kealakua, Hawaii 96750



December 8, 1987

Mr. Russel S. Nagata
State Comptroller
State of Hawaii
Department of Accounting & General Services
1151 Punchbowl Street
P. O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Nagata:

In reply to your letter of November 30th 1987, pertaining to Konawaena Elementary School EIS Consultation Phase, I have several important comments to make which are of great concern to me.

1. The traffic between 7:00 and 8:00 A.M. and again at 2:30 to 3:30 P.M. is extremely heavy from Teshima's Restaurant on the North clear over to Captain Cook to the South. Any access road coming off this highway would cause further problems, except where there are plainly marked exits such as at Kealakua Post Office.
2. The access 30 foot roadway mentioned in your site selection document belongs to me and services at least six different individuals.
3. I have gone to a lot of expense clearing, bulldozing, and fencing on this land to put it into a first class ranching project. I consider this land to be prime pasture land and is a necessary part of my cattle operation, especially the fact that I have set up an intensive grazing unit and feeding operation adjacent to my house lot.
4. I have a severe problem of water coming from Konawaena School particularly since the extension of the school which causes ditches 6 feet deep on the North side of my house lot. Any project such as a school with buildings and parking lots, etc.. would cause another water shed and erosion of soil.
5. Another problem that definitely could occur is that of an attractive nuisance, which is cattle right next to the school and young children not realizing the danger involved.

X 15

Mr. Russel S. Nagata
Page 2
December 8, 1987

6. This land has been in ranching for over 100 years. I have inherited the ownership for at least 50 years.
7. The proximity to Konawaena School junction and my home makes the proposal sight a very poor choice.
8. I suggest a very sensible sight would be below the Kealakua Post Office. The grade is no worse than the grade up to Konawaena High School and there is ample open land available which is not being used at present.
9. I have been offered several possible deals to sell my makai land for agricultural projects and I object to putting concrete and pavement on good soil country.

Another item I wish to include in this letter is the fact that someone, without my permission took it upon themselves to enter my property, take pictures, and leave gates open. Why didn't we get a chance to talk this matter over before coming to any conclusion?

I am calling this matter to the attention of my attorney and reiterate my strong objection to any use of my property for such a project as a school. Furthermore, the general public is cognizant of the traffic congestion and should be permitted to voice their opinion.

Very truly yours,

Jack B. Greenwell
Jack B. Greenwell
Owner Circle J Ranch

JBG

cc: John Waihee, Governor

(continued)



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

P. O. BOX 116, HONOLULU, HAWAII 96818

RUSSEL S. MAGATA
COMPTROLLER

HEM ETIHAU
SENATE CHIEF CLERK

LETTER NO. (P) 2126.7

DEC 23 1987

Mr. Jack B. Greenwell
P. O. Box 47
Kealahou, Hawaii 96750

Dear Mr. Greenwell:

Subject: Konawaena Elementary School
EIS/Site Selection

Thank you for your December 8, 1987 comments on the subject project. Your objections to the selection of your property for the reasons given are noted and will be considered in the selection of the school site. In this regard, we offer the following responses to your comments:

1. Traffic - We agree that the traffic on Mamalahou Highway is heavy during the morning and afternoon peak-hour traffic. However, the existing Konawaena Elementary School traffic is already in the area described. Therefore, the new Konawaena Elementary School traffic should disperse the present traffic around the existing Konawaena High and Elementary School access road.
2. Access Road - The information on your access roadway will be incorporated in the EIS and considered during selection of the school site.
- 3a. Soils - The EIS Preparation Notice indicates most of the alternative sites are suitable for pasture to truck crops which confirms your assessment of your site.
- 3b. Land Use - The existing cattle operation on the site is a negative factor for the selection of your site and will be considered along with other factors in selecting the new school site.
4. Drainage - Drainage improvements will be provided according to County requirements when the new school site is developed. These include a detention basin or dry-wells to dispose of the additional surface runoff created by the school.

X-16

Mr. Jack B. Greenwell
Page 2

Ltr. No. (P) 2126.7

5. Attractive Nuisance - The attractive nuisance of cattle adjacent to the school is recognized, but this problem should be mitigated with fences and other appropriate measures.

6. Land Ownership
No comments.

7. Road Junction Proximity - The proposed access to the new school is approximately 900 feet from the existing Konawaena Road. This separation is considered more than adequate to minimize traffic conflicts on Mamalahou Highway.

8. Alternative Site - Alternative Site 4 was selected from the area you suggested. However, it was deleted from further consideration because the long and steep access road to the site was deemed hazardous for school buses. Undeveloped areas around Site 4 did not meet the minimum size criteria of 8 acres of relatively flat land. Therefore, no sites were deemed viable in the area below the Kealahou Post Office.

9. Objection - No comments.

10. Permission - Our consultants indicated that they accessed only areas that appeared to be open to the public to take pictures and did not cross through any gates.

11. Public Opinion - Please note that the Environmental Impact Assessment is not a final document. Its purpose is to initiate the process we are presently going through to obtain input from the property owners as well as the general public on various matters including traffic congestion.

We appreciate your input for this project.

If there are any questions on this matter, please call Mr. Mark Yamabe of the Planning Branch at 548-7660.

Very truly yours,

J. Tomimaga

TEJUANE TOMINAGA
State Public Works Engineer

HY:jk

RECEIVED

DEC 2 8 42 AM '87

MAIL ROOM

PALIKA RANCH

William J. Paris, Jr.

November 30, 1987

Mr. Mark Yamabe
Division of Public Works
Department of Accounting & General Services
P.O. Box 119
Honolulu, HI 96810

Dear Sir,

X-17

This is to inform you that I am a co-trustee for the Mm. J. Paris, Sr. Trust, the owner of THK 7-9-08, Parcel 1. I was shocked and angered to read in the West Hawaii Today, a local newspaper, that your department was preparing an EIS for THK 7-9-08 and the adjoining parcel in 7-9-09 for the Department of Education as a possible location for Konaheana Elementary School. I was further angered, after being informed by Miss Stephanie Ackerman, that a public hearing concerning this matter was being held at Konaheana School on the evening of November 23, 1987. She had read about this meeting in the Honolulu Advertiser.

My cousin, Agnes Paris McArthur Smith (Mrs. Sydney H. Smith), of Kailua, Oahu and her heirs are the owners of THK 7-9-09 and had no information concerning this matter until I informed her by phone.

To me, this represents government at its lowest and most high handed level, when one of its agencies proceeds with a plan without conferring or communicating with the effected property owners prior to publication of notice in a newspaper.

These properties were acquired in 1849, during the Great Mahele, by my great grandfather, William Johnson, and have remained in the ownership of family members ever since then. We have great love for this land and enjoy its rural atmosphere.

My home is located on THK 7-9-08, Parcel 14 and adjoins THK 7-9-08, Parcel 1, one of the parcels the EIS is being prepared for. The boundary of 7-9-08-01 is fifteen feet from the south side of my home in which our three bed rooms are located. The home was completed by my parents in 1926. My sister, Mrs. Margaret A. Schattauer, and I were raised in it. It served as home to my parents until their deaths and then was inherited by me in 1980. My wife and I enjoy our privacy and life style and will employ all means legally possible to maintain it.

P.O. Box 229
Keolu-Hua, Hawaii 96750
609-899-9929
322-3113

1
2

THK 7-9-08-01 is a vital part of Palika Ranch, which is owned by me, as the saddle-house, blacksmith shop and shipping facilities are located on it. Four and a half acres are in macadamia nuts and coffee and four and a half acres are in pasture.

Portions of 7-9-09 are leased to the following individuals, by my cousin; Mr. Nathan Libarios, Mr. Robert Fujino, and Mr. Richard Tanaka for the purpose of raising coffee, macadamia nuts and avocados;

These parcels of property are some of the best agricultural lands as evidenced by their production 140-180 bags of coffee cherry per acre per annum. According to the state plan, good agricultural lands should remain in agricultural production.

My cousin, Agnes P. M. Smith, has already written you about this matter, and I trust that you will give our comments consideration.

Yours truly,

William Johnson Paris, Jr.
William Johnson Paris, Jr.

cc: Governor John Waihee



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 DIVISION OF PUBLIC WORKS
 P. O. BOX 111, HONOLULU, HAWAII 96833

PUKUI S. HIGATA
 CHIEF CLERK

ELI KISHU
 SENIOR CONTRIBUTOR

LETTER NO. (P)2104.7

Mr. William J. Paris, Jr.
 Page 2

Ltr. No. (P)2104.7

Please be assured that your input will be considered in developing the site selection and EIS for this project. If there are any questions on this matter, please call Mr. Mark Yamabe of the Planning Branch at 548-7660.

Very truly yours,

Teuane Tomhinaga

TEUANE TOMHINAGA
 State Public Works Engineer

MY:jnt

Mr. William J. Paris, Jr.
 P. O. Box 229
 Kealahou, Hawaii 96750

DEC 16 1987

Dear Mr. Paris:

Subject: Konaheena Elementary School
 Site Selection/EIS

Thank you for your November 30, 1987 letter to Mr. Mark Yamabe commenting on the subject project. A public informational meeting, which was scheduled and arranged by the Department of Education (DOE), was held in Kona on November 24, 1987. The purpose of the meeting was to notify the community at-large that the DOE intended to select a new school site and was considering several alternative sites. We regret that this seemed "high handed" to you.

Please note that this is the first of a series of steps intended to solicit input from the community as well as the property owners of the alternative sites. Since Mr. William J. Paris, Sr., is the property owner for one of the alternative sites being considered, a copy of the EIS Preparation Notice was previously sent to him by DAGS. As co-trustee, you or the other co-trustee should have received the report by now. Copies of this document were also sent to various State and County agencies, legislators, and community groups for their input as part of the EIS Consultation Phase.

Based on the input received, the EIS will be prepared and distributed to the public again as part of the EIS Public Review Phase. Any additional input received will be incorporated into the final EIS which will then be submitted to the State Office of Environmental Quality Control. This procedure will help to insure that all available information and comments pertinent to selection of the site have been reviewed. A recommendation on a site for the school will be made only after the EIS is completed.

Village where congestion is now a problem, would certainly intensify this.

Under the criterion for Flora (Page II-4) it is stated that "the loss of vegetation by the clearing and grading of the school site will be offset by the grading and landscaping of the campus." It would be difficult to convince a farmer who has labored ten years developing land that is now becoming productive, that this is an offset. All of this property is planted in coffee and macadamia nuts. My original lease to Robert Fujino dated April 1, 1978, provided for a minimum rental during planting and developing time. With that now accomplished, we have agreed on a new lease to be effective April 1, 1988.

Sincerely,

Agnes P. Smith
Agnes P. Smith

346 Ilimalia Loop
Kailua, Hawaii 96734
December 7, 1987

DEC 9 9 00 AM '87
RECEIVED

State of Hawaii
Dept. of Accounting & General Services
Division of Public Works
P. O. Box 119, Honolulu, HI. 96810

Gentlemen:

Subject: Konawaena Elementary
School S/S/ Site Selection

Receipt of letter No. (P)2035.7 dated December 1, 1987 and E-I Assessment is acknowledged.

I have a lifetime ownership of the property identified by Tax Map Key 7-9-09-11 consisting of 5.883 acres. This property passes to my heirs under the term of the will of John D. Johnson, dated June 6, 1929. It is partially included in Site I (Figure 13).

The frontage bordering the Mamalahoa (Hawaii Belt Road) is 270 feet, 20 feet is required for a roadway running mauka. Assuming the availability of 250 front foot width and the criterion of length to width ratio not to exceed 2.5 to 1 (page III-2) a depth of 625 feet not to result, providing only 3.587 acres, less than one-half the acreage needed to meet the requirement of 8 acres (usable) prescribed. (Page III-1).

That portion of Site 2 represented by Tax 7-9-08 appears to have a lesser frontage (approximately 150') which, under the width/length criterion, would yield less than two acres.

While I am not qualified to address the technical aspects of this study, it would appear that the provision of a playground and parking facilities (I-2) on a 10-15' Grade (Figure 5) would have limitations.

The subject of traffic congestion (Page V-1) is addressed only as it pertains to the present site of Konawaena Elementary School. Transferring some of this to Kailua

1	Site I	Site I
2	Site II	Site II
3	Site III	Site III
4	Site IV	Site IV
5	Site V	Site V
6	Site VI	Site VI
7	Site VII	Site VII
8	Site VIII	Site VIII
9	Site IX	Site IX
10	Site X	Site X

JANE WAINES
SECRETARY



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 115, HONOLULU, HAWAII 96810

RUSSEL L. NAKATA
COMPTROLLER
SEN EITSEU
DEPUTY COMPTROLLER

LETTER NO. (P)1001.8

JAN 7 1988

Mrs. Agnes P. Smith
Page 2

Ltr. No. (P)1001.8

Ms. Agnes P. Smith
346 Ilimalia Loop
Kailua, Hawaii 96734

Dear Ms. Smith:

Subject: New Konawaena Elementary School
EIS Consultation Phase

Thank you for your December 7, 1987 comments on the subject project. In this regard, we offer the following responses to your comments:

1. Size - A road frontage of 400 feet may be obtained by combining the frontage of your property with the frontage of an adjacent property as shown in the EIS Preparation Notice. The minimum school acreage requirement of 8 acres would be met while satisfying the length to width ratio criteria described in Section IV.A.1.a.(3) of the EIS Preparation Notice. However, the shape rating for Site 1 will be revised to "poor".
2. Slope - The slope of each site has been evaluated and rated in Section VI.B.1.(2) of the EIS Preparation Notice. Since slopes greater than 10% are common throughout the service area, candidate sites will require extensive grading and terracing work as part of site preparation.
3. Traffic - The effects of increased traffic and specific mitigative measures will be determined by a traffic study as part of the design phase of the project. However, we anticipate widening of the roadway for traffic channelization will be needed.
- 4a. Flora - Grassing and landscaping will be used as mitigative measures to offset the loss of vegetation.

4b. Agriculture - The loss of agricultural land for the school development is evaluated as an impact separate from the loss of vegetation. DAGS has included items on use of prime agricultural lands plus displacement of farms and businesses in the site selection criteria to minimize the school's impact on agriculture.

We appreciate your input for this project.

If there are any questions on this matter, please call Mr. Mark Yamabe of the Planning Branch at 548-7660.

Very truly yours,

J. Tomiyama
TEJUANE TOMINAGA
State Public Works Engineer

MY:jk

XI. EIS PUBLIC REVIEW PHASE, COMMENTS AND RESPONSES

The following agencies, organizations and individuals provided comments on the Site Selection Study and Draft EIS. A total of 15 comment letters were received.

An asterisk (*) indicates those with comments which required substantive responses. The comment and response letters are reproduced in this section. All other letters did not require substantive responses and are reproduced in this section.

A. Federal Agencies

- *1. Department of the Army, U.S. Army Engineer District, Honolulu
2. Department of the Navy
3. U.S. Department of the Interior, Fish and Wildlife Service

B. State Agencies

1. Department of Business and Economic Development
2. Department of Defense
- *3. Department of Health
- *4. Department of Land and Natural Resources
- *5. Department of Transportation
6. Environmental Center

C. County Agencies

1. Department of Parks and Recreation
- *2. Planning Department
3. Department of Water Supply

D. Organizations and Individuals

1. PTSA Special Committee to Facilitate the Relocation of Konawaena Elementary School
- *2. Jack B. Greenwell
3. Agnes P. Smith



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 330
FT. SHAFTER, HAWAII 96813

REPLY TO
ATTENTION OF:

Planning Branch

May 6, 1988

Mr. Fujii

Mr. Miura

Dr. Marvin Miura
Office of Environmental Quality Control
465 South King Street, Room 184
Honolulu, Hawaii 96813

Dear Dr. Miura:

Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the Site Selection for the New Konaewaena Elementary School, Kona, Hawaii. The following comments are offered:

a. Since none of the potential project sites are located near waters of the United States or adjacent wetlands, none would require a Department of the Army (DA) permit. However, it appears that a wastewater treatment plant may be needed to service the school, and construction of such a plant may require a DA permit. Please contact Operations Branch (telephone 438-9258) if you have questions concerning permits.

b. Our earlier comment regarding flood hazard designations (letter, DEIS page X-2) is still current: based on the most recent (March 31, 1988) Flood Insurance Rate Maps, the possible project sites all appear to be located in Zone X, unshaded (areas outside of the 500-year flood plain).

Sincerely,

Clarence Fujii
Acting Chief, Engineering
Division

Copy furnished:

Mr. Mark Yamabe
Division of Public Works, Planning Branch
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810-0119



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

P. O. BOX 119, HONOLULU, HAWAII 96810

UTILITY NO. (P)1530.8

JUN 21 1988

Mr. Clarence Fujii
Acting Chief
Engineering Division
U. S. Army Engineer
District, Honolulu
Department of the Army
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Mr. Fujii:

Subject: New Konaewa Elementary School
Public Review Phase

Thank you for your May 6, 1988 comments on the subject project. In this regard, we offer the following responses to your comments:

1. Permits - All of the potential sites are located above elevation 1,300 feet and are far from navigable waters and known wetlands. Therefore, as discussed with Mr. Warren Kansai of your staff, a Department of the Army permit will not be required for construction of proposed wastewater treatment plants.
2. Flood Zone - The EIS will be revised to state that the potential project sites are located in Zone X, unshaded (areas outside of the 500-year flood plain).

We appreciate your input for this project.

Very truly yours,

TEUANE TOMIMAGA
State Public Works Engineer

MY,jk

DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96849-5000

REF ID: A66500
5090 (248)
Ser NSB/864



Dr. Marvin J. Miura, Director
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Mr. Miura:

DRAFT ENVIRONMENTAL IMPACT STATEMENT
SITE SELECTION FOR THE NEW KONOHAENA ELEMENTARY SCHOOL

The Draft Environmental Impact Statement for the Site Selection for the New Konoaena Elementary School has been reviewed and we have no comments to offer. Since we have no further use for the EIS, it is being returned to your office.

Thank you for the opportunity to review the Draft.

Sincerely,

Ernest Kosaka, Field Supervisor
Office of Environmental Services
Pacific Islands Office

cc: Dept. of Accounting & General Services

RECEIVED
APR 12 8 35 AM '88
DIV. OF PUBLIC WORKS
BAGS

Enclosure
Copy to: Yamabe
Mr. Mark Yamabe
Division of Public Works Planning Branch
Department of Accounting and General Services
P. O. Box 119
Honolulu, Hawaii 96810-0119

United States Department of the Interior
FISH AND WILDLIFE SERVICE
100 ALA MOANA BOULEVARD
P. O. BOX 50187
HONOLULU, HAWAII 96810

ES
Room 6307
12 APR 1988



Dr. Marvin Miura
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Re: Draft Environmental Impact Statement for the Site Selection of the New Konoaena Elementary School, Kona, Hawaii

Dear Dr. Miura:

We have reviewed the referenced material and find that due to its nature, the proposed project will have no significant deleterious impact on fish and wildlife resources. Please do not hesitate to call on us if we may be of further assistance.

We appreciate this opportunity to comment.

Sincerely yours,

Ernest Kosaka, Field Supervisor
Office of Environmental Services
Pacific Islands Office

cc: Dept. of Accounting & General Services

RECEIVED
APR 13 8 28 AM '88
DIV. OF PUBLIC WORKS
BAGS





Joseph K. Conant
Executive Director

STATE OF HAWAII
Department of Business and Economic Development
Housing Finance and Development Corporation

P. O. BOX 17897
HONOLULU, HAWAII 96813

88:PING/1741JT

April 15, 1988

BY MAIL

TO

RECEIVED
APR 21 8 41 AM '88
DIV. OF PUBLIC WORKS
JACS

Dr. Marvin T. Miura, Interim Director
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Mr. Miura:

Re: Draft Environmental Impact Statement (EIS) for
the Site Selection for the New Konawaena
Elementary School, Kona, Hawaii

We have reviewed the subject draft EIS and have no comments
to offer. Thank you for the opportunity to comment.

Sincerely,

JOSEPH K. CONANT
Executive Director

cc: Mr. Mark Yamabe
Dept. of Accounting and General Services

RECEIVED

STATE OF HAWAII
DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT
HOUSING FINANCE AND DEVELOPMENT CORPORATION
DIVISION OF PUBLIC WORKS
JACS

April 13, 1988

Engineering Office

Dr. Marvin T. Miura
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Draft EIS for the Site Selection for the New
Konawaena Elementary School, Kona, Hawaii
Kona, Hawaii

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

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

Yours truly,

signed

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

Enclosure

JOHN WILSON
DEPARTMENT OF HEALTH



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 329
HONOLULU, HAWAII 96809

May 13, 1988

JOHN C. LEMMON, M.D.
DIRECTOR OF PUBLIC HEALTH

IN REPLY, PLEASE REFER TO:
EPMISD

JOHN WILSON
DEPARTMENT OF HEALTH



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 119, HONOLULU, HAWAII 96809

JUL 13 1988

RUSSELL S. HAGATA
COMPTROLLER
STATE COMPTROLLER
LETTER NO. (P) 1622

MEMORANDUM

To: Dr. Marvin Miura, Director
Office of Environmental Quality Control

From: Deputy Director for Environmental Health

Subject: Draft Environmental Impact Statement (DEIS) for Site Selection for
New Konawaena Elementary School, Kona, Hawaii

Dr. Bruce S. Anderson
Deputy Director
Department of Health
State of Hawaii
Honolulu, Hawaii

Dear Dr. Anderson:

Subject: New Konawaena Elementary School
Public Review Phase

Thank you for allowing us to review and comment on the subject DEIS.

The DEIS indicates that the proposed elementary school will have a projected peak student enrollment of approximately 930 students. The EIS should provide details of projected waste flow, treatment facilities or disposal system to be used.

Thank you for your May 13, 1988 comments on the subject project. The EIS will be revised to include the following:

1. Projected Wastewater Flow - The design average wastewater flow for a peak enrollment of 930 students is presently estimated at 20,000 GPD.
2. Type of Disposal System - The final selection of a wastewater treatment and disposal system will be determined during the project design phase with consultation and approval of your Department. One of the alternatives is the system which has a septic tank with a percolation blanket or leaching field.

We appreciate your input for this project.

Bruce S. Anderson
BRUCE S. ANDERSON, PH.D.

Very truly yours,
Russell S. Hagata
RUSSELL S. HAGATA
State Comptroller

JOHN WAINES
DIRECTOR OF LAND



RECEIVED

MAY 15 1988

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 521
HONOLULU, HAWAII 96809

WILLIAM W. PATZ, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

LIBERT E. LANGRISH
SECRETARY

AGRICULTURE DEVELOPMENT
PROGRAM
ADULTIC RESOURCES
CONSERVATION AFFAIRS
CONSERVATION AFFAIRS
RECREATION DEVELOPMENT
CONSERVATION AFFAIRS
COUNTRY AND WILDLIFE
LAND MANAGEMENT
SITE PLANS
WATER AND LAND DEVELOPMENT

File No.: 88-455
Doc. No.: 3287

MAY 4 1988

Dr. Marvin Miura, Director
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura,

Subject: Draft EIS for the Site Selection of the New
Konaena Elementary School

We have reviewed the Draft EIS text (IV: 4-6) and the
archeological survey report (App. B: Shapiro, Haun and Rosendahl
1988. Archeological Reconnaissance Survey, Konaena Elementary
School Sites.).

Since this is a direct State undertaking, compliance with
Chapter 6E, H.R.S., must occur in consultation with the Historic
Sites Section. Thus, this letter will review the findings in the
Draft EIS both for the EIS review and for Chapter 6E compliance.

Our concerns are that (1) the project areas have undergone
adequate archeological survey coverage, determining how many, if
any, historic sites are present, (2) sufficient information has
been gathered from each site to evaluate their significance, (3)
the significance of each site is correctly assessed, clearly
identifying the significant sites, (4) effects to the significant
sites are determined, and (5) if significant sites are affected,
an acceptable mitigation plan is presented.

1. Have the Project Areas Undergone Adequate Survey?

We believe that the four parcels have been adequately surveyed
and all historic sites have been found--totalling 5 at Alternative
Parcel 1, 2 at Parcel 2, 5 at Parcel 3, and 5 at Parcel 5.

This is a total of 17 sites, not 16 as noted in the Draft
EIS. The two different areas of the Kona Field System must be
given site numbers and be considered as sites within the historic
sites. The Hawaii Department of Land and Natural Resources should be

Dr. Marvin Miura, Director
Page 2

2. Has Sufficient Information Been Gathered to Evaluate the
Significance of the Sites?

The report provides sufficient information to evaluate
significance in 3 of the 4 parcels. In Parcel 3, we believe some
additional information is still needed to evaluate the
significance of two sites--T-8 and the Japanese School. T-8 is a
historic wall which follows a ridge. The report states that the
ridge may be a feature of the Kona Field System but, without
excavation, was unable to verify this point (p. 16). In order to
evaluate the significance of the Japanese School, we would need,
initially, to have a photograph of it and additional background
research to establish its nature, age, and function may need to be
undertaken.

3. Is Significance Correctly Assessed?

Table 1 of the Draft EIS identifies 2 significant sites and 14
sites that are no longer significant. (This actually is 3 and 14
with the two Kona Field remnants each considered to be sites.) We
agree that 12 of the sites are no longer significant, and we agree
that the 2 Kona Field System sites are significant. However, we
believe that 1 other site is significant and 2 need more
evaluation before their significance can be assessed.

The other site that we believe is significant is T-14 in
Parcel 1. We believe that this site is significant for its
information content relevant to early 1900s land use (probably
ranching). It contains numerous artifacts on the surface (pp. 12)
which have yet to be documented and analyzed.

The two sites that need more evaluation are noted in Item 2
above. One of these, the Japanese school is considered
significant in Table 1, and we believe that this determination is
premature.

Also, while we agree that the 2 Kona Field System remnant site
in Parcels 1 and 5 are only significant for their information
content, the Field System as a district is significant for
criteria "a" (reflecting broad events in history), "b" (associated
with a significant person in history), "c" (embody examples of
site types and represent a significant district of multiple
sites), "d" (information content), and for its cultural
significance (to the Hawaiian ethnic group). This should be
clarified in the EIS text.

Dr. Marvin Miura, Director
Page 3

Are the Number of Significant Sites in Each Parcel Clearly Identified?

Such a statement is vital for this EIS to evaluate the possibility of using the different parcels. The Draft EIS, however, lumps together all the sites in the discussion and does not discuss them by alternate school parcels. This could be stated as follows:

1. Parcel 1--T-14 and the site remnant of the Kona Field System, both significant solely for their information content.
2. Parcel 2--no significant sites.
3. Parcel 3--T-B and Japanese school may be significant, but more information is needed before this can be determined.
4. Parcel 5--The site remnant of the Kona Field System, significant solely for its information content.

4. Is the Effect Determination Accurate?

The Draft EIS text (IV-4) states that historic sites will not be impacted at the alternative school parcels, as none are recommended for preservation. We disagree with this assessment. Only in Parcel 2 will there be "no effect" to significant historic sites because there are no significant sites there. The other 3 parcels contain, or may contain, significant historic sites and these are likely to be "adversely affected" by school construction.

We believe that these adverse effects can be altered to "no adverse effects" in Parcels 1 and 5, if an acceptable mitigation plan is developed. In Parcel 3, the significance of the 2 sites must be established before impact assessments can be made.

5. Is an Acceptable Mitigation Plan Presented?

In the Draft EIS text (IV-4-5), the consulting archeologists' recommendations for more data collection (technically archeological data recovery) at the 2 sites in the Kona Field System and the Japanese school are noted, as well as the possibility of preservation through design efforts. However, no clear mitigation plan is offered. Thus, at this point, we must conclude that an acceptable mitigation plan has not been offered for the treatment of significant historic sites at either Parcel 1 or Parcel 5.

Summary

At this point, DOE/DAGS needs to address a number of items in order for our office to consider the EIS to be acceptable and for compliance with Chapter 6E. It should be easy to quickly resolve these concerns. These items are as follows:

Dr. Marvin Miura, Director
Page 4

1. The EIS needs to be revised to indicate that the total number of sites to 17 and to clarify which sites are in which parcel.
2. The significant determinations or the sites need to be agreed upon. DOE/DAGS should consult with our office to clarify this situation. Then, assuming we are in agreement, we can:
 - a. Fix the significance for 15 of the 17 sites.
 - b. Emphasize that the significance of 2 sites in Parcel 3 cannot yet be determined.

The EIS should then be revised to indicate this situation. Alternatively, more work could be done for these sites, enabling a significant evaluation to be fixed for all the sites.

3. The EIS needs to be revised to conclude the Existing Conditions with a statement clearly indicating that Parcel 1 has 2 significant sites, Parcel 2 no significant sites, and Parcel 5 only 1 significant site.

4. Impact Determinations need to be improved. DOE/DAGS should consult with our office to clarify this situation.

Presumably, we will be in agreement that a school at Parcel 2 would have "no adverse effect" and schools at Parcels 2 and 5 will have a potentially "adverse effect", which can be altered to "no adverse effect" through archeological data recovery and/or preservation. If we agree, then:

- a. We can write a letter agreeing with the determination.
- b. The EIS needs to be revised.

5. Mitigation plans need to be clarified and agreed upon for Parcels 2 and 5. DOE/DAGS should consult with our office to clarify this situation. Presumably, we will be in agreement that two options are available, archeological data recovery and/or preservation, and that the mitigation plan cannot be specified until a parcel is selected. This would mean that if one of these parcels is selected, then DOE/DAGS would prepare a more specific mitigation plan at that time and that the plan must be approved by the State's Historic Site Section. If this is the case, then:

- a. we can write a letter for Chapter 6E compliance, fixing this general mitigation plan.
- b. the EIS needs to be revised to clearly state the general plan.

Thank you for the opportunity to comment on this project.

Very truly yours,



William W. Paty, Chairman
Board of Land and Natural Resources

State of Hawaii Inventory of Historic Places
 Numbers Assigned to Sites
 Identified in the New Konaena Elementary School
 EIS Studies

Temporary Number Assigned by FHRI	State Site Number
<u>Parcel 1</u>	
Kona Field System remnant	
T-11	11,080
T-12	11,081
T-13	11,082
T-14	11,083
	11,084
<u>Parcel 2</u>	
T-9	11,085
T-10	11,086
<u>Parcel 3</u>	
T-5	11,087
T-6	11,088
T-7	11,089
T-8	11,090
Japanese School	11,091
<u>Parcel 5</u>	
T-1	11,092
T-2	11,093
T-3	11,094
T-4	11,095
Kona Field System remnant	11,096

All inventory numbers are prefaced by 10-37-. 10 refers to Hawaii Island, 37 to the U.S.G.S. quadrangle map (Kealahou) where the sites are located.

MEMO

To: Mr. Mark Yamabe
DAGS, Planning Branch
From: Alyson Yim
Date: May 16, 1988
Subject: New Konawaena Elementary School Draft EIS
Response to DLIR Historic Sites Office

As a result of meeting with Ross Cordy of the Historic Sites Office and Dr. Paul Rosendahl, our archaeological consultant on May 13, 1988, we have revised the text of the EIS (pgs. IV-4 thru 6) to reflect our agreements. The revisions were made to clarify 1) the location and significance of the sites and 2) the mitigation plan to be prepared. We expect the Historic Sites Office to write another response letter regarding our compliance with their comments.

OTHER TRAINING
EXPERIENCE OR
EDUCATION



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 521
HONOLULU, HAWAII 96808

May 24, 1988

Office of Environmental Quality Control
465 South King St., Room 4
Honolulu, Hawaii 96817

Dear Sirs:

SUBJECT: Historic Preservation Review -- New Konawaena Elementary School
Draft EIS & Chapter 6E, H.R.S.
Multiple, North Kona, Hawaii

The applicant's planners, Fukunaga & Associates, met with staff in our Historic Sites Section on May 13, 1988 on this matter, and on May 20, 1988 they submitted to us a final draft of the significance assessments for the historic sites and the revised EIS text.

At this point, we agree with the significance assessments. 12 of the historic sites are "no longer significant" and 5 are still significant -- 4 solely for their information content and one possibly for multiple criteria.

We also agree with the effect determination that any effects can be altered to "no adverse effect" with the preparation of an acceptable data recovery plan.

We also agree with the general mitigation plan of archaeological data recovery and/or preservation. Further, we agree that there is no need to prepare a specific mitigation plan until a school site is selected. When the selection is made and if significant historic sites are on the parcel selected, then to comply with Chapter 6E, the applicant has agreed to submit a more specific mitigation plan to our Historic Sites Section for review and approval.

We believe that the revised EIS text adequately covers these historic preservation review concerns.

Very truly yours,

WILLIAM W. PATY
Chairperson and State
Historic Preservation Officer

CC: Fukunaga & Assoc., Inc.
Mark Yamabe, Planning, DAGS ✓
Paul H. Rosendahl Inc.

FUKUNAGA & ASSOCIATES, INC.



19.002.1j(8)
2648
STP 8.2981

- 4. Plans for all work within the state highway right-of-way must be submitted for our review and approval. The applicant/developer should bear all costs for these improvements.

Thank you for this opportunity to provide comments.

Very truly yours,
Edward Y. Hirata

Edward Y. Hirata
Director of Transportation

DT:ko
cc: HWY-P, STP(dt)
Mr. Mark Yamabe, DAGS

July 13, 1988

Dr. Marvin Miura, Director
Office of Environmental Quality Control
465 South King Street, Room 115
Honolulu, Hawaii 96813

Dear Dr. Miura:
Draft Environmental Impact Statement (EIS)
Konaheana Elementary School
Kona, Hawaii

We have the following comments on the draft EIS for the Proposed Konaheana Elementary School:

1. A Traffic Impact Analysis (TIAR) report should be prepared assessing the impacts of the traffic generated by the project on Hamalahoa Highway. Include in the report, mitigation measures required to alleviate traffic congestion as well as to improve safety, where applicable.
To expedite review, please have the developer submit calculations used in deriving the numbers shown in the TIAR. The TIAR should be included in the EIS.
2. Existing drainage pattern should be maintained as much as possible. It is the responsibility of the applicant/developer to provide proper drainage for storm run-off and to assess the effect when drainage flow capacities of the on-site system are exceeded. Excess run-off should not be diverted to uninhabited areas (Page IV-10).
3. On page IV-12, we suggest that the site be selected based on traffic impact (as one factor) rather than initiating a traffic impact analysis after a site is selected.



STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
 P. O. BOX 114, HONOLULU, HAWAII 96810

RUSSELL M. NAGATA
 COMPTROLLER
 NEW BRIDGE
 DEPT. COMPTROLLER

LETTER NO. (P)1776.8

SEP 1 1988

Honorable Edward Mirata
 Director
 Department of Transportation
 State of Hawaii
 Honolulu, Hawaii

Dear Mr. Mirata:

Subject: New Konaena Elementary School
 EIS Public Review Phase

In response to your July 13, 1988 comments on the subject project, we provide the following:

1. TIAR - Since the existing school and all alternative school sites are accessed by Hamalanhoa Highway, the traffic volume in the service area will not change due to relocation of the elementary school. Previous experience with school projects of a similar nature indicates that traffic impacts can be mitigated with proper design measures such as widening the highway in the front of the school for traffic channelization. However, the extent of traffic mitigation measures cannot be determined until more detailed information such as ingress and egress points are known and a TIAR is prepared. Therefore, we plan to do the TIAR in accordance with DOT requirements after the selection of a school site.

2. Drainage - The EIS will be revised to indicate the following:
 - a. The existing drainage pattern will be maintained as much as possible.
 - b. All references to diversion of excess runoff will be deleted.

XI-11

Honorable Edward Mirata
 Page 2

Letr. No. (P)1776.8

3. Site Selection - We acknowledge that traffic impact is an important item to consider in selecting a school site. However, we believe that other equally important items need to be considered.
4. Approval - Plans for all work within the State highway right-of-way will be submitted for your review and approval.

We appreciate your input for this project.

Very truly yours,

 RUSSELL M. NAGATA
 State Comptroller



University of Hawaii at Manoa

Environmental Center
Crawford 317 - 2501 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 918-7301

May 23, 1988
RE:0498

Dr. Marvin Miura, Director
Office of Environmental Quality Control
Department of Health
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Draft Environmental Impact Statement
Konawaena Elementary School
Kona, Hawaii

The Environmental Center has reviewed the above referenced document with the assistance of Michael Graves, Anthropology; Jon Hatsuoka, Social Work; and Nancy Kanyuk, Environmental Center. The project proposes to relocate the existing Konawaena Elementary School. Hence, the document discusses potential environmental impacts of four potential school sites.

Archaeology

Although the survey report is complete and does appear to have identified all of the archaeological features visible for ground surface inspection, it is necessary to consider the individual features in a collective sense, as part of a larger complex which are very likely connected to features that lie outside the project boundaries. It is in this sense that several of the features identified through the survey are likely to have cultural and interpretive significance.

Since the occurrence of these features is most concentrated in School Site 1 and Site 5, our reviewers recommend that these two sites be ranked lower than either School Site 2 or School Site 3 in terms of the selection process. The Old Japanese School on School Site 3 very likely has cultural significance, and thus should be ranked lower for selection than School Site 2. Thus, if historic resources are considered in the selection process for the new school location, School Site 2 would be recommended, on the basis of the survey conducted.

1-11-88

Dr. Marvin Miura, Director

-2-

May 23, 1988

Wastewater

Since the Department of Health has designated all the potential sites above the Underground Injection Control or "no-pass" line, the school site will require "an alternate method to cesspools" (IV-10). Therefore the Final EIS should provide specific details of a wastewater treatment works, addressing exactly what type of system will be used as well as how the treated waste will be disposed of. Our reviewers have expressed concern that the Cavitette system might not be adequate for the needs of the project.

Traffic

Construction of a school necessitates a detailed examination of traffic impacts, both in terms of road usage and in terms of safety. Therefore, the Final EIS should provide a traffic impact study.

Thank you for the opportunity to comment on this Draft EIS. We hope our comments will be helpful in preparing the final document.

Yours truly,

Jacquelin N. Miller

Jacquelin N. Miller
Associate Environmental Coordinator

cc: Mark Yamabe, DACS
L. Stephen Lau
Michael Graves
Jon Hatsuoka
Nancy Kanyuk



University of Hawaii at Manoa

Environmental Center
Crawford 317 • 2350 Campus Road
Honolulu, Hawaii 96822
Telephone (808) 948-7361

June 24, 1988

Ms. Alyson Yim
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, Hawaii 96814

Dear Ms. Yim:

Response to Comments
Draft Environmental Impact Statement
Konawaena Elementary School
Kona, Hawaii

The Environmental Center has reviewed the revisions made in response to our comments on the above referenced document. As per our telephone conversation of June 21, 1988, we find your response adequately addresses the concerns we had expressed.

Thank you for your concern and the opportunity to comment on this response. We hope our comments have been helpful in preparing the final document.

Yours truly,

Jacquelin N. Miller

Jacquelin N. Miller
Associate Environmental Coordinator

cc: OEQC
Nancy Kanyuk

COPY

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

23 AUPUNHI STREET • HILLO, HAWAII 96720



April 12, 1988

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APR 14 8 15 AM '88
DIV. OF PUBLIC WORKS
DAGS

Marvin Miura, Ph.D.
State Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, HI 96813

DRAFT EIS FOR THE SITE SELECTION FOR THE NEW
KONAWAENA ELEMENTARY SCHOOL, KOHA, HAWAII

We have no additional comments to the subject document.

H. William Sewake

H. William Sewake
Manager

QA

cc ~~Mr.~~ Mark Yamabe

James W. Callender
Mayor

Ronald Ibarra
Managing Director



DEPARTMENT OF PARKS & RECREATION

COUNTY OF HAWAII

Patricia G. Engelhard
Director

Ronald Okamura
Deputy Director

April 20, 1988

RECEIVED
APR 22 8 20 AM '88
DIV. OF PUBLIC WORKS
DAGS

Dr. Marvin T. Miura, Interim Director
Office of Environmental Quality Control
465 South King St. Room 104
Honolulu, HI 96813

Subject: New Konawaena Elementary School - Site Selection Report
and Draft EIS

Dear Dr. Miura:

We have reviewed the subject report and draft EIS and have no adverse
comments to offer.

Thank you for the opportunity to review the document.

Sincerely,

Patricia Engelhard

Patricia Engelhard
Director

PE:GH:af

encl. (report being returned)

cc: DAGS - Attn: Mr. Mark Yamabe

COPY

PLANNING DEPARTMENT
28 AUPUNI STREET
HONOLULU, HAWAII 96820

COUNTY OF HAWAII
HILA, HAWAII 96720

Mr. Marvin Miura, Ph.D.
May 16, 1988

Dr. Marvin Miura, Ph.D.
May 18, 1988
Page 2

Page VIII-1

List of Necessary Approvals. The conclusion in paragraphs 2, 3, and 4 are entirely incorrect. Any other references to County Zoning, County General Plan, and State Land Use Commission which reflect the same misconceptions should be corrected. We would be glad to assist the writers in clarifying these references.

In State Land Use Agricultural Districts, a Special Permit applied for through the County Planning Commission could permit a school. Such a special permit would require a public hearing. In urban districts (portion of Site 5) a Use Permit request to the County Planning Commission would be the process to follow.

A-7

As a consequence of the misconception held by the writers (see comment above, Page VIII-1), the giving of grades (good, fair, poor) to these "criteria" loses its relevancy.

A-9

Even those sections of the Mualaha Highway which run through the built up areas of the various communities severely lack sidewalks. Only in a portion of Kainaliu and in front of the Manago Hotel and Yano Hall in Captain Cook are there sidewalks. We mention this, as it may have a serious bearing on your item (7) Location, where walking distance to the school is concerned. Existing road shoulders may not always suffice for those students who will not be riding (bus or car) to school. Grade separated pedestrian ways should perhaps be considered within a certain radius of the selected school site.

A-13

Item 2.a. Our earlier comments, VIII-1 pertain to this section also.

A-20 & 22

Off-Site Development Costs. Left turn lanes at the school's intersection appear necessary. Our Department of Public Works offers the following comments on this and related sub-topics:

May 16, 1988

Dr. Marvin Miura, Ph.D.
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, HI 96813

Dear Dr. Miura:

Draft EIS Site Selection for the
New Konawaena Elementary School

Our comments on the subject Draft EIS are:
Page I-4

More current enrollment figures--for 1988--can be readily obtained by calling the school. The report uses 1986 data.

Page I-6

Urban expansion/population growth may occur in the Kalakehe area, noting ongoing State and County housing studies wherein the feeder school system might be altered and a new high school needed, in that area.

Page II-15, Item 3

The Planning Department and Police Department (Substation) also have offices in Kailua-Kona.

Page II-16, Line 7

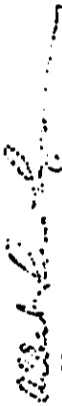
It would be more accurate to say, "The Kailua site will most likely be moved to Puunahulu." The only open pit dumping area is in Kailua/Kalakehe; all others mentioned are transfer station sites.

Dr. Marvin Mura, Ph.D.
May 18, 1988
Page 3

- *1. To minimize traffic conjection, we suggest that the new site be located away from the intermediate and high school sites.
- *2. From the traffic standpoint, Site 1 appears to be favorable, because of the following:
 - *a. From the traffic counts taken at the existing Konaena High School intersection between 7:00 and 8:00 a.m., the traffic heading north (towards Kailua) from the high school intersection is about twice the traffic heading south from that intersection. Because of this affinity of flow towards Kailua, a location on the mauka side of Mamalahoa Highway would minimize the traffic conflicts. (The mauka location would result in more right turns in and out of the school, while the makai location would encourage more left turns across opposing traffic in and out of the school.)
 - *b. Site 1 is located far enough away from the hospital and other schools to reduce the possibility of conflicts with other activities, yet it is located fairly close to the center of the school district.
- *3. Channelization of the intersection to accommodate left turn lanes and installation of traffic signals should be included as part of this project.
- *4. Provide pedestrian facilities along access roads.
- *5. Pick-up and drop-off shall be planned to be outside of the Mamalahoa Road right-of-way.
- *6. Disposal costs of both construction wastes and daily refuse at the Kailua Landfill must be accounted for and appropriately budgeted. Due to the magnitude of the project, the contractor will be required to landfill (compact and cover) his construction wastes.

Thank you for the commenting opportunity.

Sincerely,


ALBERT LONO LYMAN
Planning Director

DTtlv/ueb

cc:Mr. Mark Yamae, DACS-DPW



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 114, HONOLULU, HAWAII 96813

ALBERT LYMAN
DIRECTOR

MARVIN MURA
CONSULTANT
ALBERT LYMAN
DIRECTOR
LETTER NO. (P)1686.8

AUG 4 1988

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


Dear Mr. Lyman:

Subject: New Konaena Elementary School
EIS Public Review Phase

Thank you for your May 18, 1988 comments on the subject project. Attached are our responses to your comments.

We appreciate your input for this project.

Very truly yours,


TEUANE TOHINAG
State Public Works Engineer

HY:jk
Attachment

Attachment to Ltr. No. (P)1686.8
 NEW KONAWAENA ELEMENTARY SCHOOL
 EIS PUBLIC REVIEW PHASE

Attachment to Ltr. No. (P)1686.8
 New Konawaena Elementary
 EIS Public Review Phase

Responses to Comments dated May 18, 1988

1. Page 1-4. The report will be revised to state that the actual 1987-88 combined enrollment for Konawaena Elementary and Konawaena High and Intermediate Schools is 2,158 students, and the projected 1991 combined enrollment is 2,219 students.
2. Page 1-6. The report will be revised to state that changes to the service area boundaries for Kealahou, Hooluaia and Kahakai Elementary Schools are being planned by the Department of Education and will take effect in September 1988.
3. Page 11-15, Item 3. The report will be revised to state that the County Police Department and County Planning Department have offices in Kailua-Kona.
4. Page 11-16. The report will be revised to state that the Kailua dumping site will most likely be moved to Puunahulu and that the other sites mentioned (Keaouhou, Napoopoo, Waies, Keel and Hilolii) are solid waste transfer station sites.
5. Page VIII-1. As discussed with Ms. Alice Kawaha of your office, this section will be revised as follows:
 The development of the new school will be subject to various governmental permits and approvals, depending on the State land use and County zoning designations of the selected site. Sites 2 and 3 are in the State Land Use (SLU) Agricultural District while Sites 1 and 5 are in both the Agricultural and Urban Districts. All of the sites are zoned A-5a (Agricultural - 5 acres minimum) by the County of Hawaii.
 Schools can be developed in the SLU Urban District but are not a permitted use in the SLU Agricultural District. However, a school may be developed in the SLU Agricultural District upon approval of a petition by the appropriate State or County decision-making authority for sites less than 15 acres. In this case, the appropriate decision-making

A Use Permit must be obtained from the County Planning Commission for development of a school on a site within the SLU Urban District and zoned agricultural.

In summary, the State land use, County zoning and County permits required for the sites are as follows:

Site	State Land Use	County Zoning	County Permits
1	Agricultural/Urban	A-5a	Special & Use
2	Agricultural	A-5a	Special
3	Agricultural	A-5a	Special
4	Agricultural/Urban	A-5a	Special & Use

Both the Special Permit and the Use Permit procedures would require a public hearing and County Planning Commission approval.

The County General Plan Land Use Pattern Allocation Guide (LUPAG) map provides guidelines for development in the County. The development of a new school would be allowed with the current General Plan designations, as all sites are classified as Low or Medium Density Urban, or Alternate Urban Expansion.

6. Page A-7. Although the discussion under "list of necessary approvals" is being revised to indicate a SLU boundary amendment is not required, the criteria is still relevant for the following reasons:

- a. State Land Use District Map Designation - This item reflects compliance with the State Land Use policy of preserving conservation-zoned lands and utilizing agricultural-zoned lands only when urban-zoned lands are unavailable or unsuitable.
- b. County General Plan Designation - This item reflects compatibility with the County's General Plan for the area.
- c. County Zoning Designation. This item reflects the work involved in getting the site rezoned to permit

7. Page A-9. The criterion for location evaluates each site on the proximity of the school to the students it will serve. Please note that all of the sites it rated poor because they were not within walking distance of more than 50% of the students. The lack of sidewalks is addressed by the accessibility criterion.
8. Page A-13. See Item #6 above.
9. Page A-20 and 22.

- a. It is anticipated that development of the new school will ease localized traffic at the existing elementary/high school complex because of the resultant distribution among two sites. However, traffic at the new site will increase.
- b. The preference for Site 1 for the reasons given is noted and will be considered in the selection of the school site.
- c. We anticipate that highway improvements such as widening for traffic channelization in front of the school will be needed. However, the extent of these improvements will be determined during the design phase of the project, following the selection of a school site.
- d. The extent of pedestrian improvements will be determined during the design phase of the project, following the selection of a school site.
- e. Since the student pick-up and drop-off area may require coordination with highway improvements, specific features of roadway improvements located near the front of the school will be determined during the design phase of the project, following the selection of a school site.
- f. Site development costs are included in the EIS document primarily for comparison purposes and reflect only initial site improvement items as shown in Tables 4 and 5 in Appendix A of the EIS document. Costs associated with later phases of construction such as waste disposal were not

Included since they reflect standard Department of Education capital improvement costs which are similar for all sites.

The document will be revised to state that the contractor will be required to landfill his construction wastes.

COPY PLANNING DEPARTMENT COUNTY OF HAWAII
26 AUPUNI STREET HILO, HAWAII 96720

AUG 29 1988

Mr. Teuane Tominsaga
Department of Accounting and General Services
Department of Public Works
P. O. Box 119
Honolulu, HI 96810

August 18, 1988

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

Dear Mr. Tominsaga:

Dear Mr. Lyman:

EIS for New Konaewaena Elementary School

Subject: EIS for New Konaewaena Elementary School

Thank you for your August 4, 1988 response to our comments on the EIS.

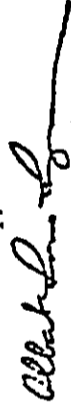
Thank you for your August 18, 1988 letter regarding the conditionally permitted use of public schools in certain zoning districts. Your clarification of the matter is appreciated.

We would like to clarify your response on page 2, paragraph 6(c) relating to the need for rezoning. There is no zoning district in our code which public schools are a specifically permitted use.

The ratings for the County Zoning Designation criterion will be revised to reflect the Department of Education's preference for the development of schools within certain zoning districts.

Under Section 25-28(a)(2), provided, a use permit or special permit (agricultural district) is secured from the Planning Commission, public schools are a conditionally permitted use in all districts except resort, general, industrial and open districts. In any event, rezoning would not be necessary.

Sincerely,


ALBERT LONO LYMAN
Planning Director

Very truly yours,


TEUANE TOMINAGA
State Public Works Engineer

SM:jk

DT/TL-Rkkb

TEUANE TOMINAGA & ASSOCIATES

F.O. Box 78
Keelokekua, HI 96750
May 16, 1988

Marvin Miura, Ph. D.
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, HI 96813

Dear Dr. Miura:

The Draft Environmental Impact Study for the Site Selection for the New Konawaena Elementary School, Kona, Hawaii, seems very thorough. As the Chairperson of the PTSA Special Committee to Facilitate the Relocation of Konawaena Elementary School, I am reflecting my committee's concern that most of the landowners are opposed to the selection of the sites that were studied.

We are worried that litigation might set the project back a number of years. Both our school and Konawaena High School are bursting at the seams, and a delay could be very frustrating, to say the least. Any words of assurance that you could send us would be most appreciated. Also, if there is any way in which we can be of help, do not hesitate to inform us.

Sincerely,
Shirley Johnson

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DIV. OF PUBLIC WORKS
PAGES

SPECIAL COMMITTEE TO FACILITATE THE RELOCATION OF KONAWAENA
ELEMENTARY SCHOOL

PURPOSE:

1. Serve as a channel for designing the master plan.
2. Serve as a liaison between the teachers, parents and community members, and the State.
 - a. Receive information from the State
 - b. Give input to the State
 - c. Monitor the progress to see if and how the input is implemented.
 - d. Provide information to the PTSA Board and membership, and to the Community.

The members of the Committee will be appointed by the PTSA Board, and will be from the Konawaena Elementary School staff, parents and the community. The school principal and the PTSA President shall be members of the Committee.



CIRCLE J RANCH

Registered Polled Herefords

P. O. Box 47 / Kealahou, Hawaii 96750

May 20, 1988
KUHUNA

Mr. Marvin Mura, Ph.D.
Office of Environmental Quality Control
465 South King Street Room 104
Honolulu, HI 96813

COPY



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 111, HONOLULU, HAWAII 96810

FORM NUMBER
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STATE OF HAWAII
DIVISION OF PUBLIC WORKS
LETTER NO. (E)1668.8

JUL 21 1988

Mr. Jack B. Greenwell
P. O. Box 47
Kealahou, Hawaii 96750

Dear Mr. Greenwell:

Subject: Konawaena Elementary School
EIS Public Review Phase

Thank you for your May 20, 1988 comments on the subject project. In this regard, we offer the following responses to your comments:

1. **Drainage** - The portion of Mamalahou Highway fronting your property is under the jurisdiction of the County of Hawaii. Therefore, we suggest that you contact the County of Hawaii Department of Public Works in regard to drainage mitigation measures.
2. **Access to Makai Property** - As shown in Figure 16 of the draft EIS, the location of the candidate site allows access to the makai portion of your property through a portion along the northern edge.
3. **Land Value** - The land valuations stated in the draft EIS reflect County of Hawaii property assessment values and are included in the report for comparison purposes only. The actual land acquisition value of the site selected will be determined by negotiations based on a land appraisal or by the courts in condemnation proceedings if agreement on the price cannot be reached.
4. **Macadamia Nut Orchard** - The draft EIS will be revised to include the presence of the orchard.

Dear Mr. Mura:

You have requested comments on the EIS for the proposed Konawaena Elementary School. On December 8, 1987, I wrote a letter to Mr. Mura's office, a copy of which is included in your EIS Statement. This letter outlined some of my objections. I am now adding some further objections.

First, I wish to inform you that the land to the north of my home is being rained and made dangerous because of water damage from water originating from Konawaena School. At one time when water was stored in redwood tanks, there was a very small amount that came down under the sidewalk and through a culvert into this area. Now, since the construction of parking lots, new buildings, a new gymnasium, tennis courts, etc., the volume of water is tremendous and it has cut ditches five and six feet deep causing extreme soil erosion. I have called this problem to the attention to the State authorities, but they have not done anything about it. Another piece of my road frontage property to the north has a water problem also. This leaves the only road frontage property with access to my makai land as the area being considered for a Konawaena Elementary School. My neighbors and many friends are very opposed as I am to having a school in this area.

Two very important questions on this possible site selection are: First, I have been offered up to \$15,000.00 an acre for all of my makai land which is three times as much as is listed on the site acquisition cost estimate and less than 1/4 of the value listed for sites 1, 2, and 3. Secondly, I plan to leave 50 acres each to my son and daughter in the near future, which would definitely be included in this area. In looking at the maps, I believe the western boundary includes part of my macadamia nut orchard and another separate piece of pasture land. What next? This morning I telephoned Mr. Mark Yamabe and suggested that someone from your office have a meeting with each individual land owner to discuss problems involved. A group meeting would not be advisable. I am very opposed to having an Elementary School in this area and sincerely hope that one of the other sites will be chosen.

Very truly yours,

Jack B. Greenwell

Mr. Jack B. Greenwell
Page 2

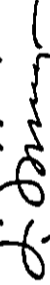
Ltr. No. (P)1668.8

5. Meeting - The EIS process allows possible affected land owners the opportunity to express their problems and concerns regarding the proposed elementary school. Since you have done so, we had our consultant meet with you and have responded to your comments. However, if you or the other landowners have any further concerns on this matter, please call Mr. Mark Yamabe of the Planning Branch at 548-7660.

6. Site Selection - Your position against the location of a school in the area is noted and will be considered in the selection of the school site.

We appreciate your input for this project.

Very truly yours,



TEUANE TOMINAGA
State Public Works Engineer

HV:jk

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DIV. OF PUBLIC WORKS
2465

346 Ilimalia Loop
Kailua, Hawaii 96734
April 13, 1988

Marvin Miura, Ph.D.
Office of Environmental Quality Control
455 South King Street, Room 104
Honolulu, Hi. 96813

Dear Sir:

The draft for the Site Selection for the new
Kona Waena Elementary School, Kona, Hawaii was
received. Thank you.

I have no further comments.

Sincerely,

cd: Mr. Mark Yamabe
Division of Public Works
Honolulu, Hi.

Agnes P. Smith

XII. FUKUNAGA AND ASSOCIATES, INC. LIST OF PREPARERS OF THIS DOCUMENT

Jon Nishimura, Civil Engineer
University of Hawaii, BSCE, 1975
University of Hawaii, MSCE, 1978
Registered Professional Engineer, State of Hawaii, 1980

Alyson Yim, Civil Engineer
University of Hawaii, BSCE, 1984
Engineer-in-Training, Part I-Fundamentals of Engineering,
1984

Edlyn Hayashida, Graphic Artist

REFERENCES

1. County of Hawaii, Hawaii County General Plan (Draft), April 1987.
2. County of Hawaii, Department of Planning, Kona Regional Plan, 1982.
3. County of Hawaii, Department of Water Supply, Water System Standards, Volume I, 1985.
4. Federal Emergency Management Agency, Flood Insurance Rate Maps: Hawaii County, 1987.
5. State of Hawaii, Department of Accounting and General Services, Site Selection and Environmental Impact Statement for Kailua-Keauhou Elementary School, May 1978.
6. State of Hawaii, Department of Education, Educational Specifications and Standards for Facilities, Volume I: The Elementary School, RS 80-9878, September 1980.
7. State of Hawaii, Department of Education, Enrollment Projections of the Public Schools in Hawaii, 1988-1993, RS 88-3775, May 1988.
8. State of Hawaii, Department of Education, State Education Functional Plan, RS 85-8042, May 1985.
9. State of Hawaii, Department of Planning and Economic Development, The Hawaii State Plan, 1978.
10. State of Hawaii, Department of Planning and Economic Development, The State of Hawaii Data Book 1986, December 1986.
11. State of Hawaii, Department of Transportation, Final Environmental Impact Statement for Hawaii Belt Road, Project No. F-011-1(8), 1979.
12. Stearns, H.T., Geology of the Hawaiian Islands, Bulletin 8, 1967.
13. United States Department of Agriculture, Soil Conservation Service, North Kona Flood Plain Management Study, December 1984.
14. United States Department of Agriculture, Soil Conservation Service, Soil Survey of Island of Hawaii, State of Hawaii, December, 1973.
15. United States Department of Agriculture, Soil Conservation Service, South Kona Flood Hazard Analysis, July 1977.

CORRECTION

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

REFERENCES

1. County of Hawaii, Hawaii County General Plan (Draft), April 1987.
2. County of Hawaii, Department of Planning, Kona Regional Plan, 1982.
3. County of Hawaii, Department of Water Supply, Water System Standards, Volume I, 1985.
4. Federal Emergency Management Agency, Flood Insurance Rate Maps: Hawaii County, 1987.
5. State of Hawaii, Department of Accounting and General Services, Site Selection and Environmental Impact Statement for Kailua-Keauhou Elementary School, May 1978.
6. State of Hawaii, Department of Education, Educational Specifications and Standards for Facilities, Volume I: The Elementary School, RS 80-9878, September 1980.
7. State of Hawaii, Department of Education, Enrollment Projections of the Public Schools in Hawaii, 1988-1993, RS 88-3775, May 1988.
8. State of Hawaii, Department of Education, State Education Functional Plan, RS 85-8042, May 1985.
9. State of Hawaii, Department of Planning and Economic Development, The Hawaii State Plan, 1978.
10. State of Hawaii, Department of Planning and Economic Development, The State of Hawaii Data Book 1986, December 1986.
11. State of Hawaii, Department of Transportation, Final Environmental Impact Statement for Hawaii Belt Road, Project No. F-011-1(8), 1979.
12. Stearns, H.T., Geology of the Hawaiian Islands, Bulletin 8, 1967.
13. United States Department of Agriculture, Soil Conservation Service, North Kona Flood Plain Management Study, December 1984.
14. United States Department of Agriculture, Soil Conservation Service, Soil Survey of Island of Hawaii, State of Hawaii, December, 1973.
15. United States Department of Agriculture, Soil Conservation Service, South Kona Flood Hazard Analysis, July 1977.

16. University of Hawaii, Land Study Bureau, Detailed Land Classification - Island of Hawaii, L.S.B. Bulletin No. 6, November 1965.
17. University of Hawaii, Department of Geography, Atlas of Hawaii, 1974.

APPENDIX A - EVALUATION OF POTENTIAL SITES

A. Evaluation Criteria

Having met the minimum site criteria, the potential sites were evaluated against three sets of evaluation considerations:

1. School Site Criteria - the physical parameters which would affect site development and school operations. Factors considered in school site criteria are site characteristics, environment, roadway and utilities and accessibility.

a. Site Characteristics

(1) Size:

Good - The site is the minimum size because an adjacent park will be used to meet the school's playground requirements.

Fair - The site is the requested size.

Poor - The site is larger than the requested size because of slope or other considerations.

(2) Slope: Computed by analyzing the overall slope of the site and taking an average.

Good - The average slope of the site is less than 8 percent.

Fair - The average slope of the site is between 8 and 12 percent.

Poor - The average slope of the site is greater than 12 percent.

(3) Shape: The shape should generally be rectangular.

Good - Length-width ratio 1.0:1.0 to 1.6:1.0.

Fair - Length-width ratio 1.7:1.0 to 2.0:1.0.

Poor - Length-width ratio 2.1:1.0 to 2.5:1.0.

(4) Soil & Foundation: USDA Soil Conservation Service Soil Survey of Island of Hawaii.

Good - Lava or bedrock at depth of less than 5 feet and/or favorable features.

Fair - Moderate bearing capacity, moderate shrink-swell potential and/or compressibility.

Poor - Subject to tidal action, low bearing capacity, high compressibility, low sheer strength, high shrinkage, high organic matter content.

(5) Natural Beauty:

Good - The site has some natural beauty in the form of trees, plants, rock formations, etc. which can be preserved and integrated into the school campus. The site is not crossed by overhead utility lines.

Fair - The site lacks most of the desirable natural beauty but still has the potential of becoming a beautiful campus through proper landscaping. The site is not crossed by overhead lines.

Poor - The site has no natural beauty whatsoever. The site is crossed by overhead lines.

b. Environment

(1) Highway Noise:

Good - The site is more than 1,500 feet away from major highways, freeways and truck routes.

Fair - The site is 500 feet to 1,500 feet away from major highways, freeways and truck routes to keep the motor vehicular noise level down to a level where normal conversation can be heard.

Poor - The site is within 500 feet of a

major highway, freeway or truck route. Air conditioning may be required for some buildings.

(2) Aircraft Noise:

Good - The site is more than a mile away from the normal aircraft flight patterns into and out of airports and air bases.

Fair - The site is far enough away (0.5 to 1 mile) from the normal flight patterns to keep the noise level down to a level where normal conversation can be heard.

Poor - The site is directly under (0 to 0.5 mile) the approach and takeoff patterns.

(3) Rainfall:

Good - The site has a median annual rainfall less than 30 inches.

Fair - The site has a median annual rainfall between 30 inches to 39.9 inches.

Poor - The site has a median annual rainfall greater than 40 inches. Walkways and playcourts must be covered, in accordance with DOE standards.

(4) Industrial and Agricultural Nuisances:

Good - The site is free from noise, dust, odors, smoke, and other nuisances created by industrial or agricultural activities.

Fair - The noise, dust, odors, smoke, and other nuisances from industrial or agricultural activities are at worst periodic but well within the limits of human toleration.

Poor - The above mentioned nuisances cause considerable discomfort and hamper school activities.

(5) Proximity to Commercial Centers:

Good - The site is more than a half mile from those commercial enterprises (bowling alleys, pool halls, stores, etc.) that may attract students during school hours.

Fair - The site is reasonably far (0.25 to

0.5 mile) from distracting commercial centers.

Poor - The site is within a quarter mile of undesirable commercial enterprises.

c. Roadway and Utilities

(1) Adequacy of Roadways:

Good - The site is served by adequate roadways to meet the ultimate school needs.

Fair - The site will have adequate roadways which will be developed or require some widening to serve the interim and ultimate needs of the school.

Poor - The site has no roadways and will require the construction of a roadway system to specifically meet the school needs.

(2) Adequacy of Water Service:

Good - The site has adequate water pressure and capacity available to meet the ultimate school needs.

Fair - The existing water service is insufficient but adequate service is being developed which will meet the interim and ultimate needs of the school.

Poor - The site has inadequate water service and will require the development or extension of a water system to specifically meet the school needs.

(3) Adequacy of Sewer Service:

Good - The site has adequate sewer lines available to meet the ultimate school needs.

Fair - The site will have adequate sewer service which is being developed to serve the interim and ultimate needs of the school.

Poor - The site has no sewer service and will require extensive system development or extension of sewerlines to meet the school needs.

(4) Adequacy of Drainage Facilities:

Good - The site has adequate drainage facilities available to meet the ultimate school needs.

Fair - The site will have adequate drainage facilities which are being developed to serve the interim and ultimate needs of the school.

Poor - The site has no drainage facility and may require the development of an off-site drainage system to specifically meet the school needs.

(5) Adequacy of Power and Communications:

Good - The site has or is proximate to, adequate existing power and communications available to meet the ultimate school needs.

Fair - The site will require some off-site improvements which will provide adequate power and communications to serve the interim and ultimate needs of the school.

Poor - The site has insufficient power or communications available and will require extensive off-site improvement of these services to serve the school needs.

d. Accessibility

(1) Pedestrian Access:

Good - The site will have pedestrian access from three sides.

Fair - The site will have pedestrian access from two sides.

Poor - The site will have pedestrian access from only one side.

(2) Pedestrian Safety:

Good - Adequate and safe walkways/shoulders to the site are available.

Fair - Safe walkways/shoulders to the site will be provided along the school access road.

Poor - The site may require traffic signals and/or pedestrian overpasses in addition to walkway shoulder improvements.

(3) Automobile Access:

Good - The site will have roadways along one short side and one long side.

Fair - The site will have roadways along one long side or two short sides.

Poor - The site will have a roadway only along one short side.

(4) Bus Service:

Good - The site is served by a major bus line running through the service area.

Fair - A major bus line passes within reasonable (0.5 mile) distance of the site.

Poor - No bus service is available.

(5) Traffic Flow:

Good - The site is off a major roadway passing through the service area with excess capacity.

Fair - Access to the site is via a through street capable of handling the heavy traffic at school opening and closing hours.

Poor - Access to the site is via a dead end street.

2. Community Criteria - factors which enable the evaluation of site development in terms of governmental/land use compatibility and the relationship of the school to the surrounding community.

a. Government

- (1) State Land Use District Map Designation: This item reflects compliance with the State Land Use policy of preserving conservation-zoned lands and utilizing agricultural zoned lands only when urban-zoned lands are unavailable or unsuitable.

Good - The site is within the Urban District.

Fair - The site is within the Rural District.

Poor - The site is within the Agricultural or Conservation District.

- (2) County General Plan Designation: This item reflects compatibility with the County's General Plan for the area.

Good - The site is designated low or medium density urban.

Fair - The site is designated alternate urban expansion.

Poor - The site is designated resort, conservation, industrial, agricultural or open space.

- (3) County Zoning Designation: This item reflects the Department of Education's preference for the development of schools within certain districts.

Good - The site is zoned residential.

Fair - The site has any zoning designation except residential, resort, industrial or open.

Poor - The site is zoned resort, industrial or open.

b. Community Effects

- (1) Community Displacement:

Good - The site may be acquired without relocating any family, farm, or business.

Fair - The site may be acquired without relocating any farm or business or more than five families and living units.

Poor - The site cannot be acquired without the relocation of farms, businesses or more than five families.

(2) Interference with Institutions:

Good - The site is greater than 0.5 mile from hospitals, rest homes, and any other institution which may be disturbed by large groups of students.

Fair - The site is far enough away (0.25 to 0.5 mile) from any hospital, rest home, etc., so that any disturbance to the institution by the activities of the proposed school will be minimal.

Poor - The site is adjacent to a hospital, rest home, or similar institution which may be disturbed by the activities of the proposed school.

(3) Agricultural Land Classification:

University of Hawaii Land Study Bureau
Agricultural Land Classification
Productivity Rating.

Good - The site is located on land with very poor (E) productivity rating.

Fair - The site is located on land with fair (C) to poor (D) productivity rating.

Poor - The site is located on land with good (B) to very good (A) productivity rating.

(4) Existing Land Use: In changing the existing use of the site to school use, there should be a minimal amount of disruption to the existing pattern of living within the community.

Good - The site is vacant and unused.

Fair - The site is being used for government agencies or institutions.

Poor - The site is being used for agriculture, residences or private businesses.

(5) Land Owners:

Good - The site is entirely owned by the Federal, State, or County government.

Fair - The site is owned by less than three individuals or business corporations.

Poor - The site is owned by three or more individuals or business corporations.

(6) Aesthetic Value:

Good - The site is not an aesthetic asset to the community and will not interfere with scenic vistas when it is developed into a school.

Fair - The site has little aesthetic value to the community or may partially obstruct scenic vistas when it is developed into a school.

Poor - The site is an aesthetic asset to the community or will obstruct scenic vistas when it is developed into a school.

(7) Location:

Good - The site is within reasonable walking distance (0.75 mile) of 75% of the students.

Fair - The site is within reasonable walking distance of 50% of the students.

Poor - The site is within reasonable walking distance of less than 50% of the students.

3. Cost Considerations - an assessment of site development and school operational costs. Factors considered include land acquisition, off-site improvement costs, on-site improvement costs and bus subsidy costs.

a. Land Acquisition

Determination of the relative costs associated with land acquisition involve consideration of the following items:

- (1) Land Acquisition - Estimated value of the land and obtained by using the Tax Office appraised value.
- (2) Relocation of Displacees - Relocation payments to all tenants, owners, farms, and businesses that are displaced.

b. Off-Site Development

The following items are considered in the cost analysis to account for the differences in off-site development required for each candidate site:

- (1) Utilities - Cost of providing additional lines for or increasing sizes of existing utility system facilities due to additional loads imposed by the school.
- (2) Drainage - Cost of constructing additional drainage facilities to accomodate added storm runoff resulting from development of the school.
- (3) Access Roads - Cost of constructing necessary access roadways to the site if none is available.

c. On-Site Development

To account for the differences in required on-site improvements for each candidate site, the following items were included in the cost analysis:

- (1) Grading and Clearing - Cost of grading necessary to adapt the existing topography for buildings, play areas, and other facilities; cost of removing existing structures and heavy foliage.
- (2) Utilities - Additional costs of making utility connections.
- (3) Drainage - Cost of constructing major drainage facilities.

(4) Foundation - Additional foundation cost due to adverse subsurface conditions.

(5) Soundproofing - Cost of soundproofing classrooms if predicted noise levels inside the classroom will exceed allowable limits.

d. Bus Subsidy Costs

Bus subsidy costs for students residing more than one mile away from each candidate site were considered in the cost analysis.

B. Evaluation Results

This section discusses the assumptions, explanations and ratings of the evaluation based on the school site and community criteria. It should be noted that the intent of this site selection process is not to recommend a single preferred site, but to be used as basis for comparison in weighing the relative advantages and disadvantages of each site to aid in the selection of a preferred site. The ratings and their subtotals are summarized in Tables 1 and 2.

1. School Site Criteria

(1) Size: Site 1 is rated "fair." Sites 2 & 3 are rated "poor" because steeper slopes require greater acreage. Site 5 is rated "poor" because greater acreage is required for access to the site.

(2) Slope: The slope of each site was computed by taking an average over an area of assumed size and shape. Sites 2 and 3 received ratings of "poor", with approximate slopes of 14%. Sites 1 & 5 received a rating of "fair", with slopes of about 10% and 12%, respectively.

- (3) Shape: The parcels on which sites 2, 3 and 5 are located can accommodate a shape with a length to width ratio between 1.0:1.0 and 1.6:1.0. Thus, sites 2, 3 and 5 are rated "good". Site 1 is rated "poor" with an oblong shaped area.
- (4) Soil & Foundation: Most soils in the service area are shallow, with less than 5 feet to bedrock. All sites are rated "good".
- (5) Natural Beauty: All sites have lush greenery that can be integrated into the school campus. None of the sites are crossed by overhead lines. Site 1 does not afford the scenic vistas of the other sites. Site 1 is rated "fair", while sites 2, 3, and 5 are rated "good".

b. Environment

- (1) Highway Noise: Mamalahoa Highway is the major roadway in the service area. Site 1 is abutting and above the highway and is rated "poor." Sites 2, 3, and 5 are below or set away from the highway, with major portions of the sites between 500 and 1500 feet from the highway; therefore, these sites are rated "fair."
- (2) Aircraft Noise: The service area is about 12 miles from Keahole Airport and thus all sites are rated "good".
- (3) Rainfall: All sites receive an average of between 50 and 75 inches of rainfall per year. All sites are rated "poor".
- (4) Industrial and Agricultural Nuisances: All sites are rated "fair" due to the dominant agricultural presence throughout the service area.
- (5) Proximity to Commercial Centers: Characteristic of the rural communities in the service area is the close proximity and intermixing of businesses and residences. Sites 2, 3 and 5 are rated "fair." Site 1 is rated "poor" because it is set close to commercial activities in Kainaliu Village.

c. Roadway and Utilities

- (1) Adequacy of Roadways: All sites will access from Mamalahoa Highway, the two lane main artery from the area. This artery is already taxed, and any site selected will cause congestion on the main highway. All sites are rated "fair."
- (2) Adequacy of Water Service: All sites will be served by the county water system. Due to the County system's limited transmission capacity, all sites will have to construct a storage tank and pump system for sufficient fire protection. All sites are rated "poor."
- (3) Adequacy of Sewer Service: There is no public sewerage system in the service area. Each site will have to construct its own sewage treatment and disposal system. All sites are rated "poor."
- (4) Adequacy of Drainage Facilities: The service area does not have a drainage system, except for a few culverts crossing Mamalahoa Highway. All sites are rated "fair."
- (5) Adequacy of Power and Communication: Power and communications service will be provided by HELCO and HTCO, respectively. All sites are rated "good."

d. Accessibility

- (1) Pedestrian Access: Access to all sites will be from one side only. Thus, all sites are rated "poor".
- (2) Pedestrian Safety: Walkways and shoulders will need to be developed with the accesses to all sites and possibly for a distance along the highway from the school site. All sites are rated "fair."
- (3) Automobile Access: All sites will have automobile access from only one side and are rated "poor".
- (4) Bus Service: There is no bus service in the area and all sites are rated "poor".
- (5) Traffic Flow: All sites will be accessed by the main highway passing through the service area. All sites are rated "fair."

2. Community Criteria

a. Government

- (1) State Land Use District Map Designation: Sites 2, and 3 are designated Agriculture by the State Land Use Commission, while Sites 1 and 5 are designated partially Urban and partially Agriculture. Thus, Sites 1 and 5 are rated "fair", while Sites 2 and 3 are rated "poor".
- (2) County General Plan Designation: Sites 1, 2, and 5 are designated Low Density Urban and are rated "good". Site 3 is designated partially Low Density Urban and partially Medium Density Urban. Site 3 is also rated "good".
- (3) County Zoning Designation: Sites 1, 2, 3, and 5 are zoned Agriculture by the County and are rated "fair".

b. Community Effects

- (1) Community Displacement: Sites 1, 2, and 3 are each partially used for agriculture and each is rated "fair". Site 5 is used for pasture and agriculture and is also rated "fair".
- (2) Interference with Institutions: Sites 1, 2, and 5 are not near any institutions and are rated "good". Site 3 is about a quarter mile from Kona Hospital and is rated "fair".
- (3) Agricultural Land Classification: The Land Study Bureau classified lands throughout the State according to their agricultural productivity potential. Factors such as climate, drainage, wind velocities and soil characteristics were taken into account. Sites 1, 2, 3, and 5 are classified good (B) with respect to productivity. Thus, Sites 1, 2, 3, and 5 are rated "poor."
- (4) Existing Land Use: Sites 1, 2, 3, and 5 have agricultural presence and are rated "poor".
- (5) Land Owners: Each of the sites is privately owned by one or two individuals or corporations. Thus, all sites are rated "fair".

- (6) Aesthetic Value: The development of Sites 1, 2, 3, or 5 may obstruct scenic vistas and therefore these sites are rated "fair".
- (7) Location: The school service area spans about 9 miles. It is assumed that more than 50 percent of the students would not live within a reasonable walking distance of each of the school sites. Thus, all sites are rated "poor".

TABLE 1 - EVALUATION RATINGS SUMMARY

CRITERIA	SITE			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>5</u>
School Site Criteria				
A. Site Characteristics				
1. Size	F	P	P	P
2. Slope	F	P	P	F
3. Shape	P	G	G	G
4. Foundation	G	G	G	G
5. Natural Beauty	F	G	G	G
B. Environment				
1. Highway Noise	P	F	F	F
2. Aircraft Noise	G	G	G	G
3. Rainfall	P	P	P	P
4. Industrial/Agricultural Nuisances	F	F	F	F
5. Proximity to Commercial Centers	P	F	F	F
C. Roadway and Utilities				
1. Adequacy of Roadways	F	F	F	F
2. Adequacy of Water Service	P	P	P	P
3. Adequacy of Sewer Service	P	P	P	P
4. Adequacy of Drainage Facilities	F	F	F	F
5. Adequacy of Power and Communications	G	G	G	G
D. Accessibility				
1. Pedestrian Access	P	P	P	P
2. Pedestrian Safety	F	F	F	F
3. Automobile Access	P	P	P	P
4. Bus Service	P	P	P	P
5. Traffic Flow	F	F	F	F

G - Good
 F - Fair
 P - Poor

TABLE 1 - EVALUATION RATINGS SUMMARY (cont)

CRITERIA	SITE			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>5</u>
Community Criteria				
A. Government				
1. State Land Use Designation	F	P	P	F
2. County General Plan Designation	G	G	G	G
3. County Zoning Designation	F	F	F	F
B. Community Effects				
1. Community Displacement	F	F	F	F
2. Interference with Institutions	G	G	F	G
3. Agricultural Land Classification	P	P	P	P
4. Existing Land Use	P	P	P	P
5. Land Owners	F	F	F	F
6. Aesthetic Value	F	F	F	F
7. Location	P	P	P	P

G - Good
 F - Fair
 P - Poor

TABLE 2 - RATINGS SUMMARY BY CATEGORY

CRITERIA	SITE			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>5</u>
School Site Criteria				
A. Site Characteristics				
Good	1	3	3	3
Fair	3	0	0	1
Poor	1	2	2	1
B. Environment				
Good	1	1	1	1
Fair	1	3	3	3
Poor	3	1	1	1
C. Roadway and Utilities				
Good	1	1	1	1
Fair	2	2	2	2
Poor	2	2	2	2
D. Accessibility				
Good	0	0	0	0
Fair	2	2	2	2
Poor	3	3	3	3
School Site Criteria Total				
Good	3	5	5	5
Fair	8	7	7	8
Poor	9	8	8	7
Community Criteria				
A. Government				
Good	1	1	1	1
Fair	2	1	1	2
Poor	0	1	1	0
B. Community Effects				
Good	1	1	0	1
Fair	3	3	4	3
Poor	3	3	3	3
Community Criteria Total				
Good	2	2	1	2
Fair	5	4	5	5
Poor	3	4	4	3

3. Cost Considerations

To further compare the relative merits of the potential school sites, cost estimates were prepared for site acquisition, off-site development, on-site development and busing subsidy.

a. Site Acquisition Costs

The cost for site acquisition is based on the County's assessed property tax valuation. The assessed valuation may not be an accurate market assessment of land value, but is used for comparison of the relative valuations of the sites. See Table 3. Most of the parcels on which the sites are located have a small portion assessed at a higher value for residential use.

Areas larger than the 8 acre maximum size must be acquired for all sites to meet the usable area requirement. For sites with between 0 and 8 percent slope, all land is considered usable. None of the potential sites fall into this range. For sites between 8 and 12 percent in slope, about 90% of the land is considered usable. Sites 1 and 5 fall into this range. Sites steeper than 12 percent will require more area.

The Kainaliu Mauka Site (Site 1) occupies approximately 8.9 acres on two parcels owned by William J. Paris, Jr. and Agnes Smith. Both parcels are zoned agricultural. The acquisition cost for this site is estimated at \$172,200.

TABLE 3 - SITE ACQUISITION COST ESTIMATES

<u>SITE NO.</u>	<u>TMK(S)</u>	<u>VALUE/ACRE</u>	<u>ACREAGE</u>	<u>SITE VALUE (nearest \$1000)</u>
1	7-9-08:1	\$11,000	4.0	\$172,000
		52,272	0.8	
	7-9-09:11	11,000	3.1	
		52,272	1.0	
2	7-9-11:10	11,000	8.5	151,000
		52,272	1.0	
	7-9-11:11	11,000	0.5	
3	7-9-12:9	11,000	3.226	182,000
		52,272	1.0	
	7-9-11:11	11,000	3.774	
		52,272	1.0	
5	8-1-04:45	5,000	9.05	66,000
		80,586	0.253	
	8-1-04:5	80,586	0.253	

The Kainaliu Makai Site (Site 2) covers approximately 10 acres due to the steepness of the site. The site is located on two parcels owned by the Walter D. Ackerman Estate and Mathew Coelho. Both parcels are zoned agricultural. The acquisition cost of this site is estimated at \$151,300.

The Kona Hospital Makai Site (Site 3) also requires about 10 acres due to the steepness of the site. The two parcels on which the site is located is owned by Gary Yamagata and Yamagata Development Corp. and are zoned agricultural. This site would cost about \$181,500 to acquire.

The Konawaena School Makai Site (Site 5) would require about 9.1 acres of an agriculture zoned parcel owned by Jack Greenwell. This parcel is located off Mamalahoa Highway. An access drive covering approximately 11,000 square feet would be required from a residential zoned parcel also owned by Jack Greenwell. Thus the acquisition cost for this site is approximately \$65,600.

None of the school sites will require the entire parcel(s) on which they are located. However, relocation costs are included in the site acquisition. Relocation costs are estimated at \$5,000 for each entity (family, farm or business) that would be displaced by the school development. Sites 1, 2 and 3 have agricultural presence as well as occupied dwellings, while Site 5 is pasture.

Thus, the costs for Sites 1, 2, 3 and 5 are \$15,000, \$25,000, \$30,000, and \$5,000, respectively.

b. Off-Site Development Costs

Costs were estimated for improvements necessary to extend existing utilities to each potential site's boundary. Off-site improvements include roadway, water, drainage, electrical and telephone lines. Sites 1, 2 and 3 do not require any off-site improvements because of their locations adjacent to Mamalahoa Highway. Drainage improvements would be developed as an on-site improvement, as there is no drainage system in the service area. See Table 4.

Off-site improvements for Site 5 include about 400 feet of access road at a cost estimated at \$80,000. Off-site utility improvement requirements include water and electrical/telephone service extensions. Costs for these are estimated at \$12,000 and \$8,000, respectively.

c. On-Site Development Costs

On-site development costs were estimated for each site with respect to clearing, grading, roadway and parking areas, drainage, landscaping, and utilities including water, sewer, electrical/telephone and gas. See Table 5. On-site improvements are those within the school boundary. Based on a typical school layout plan, the roadway and parking, water, sewer, drainage, landscaping,

TABLE 4 - OFF-SITE DEVELOPMENT COSTS (nearest \$1000)

<u>IMPROVEMENT</u>	<u>SITE 1</u>	<u>2</u>	<u>3</u>	<u>5</u>
ROADWAY	-	-	-	80,000
WATER	-	-	-	12,000
DRAINAGE	-	-	-	-
ELECTRICAL/TELEPHONE	-	-	-	8,000
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	-	-	-	90,000

TABLE 5 - ON-SITE DEVELOPMENT COSTS (nearest \$1000)

<u>IMPROVEMENT</u>	<u>SITE</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>5</u>
CLEARING	12,000	12,000	9,000	5,000
GRADING	734,000	1,065,000	1,065,000	841,000
ROADWAY	100,000	100,000	100,000	100,000
WATER	150,000	150,000	150,000	150,000
DRAINAGE	75,000	75,000	75,000	75,000
SEWER	250,000	250,000	250,000	250,000
ELECTRICAL/TELEPHONE	75,000	75,000	75,000	75,000
GAS	15,000	15,000	15,000	15,000
LANDSCAPING	<u>200,000</u>	<u>200,000</u>	<u>200,000</u>	<u>200,000</u>
SUBTOTAL	\$1,611,000	1,942,000	1,939,000	1,711,000

electrical/telephone and gas improvements are assumed to be similar for all sites. A description and estimated cost for each follows:

Clearing costs vary among the sites due to different amounts and types of plant growth. Site 1 is half pasture and half heavy growth and it is estimated to cost \$12,000 to clear. Site 2 is covered with medium growth which would cost about \$12,000 to clear. Site 3 is half pasture and half medium growth and is estimated to cost \$9,000. Site 5 is open pasture and is estimated at \$5,000 to clear.

The costs for grading differ due to the varying steepnesses of the potential sites. Grading quantities were estimated based on previous school site grading quantities and vary due to the slope and acreage of the sites. The costs for grading Sites 1, 2, 3 and 5 are \$734,000, \$1,065,000, \$1,065,000, and \$841,000 respectively.

Roadways, drop-off and parking areas for a typical school site are estimated to cost about \$100,000. Landscaping, including grassing, topsoil and sprinkler system is estimated at \$200,000. An on-site drainage system, which would probably involve swales and dry wells, is estimated at \$75,000. Electrical and telephone lines for the school is estimated to cost about

\$75,000. A gas system, including a tank and necessary gas lines would be about \$15,000.

All of the potential sites fall above the Underground Injection Control or "no-pass" line designated by the State Department of Health. All sewer discharge in sites at elevations above the "no-pass" line are prohibited from underground injection (i.e. cesspools). Thus, the school site would require an alternate means of disposal. Also, the sewage system must meet all applicable requirements of Act 282, SLH 1985 as amended by Act 302, SLH 1986. Because wastewater flows greater than 800 gallons per day are anticipated, a wastewater treatment works must be used instead of an individual wastewater system. A sewage system, consisting of a wastewater treatment plant, disposal system (i.e. leaching field) and necessary sewer lines, is estimated to cost \$250,000.

Water service for all sites is supplied by the County's 8-inch main running along Mamalahoa Highway. Due to the system's limited transmission capacity, the school site will need a storage tank and pump system for adequate fire protection and domestic use. Such a system, with a tank, pump system, hydrants and waterlines for the school is estimated at \$150,000.

All of the potential sites have shallow soils

underlain with bedrock. Therefore, no additional foundation costs due to adverse subsurface conditions are anticipated. Subsurface conditions should be verified with borings before construction.

Soundproofing may be required for the classrooms if the traffic noise from Mamalahoa Highway is above acceptable levels. However, the traffic noise may be sufficiently reduced by the set-back of the classrooms from the highway. This solution may be addressed in the master-planning stage. Thus, costs for soundproofing are not included.

d. Bus Subsidy Costs

An allowance for bus transportation is provided by the State for students residing more than one mile (road distance) from the school. Bus subsidy costs are calculated based on the number of students who qualify and the cost of amount of the subsidy per bus allowed.

This busing subsidy is estimated only for students at the new elementary school site. Currently, students attending Konawaena Elementary and Konawaena High are bussed together in the morning because of the common site that the schools share. Whether or not this combined busing will continue when the schools are separated is yet to be determined.

To assess busing costs, a straight-line

increase of students was assumed. The opening student enrollment of the school in 1991 is estimated at 300. The projected design enrollment of 830 students is assumed to be reached in the year 2011. The bus subsidy rate used by the Central Services Division, DAGS for the service area is approximately at \$140 per bus per day in 1987 and is assumed to increase at an annual rate of 5 per cent due to inflation. Annual costs are based on a 175 day school year. The passenger capacity per bus is set at 120 students, based on the assumption that each school bus can carry 60 students and can make 2 trips in each direction per day.

Bus subsidy costs were calculated on a present worth basis over a period of 20 years, from 1991 to 2011. Peak enrollment counts were omitted to simplify the analysis. It was estimated that 85% of the students would qualify for busing if the school were located at Sites 1, 2 or 3. For site 5, which is the site closest to the existing school, 90% of the students would qualify. Although Site 5 is the site closest to the population center of the service area, more students would be bussed to this site due to the widespread distribution of residences in the Captain Cook area. The distribution of residences in the Kainaliu/Kealakekua area (Sites 1, 2 or 3) is more condensed, with very few more than one half mile from Mamalahoa Highway. Tables 6 and

7 summarize the number of buses required.

Based on the above assumptions, bus subsidy costs for 1991 through 2011 for Sites 1, 2 or 3 were estimated at \$2.33 million (in 1987 dollars). For Site 5, the bus subsidy cost for the same period is estimated at \$2.47 million (in 1987 dollars).

TABLE 6 - ESTIMATED BUSING REQUIREMENTS
FOR SITES 1, 2 OR 3

<u>Year</u>	<u>No. of Students Qualified for Busing</u>	<u>No. of Buses Required Daily</u>
1991	255	3
1992	278	3
1993	301	3
1994	323	3
1995	346	3
1996	369	4
1997	391	4
1998	414	4
1999	436	4
2000	459	4
2001	481	5
2002	504	5
2003	526	5
2004	549	5
2005	571	5
2006	594	5
2007	616	6
2008	639	6
2009	661	6
2010	684	6
2011	706	6

TABLE 7 - ESTIMATED BUSING REQUIREMENTS
FOR SITES 5

<u>Year</u>	<u>No. of Students Qualified for Busing</u>	<u>No. of Buses Required Daily</u>
1991	270	3
1992	295	3
1993	318	3
1994	342	3
1995	366	4
1996	390	4
1997	414	4
1998	438	4
1999	461	4
2000	486	5
2001	509	5
2002	533	5
2003	557	5
2004	581	5
2005	604	6
2006	629	6
2007	652	6
2008	676	6
2009	700	6
2010	724	7
2011	747	7

APPENDIX B

ARCHAEOLOGICAL RECONNAISSANCE SURVEY
KONAWAENA ELEMENTARY SCHOOL SITES

North and South Kona Districts, Island of Hawaii

(TMK:7-9-08:Por.1 and 7-9-09:Por.11; 7-9-11:Por.10, Por.11;
7-9-12:Por.9, Por.15; and 8-1-04:Por.45)

by

William A. Shapiro, B.A.
Supervisory Archaeologist

Alan E. Haun, Ph.D.
Senior Archaeologist

and

Paul H. Rosendahl, Ph.D.
Principal Archaeologist

Prepared for

State of Hawaii
Department of Accounting and General Services
c/o Mr. Royce S. Fukunaga
Fukunaga & Associates, Inc.
1388 Kapiolani Blvd., 2nd Floor
Honolulu, Hawaii 96814

March 1988

SUMMARY

Between March 2-4, 1988, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological reconnaissance survey of four potential Konawaena Elementary School Sites (c. 10 acres each) located in the North and South Kona Districts, Island of Hawaii (TMK:7-9-08:Por.1 and 7-9-09:Por.11; 7-9-11:Por.10, Por.11; 7-9-12:Por.9, Por.15; and 8-1-04:Por.45). The objectives of the reconnaissance survey were (a) to identify all sites and site complexes present within the project area, (b) to evaluate the potential significance of all identified archaeological remains, (c) to determine the possible impacts the project might have on any existing archaeological sites, and (d) to define the scope of subsequent archaeological work that might be necessary or appropriate.

Seventeen sites were identified within the combined project area. In potential School Sites #1 and #5, two separate remnants of a previously designated National Register eligible historic district, the Kona Field System (Site 50-10-37-6601), were identified. These portions consisted of dryland agricultural field boundaries which were visible in aerial photographs, and were the only definite prehistoric features identified within the combined project area. An additional 15 historic period sites were identified, including rock walls and terraces associated with recent agricultural activity, rock wall property and animal control boundaries, the remains of a historic residential house site, and an occupied residence/old Japanese School. One of the rock walls is possibly atop an older agricultural field boundary.

Of the 17 sites identified in the Konawaena Elementary School Sites project area, 16 were assessed as being significant solely for information content only; sufficient data have been collected from 12 of these sites, and no further work is recommended for them (Sites T-1 thru T-7, T-9 thru T-13). Limited further data collection (detailed recording and test excavations to recover radiocarbon dating and other samples) is recommended as appropriate for four sites that were assessed as being important for information content only, including the two separate remnants of the Kona Field System (Site 50-10-37-6601), the rock wall with the possible field boundary beneath it (T-8), and the remains of the historic residential house site (T-14). In addition, one of the existing residences used to be part of a Japanese School which dates back c. 100 years. This residence/school was assessed as being important for information content, as well as provisionally being significant as a good example of a site type and for its cultural values. Further data collection (detailed recording and possibly test excavations) is recommended for the Japanese School.

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INTRODUCTION

BACKGROUND

This report presents the results of an archaeological reconnaissance survey of four potential Konawaena Elementary School Sites in the North and South Kona Districts, Island of Hawaii (TMK:7-9-08:Por.1 and 7-9-09:Por.11; 7-9-11:Por.10, Por.11; 7-9-12:Por.9, Por.15; and 8-1-04:Por.45). The survey was conducted by Paul H. Rosendahl, Ph.D., Inc. (PHRI) at the request of Mr. Royce S. Fukunaga of Fukunaga & Associates, Inc., for their client the State of Hawaii-Department of Accounting and General Services. The primary objective of this survey was to make a general assessment, in conjunction with the preparation of an Environmental Impact Statement (EIS), concerning the presence or absence of, and potential impacts of the project on, any sites of possible archaeological significance within the project area.

The reconnaissance survey was conducted March 2-4, 1988, under the supervision of Supervisory Archaeologist William A. Shapiro, and under the overall direction of Senior Archaeologist Dr. Alan E. Haun. Field Archaeologists Robert Noah and Eric Pearthree assisted with the survey. Approximately sixty-three (63) man-hours of labor were expended conducting the field work.

Upon completion of field work, an oral preliminary report on findings was made to Mr. Fukunaga of Fukunaga & Associates, and a written summary--including general significance assessments and recommended general treatments, was subsequently submitted to Mr. Fukunaga. Survey findings and conclusions--including tentative evaluations and recommendations, were also discussed with Ms. Connie Kiriu, staff planner in the Hawaii County Planning Department. Ms. Kiriu concurred with the tentative evaluations and recommendations, subject to review of the written final report. The present report comprises the final report on the reconnaissance survey project.

SCOPE OF WORK

The goal of the reconnaissance survey was to identify--to discover and locate on available maps--sites and features of potential archaeological significance. A reconnaissance survey comprises the initial level of archaeological investigation. It is extensive rather than intensive in scope, and is conducted basically to determine the presence or absence of archaeological resources within a specified project area. A reconnaissance survey indicates both the general nature of and variety of archaeological remains present, and the general distribution and density of such remains. A reconnaissance survey permits a general significance assessment of the archaeological resources, and facilitates formulation of realistic recommendations and estimates for such further work as might be

necessary or appropriate. Such work could include intensive survey--data collection involving detailed recording of sites and features, and selected test excavations; and possibly subsequent mitigation--data recovery research excavations, construction monitoring, interpretive planning and development, and/or preservation of sites and features with significant scientific research, interpretive, and/or cultural values.

Based on a preliminary review of readily available archaeological records and reports, and discussions with Mr. Fukunaga, the following specific objectives were determined to constitute an adequate and appropriate scope of work for the reconnaissance survey of the Konawaena Elementary School Sites:

1. To review and evaluate available archaeological and historical literature relevant to the immediate project area;
2. To conduct a surface reconnaissance survey to determine or confirm the existence of archaeological sites within the immediate project area;
3. To assess what effect, if any, the project might have on any existing archaeological sites; and
4. Analyze all data and prepare appropriate reports.

The significance of all archaeological remains identified within the project area was to be assessed in terms of the National Register criteria contained in the Code of Federal Regulations (36 CFR Part 60). The Department of Land and Natural Resources-Historic Sites Section (DLNR-HSS) uses these criteria to evaluate eligibility for both the Hawaii State and National Register of Historic Places. To further facilitate management decisions regarding the subsequent treatment of resources, the general significance of all archaeological remains identified during the reconnaissance survey was to also be evaluated in terms of potential scientific research, interpretive, and/or cultural values. Research value refers to the potential of archaeological resources for producing information useful in the understanding of culture history, past lifeways, and cultural processes at the local, regional, and interregional levels of organization. Interpretive value refers to the potential of archaeological resources for public education and recreation. Cultural value refers to the potential of archaeological resources to preserve and promote cultural and ethnic identity and values.

The reconnaissance survey was carried out in accordance with the standards for reconnaissance-level survey recommended by the Society for Hawaiian Archaeology (SHA). These standards are currently used by the Hawaii State Department of Land and Natural Resources-Historic Sites Section (DLNR-HSS) and the Hawaii County Planning Department (HCPD) as guidelines for the review and evaluation of archaeological reconnaissance survey reports submitted in conjunction with various development permit applications.

PROJECT AREA DESCRIPTION

The Konawaena Elementary School Sites project area consists of four potential school sites (Sites #1, #2, #3, and #5) of approximately 10 acres each. The four school sites are situated adjacent to the Mamalahoa Highway (Highway 11), between the towns of Honalo and Captain Cook, in the North and South Kona Districts on the Island of Hawaii (Figure 1).

School Site #1 is located in the Land of Lehuula 2nd, North Kona District (TMK:7-9-08:Por.1 and 7-9-09:Por.11). Comprised of portions of Grant 669, the site is situated adjacent to and inland of Mamalahoa Highway at the northern end of the town of Kainaliu. The land is gently sloping and has been used extensively for ranching, agricultural, and residential purposes. An occupied residence is present in the SE portion of the parcel. To the north of the residence is an extensive garden. In the NW portion of the site is an open pasture with a tack house and blacksmith shop associated with the Paris Ranch and residence. The pasture includes a series of fences and corrals for animal control. The SW portion of the site consisted of coffee (Coffea sp.), macadamia nut (Macadamia integrifolia Maiden and Betche), banana (Musa sp.), and avocado (Persea americana Mill) trees. This area used to be residential prior to the agricultural activity. The soil in Site #1 consists of Honuauulu very stony silt clay loam (Sato et al 1973:19-20). Current vegetation includes economic plants such as coffee, macadamia nut, papaya (Carica sp.), mango (Mangifera indica L.), banana, avocado, ginger (Zingiberaceae family), tangerine (Citrus sp.), lychee (Litchi chinensis Sonn.), and peach (Prunus persica L.). Introduced grasses and weeds covered the ground surface. Other exotic plants include mountain apple (Eugenia malaccensis L.), wi tree (Spondias dulcis Forst. f.), morning glory (Ipomoea sp.), chayote (Sechium edule [Jacq.]), and African tulip (Spathodea campanulata Beauv.).

School Site #2 is located in the Land of Honuaino 4th, North Kona District (TMK:7-9-11:Por.10, Por.11). Comprised of a portion of Grant 761 (TMK Parcel:Por.10) and incorporating LCA 7901 (RP 3908) to Kanakaole (TMK Parcel:Por.11), the site is situated adjacent to and seaward of Mamalahoa Highway, just south of Kainaliu. The land is gently to moderately sloping and is currently being used for residential and agricultural activities. Three occupied residential structures are located within this parcel; one house in the SW portion, one residence in the NW, and a workshop in the NE. Much of this parcel is currently used for growing coffee, to the east of the residential houses and around the workshop. The soil in Site #2 consists of Honuauulu extremely stony silty clay loam (Sato et al 1973:20). Vegetation within the parcel includes economic plants such as coffee, banana, avocado, and mango. Other exotics include mulberry (Morus alba f. nigrobacca Moldenke), raspberry (Rubus sp.), elephant grass (Pennisetum purpureum Schumach), and various other grasses and weeds.

School Site #3 is located in the Lands of Hokukano 2nd and Kanaeue 1st-2nd, North Kona District (TMK:7-9-12:Por.9, Por.15). Comprised of portions of Grant 992 (TMK Parcel:Por.9, Hokukano 2nd) and Grant 865 (TMK Parcel:Por.15, Kanaeue 1st-2nd), the site is situated adjacent to and

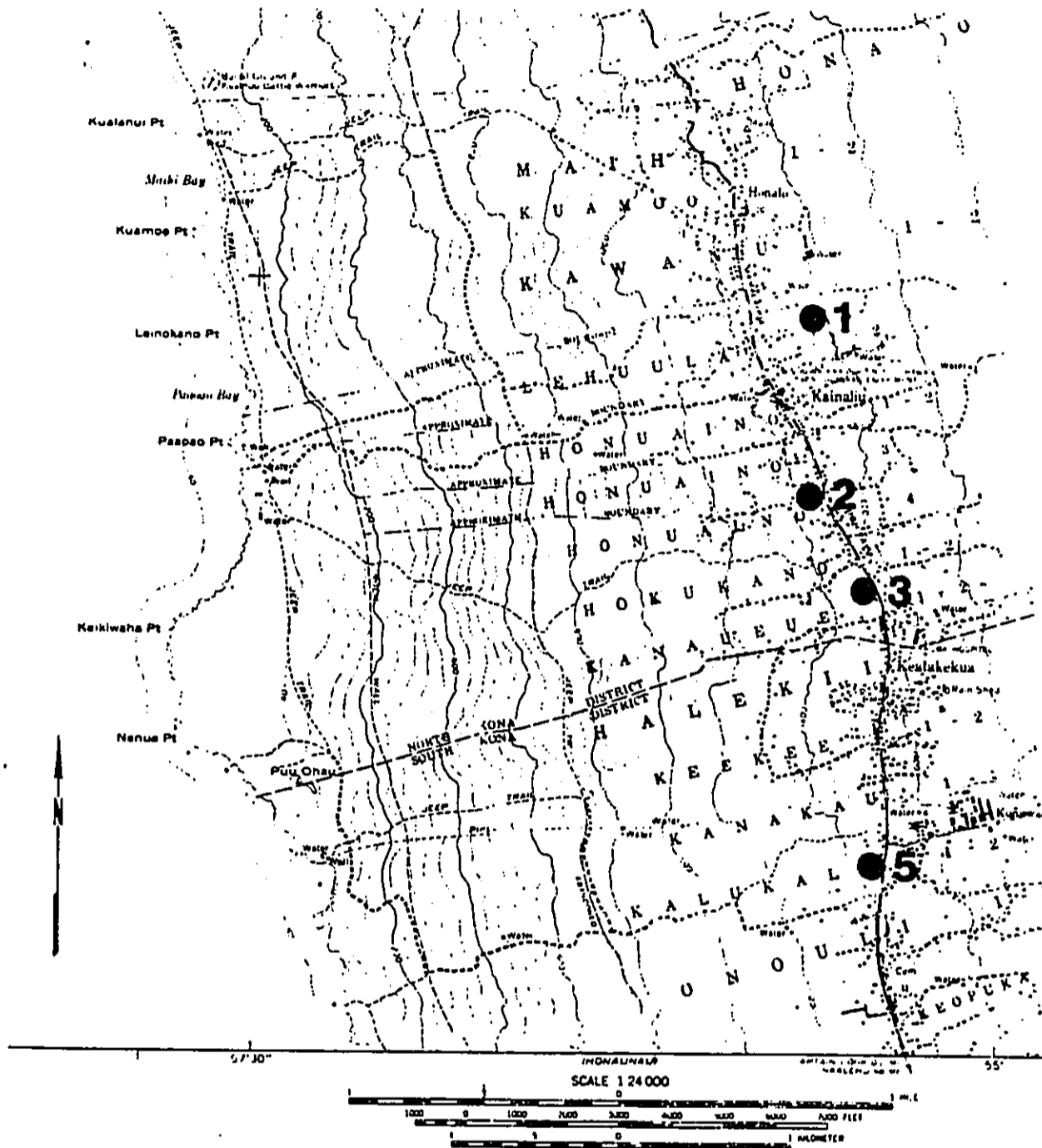


Figure 1. Project Area Location Map

ARCHAEOLOGICAL RECONNAISSANCE SURVEY
KONAWAENA ELEMENTARY SCHOOL SITES

North and South Kona Districts, Island of Hawaii

(TMK:7-9-08:Por.1 and 7-9-09:Por.11; 7-9-11:Por.10, Por.11;
7-9-12:Por.9, Por.15; and 8-1-04:Por.45)

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seaward of Mamalahoa Highway, just north of the town of Kealahou. Most of the site area has been used for coffee farming, and is gentle to moderate in slope. Coffee is still being grown in the NW portion of the site area, along with scattered lemon (Citrus limon L.) and macadamia nut trees. The NE corner of the parcel has been bulldozed and leveled, with most of the southern half currently being used as pasture land. Four residential houses are present within School Site #3. One is situated in the SW corner of the parcel, and it used to be part of an old Japanese School. According to the current tenant, Mr. Silvester Takaki, the Japanese School dates back c. 100 years ago. The three other residences are situated on the western edge of the site area, along Mamalahoa Highway. Three soil types are present within School Site #3. Puna extremely stony muck comprises c. 45% of the site in the northern section, while Honuaulu extremely stony silty clay loam makes up c. 45% to the south and Honaunau extremely rocky silty clay appears to be present (less than c. 10%) along the southern edge of the parcel (Sato et al 1973:18, 20,48). Current vegetation includes economic plants such as coffee, macadamia nut, mango, papaya, banana, peach, lemon, guava (Psidium guajava L.), and avocado. Other exotic plants include phoenix palms (Phoenix sp.), elephant grass, morning glory, philodendron (Philodendron sp.), castor bean (Ricinus communis L.), bamboo (Gramineae), mulberry, and various other grasses and weeds.

School Site #5 is located in the Land of Onouli 1st, South Kona District (TMK:8-1-04:Por.45). Comprised of a portion of LCA 8452:11 (RP 7146) to A. Keohokalole, the site is adjacent to and seaward of Mamalahoa Highway about midway between Kealahou and Captain Cook. The land is gently sloping, with most of the parcel currently being used as pasture land. The SW corner is being used for the cultivation of macadamia nut, coffee, and avocado. An unoccupied barn and storage shed are situated in the center of the parcel. Soils within Site #5 consist primarily of Kainaliu very stony silty clay loam (c. 85%), with Honaunau extremely rocky silty clay loam along the eastern edge (c. 15%) (Sato et al 1973:18,23). Vegetation within Site #5 includes economic plants such as macadamia nut, coffee, avocado, and mango. One native kukui tree (Aleurites moluccana [L.] Willd.) is present on the site, in addition to exotics such as strawberry guava (Psidium cattleianum Sabine), mulberry, elephant grass, bamboo, and various other grasses and weeds.

PREVIOUS ARCHAEOLOGICAL WORK

Early archaeological surveys in the general Kailua to Kealahou Bay area of central West Hawaii Island were made by John Stokes in 1906, John Reinecke in 1929-30, and Henry Kekahuna and Theodore Kelsey in the 1950s (Schilt 1984:15). In response to the rapid increase in development and required compliance with county, state, and federal legislation, numerous survey, excavation, and site reconstruction projects have been conducted within this general area in recent years. South of Kailua, several surveys have been done in the Kealahou Bay area which include portions of the aboriginal Kona Field System; principal among these are Clark

(1983), Hommon (1969), Hommon and Crozier (1970), McEldowney (1979), Schilt (1984), and Soehren and Newman (1968, 1979).

Soehren and Newman (1968) utilized aerial photographs of the region to prepare a base map detailing the dryland field unit boundaries which represented the extent of the Kona Field System. Newman (1970) summarized the available data on the Kona Field System, and subsequently (1971, 1972) compared the the Kona Field System to other prehistoric dryland field systems--mainly the Kohala Field System--on the Island of Hawaii.

The Kona Field System (Site 50-10-37-6601) is an extensive complex of aboriginal Hawaiian dryland agricultural and related habitation, ceremonial, and other cultural features that has been declared eligible for inclusion in the National Register of Historic Places. In nominating the site to the Hawaii Register of Historic Places, Newman stated:

The most extensive and monumental work of ancient Hawaii is the Kona Field System, lying along the western side of Hawaii Island. This field system is so extensive that it can only be appreciated from an airplane or by air photos, for it is an integrated complex of remains three by eighteen miles in size. The fields form a patterned network of elongated rectangles lying as a band parallel to the sea (cited in Schilt 1984:3).

The individual field unit boundaries are formed by a series of low walls of stacked stone and/or linear earthen mounds which vary in height from 0.5 to 1.0 m and in width from 1.0 to 3.0 m (Schilt 1984:3). The individual fields vary in size, and are oriented perpendicular to the ocean.

In defining the Kona Field System, Newman (1970) compiled historic descriptions of the area and correlated these with aerial photographs and environmental and agricultural variables. As a result, he was able to distinguish four subzones within the system, which he characterized on the basis of dominant type of crops. The remnants of prehistoric fields identified during the survey of the present Konawaena Elementary School Sites project area are situated within the Taro/Sweet Potato/Ti/Sugarcane Zone (Schilt 1984:6). Newman's work, in combination with Kelly's (1983) research, suggest that the Kona Field System was functioning until the mid-1900s, when a reorganization of Hawaiian land ownership took place throughout the island.

FIELD METHODS AND PROCEDURES

Reconnaissance survey field work was conducted March 2-4, 1988 by three crew members. A 100% coverage ground survey of the four potential school sites was accomplished using a series of systematic pedestrian sweeps. The distance between crew members varied from 10-20 meters, depending on terrain, visibility, and vegetation encountered. In general, the parcels were open and visibility quite good. Due to the small size of

each of the four school sites (c. 10 acres each), archaeological sites and features were plotted on aerial photographs (approx. scale 1"=200', R.M. Towill, 1-31-77, Photos No. 7108-2, 7109-2) and recorded as they were found. Recent historic materials associated with the residences and current agricultural activities were noted, but not recorded.

Sections of the Kona Field System (Site 10-37-6601) were accurately plotted on the aerial photographs, and dimensional data were collected using metric tape and compass. No new site or feature designations were assigned to the portions of the Kona Field System present in the individual school site parcels of the project area. Historic walls and terraces (associated with agricultural activity) were assigned a single temporary site number for each feature area, rather than designating them as separate individual sites and features. Black-and-white 35 mm photographs were taken of each designated site, and each site was described on standard PHRI survey record forms. When appropriate, a site was sketch mapped (approx. scale), and marked with pink flagging tape and with an aluminum tag bearing the temporary site number, date, the letters "PHRI," and the PHRI project number (87-368).

FINDINGS

Fifteen newly identified sites (15 component features) and two separate remnants of a previously identified site (9 component features) were located during the reconnaissance survey of the four Konawaena Elementary School Sites. The sites and features are summarized in Table 1, and their locations are indicated on Figures 2 thru 5. Formal site types present within the project area include rock walls, agricultural complexes, walled terraces, residential remains, and sections of the Kona Field System. Functional types present in the project area include agriculture, animal control, property boundaries, and habitation.

SCHOOL SITE #1

(Figure 2)

Four newly recorded sites (T-11 thru -4) and four component features of previously recorded Site 50-10-37-6601 (Kona Field System) were identified within School Site #1.

Site T-11 - Rock Wall

Site T-11 is a rock wall comprised of stacked pahoehoe and basalt cobbles and boulders. The wall is oriented roughly north-south, and is situated in the center of School Site #1, dividing it in half. The northern end of the wall is just east of the tack house and blacksmith shop associated with the Paris Ranch. The wall is large, well-built, core-filled and faced on both sides, and is kept in good repair. It measures 0.75-0.90 m wide (6-7 stones) and 1.2 m high (9-10 courses). The wall is historic in age, and appears to be used for animal control and function also as a property boundary.

Site T-12 - Rock Wall

Site T-12 is a rock wall comprised of stacked pahoehoe and basalt cobbles and boulders. The wall is oriented roughly east-west along the southern edge of School Site #1, with the eastern end adjoining and perpendicular to Site T-11. The wall is well-built, core-filled and faced on both sides, and is kept in good repair. It measures 0.47-0.80 m wide (3-4 stones) and 1.2 m high (8 courses). There is a wire gate with cement supports associated with an old residence (Site T-14) within the center of the wall. The gate measures 0.80 m wide, 1.15 m high, with an opening of 1.44 m. The wall is historic in age, and was probably used as a property boundary for the old residence, as well as for animal control.

Site T-13 - Rock Wall

Site T-13 is a stacked as and pahoehoe cobble and boulder wall oriented roughly east-west along the northern edge of School Site #1. The wall is core-filled and faced on both sides, and measures 0.8-1.0 m wide and 0.9 m high (5 courses). The western end of the wall adjoins and is perpendicular to the Site T-11 wall near the tack house of the Paris

Table 1.
SUMMARY OF IDENTIFIED SITES
KONWENA ELEMENTARY SCHOOL SITES

Site Number	Formal Site Type	Tentative Functional Interpretation	*OH Value Mode Assess.			#Further Work	Comments
			R	I	C		
T-1	Rock Wall	Animal Control/ Agricultural Boundary	L	L	L	- - -	Historic wall; in School Site #5.
T-2	Walled Terraces	Agriculture	L	L	L	- - -	Series of terraces and low walls; historic age and related to agricultural clearing; in School Site #5.
T-3	Rock Wall	Animal Control/ Property Boundary	L	L	L	- - -	Historic wall with opening formed by a wooden lintel cross beam (possible pig trap); in School Site #5.
T-4	Rock Wall	Animal Control/ Agricultural Boundary	L	L	L	- - -	Historic wall appears to be boundary for macadamia nut orchard and cattle pasture; in School Site #5.
T-5	Walled Terraces	Agriculture	L	L	L	- - -	Historic terraces at edge of abandoned coffee orchard; in School Site #3.
T-6	Walled Terraces	Agriculture	L	L	L	- - -	Historic terraces within existing coffee orchard; in School Site #3.
T-7	Walled Terraces	Agriculture	L	L	L	- - -	Historic terraces at edge of existing coffee orchard; in School Site #3.
T-8	Rock Wall	Animal Control/ Agricultural Boundary	L	L	L	- - -	Historic wall separating open pasture from coffee orchard; possibly built atop older field boundary; in School Site #3.
T-9	Rock Wall	Animal Control/ Property Boundary	L	L	L	- - -	Historic wall; in School Site #2.
T-10	Walled Terraces	Agriculture	L	L	L	- - -	Series of historic walled terraces, probably related to coffee orchard once in the area; remains of 1930s Chevrolet at site; in School Site #2.

*Cultural Resource Management Value Mode Assessment--Nature: R = scientific research, I = interpretive, C = cultural;
Degree: H = high, M = moderate, L = low.

#Field Work Tasks: DR = detailed recording (scaled drawings, photographs, written descriptions); SC = surface collections;
EX = test/limited excavations.

Table 1. (Cont.)

Site Number	Formal Site Type	Tentative Functional Interpretation	*QM Value			#Further Work	Comments
			R	I	C		
T-11	Rock Wall	Animal Control/ Property Boundary	L	L	L	- - -	Historic wall in recent use and repair; in School Site #1.
T-12	Rock Wall	Animal Control/ Property Boundary	L	L	L	- - -	Historic wall with gate in center associated with old residence (Site T-14); in School Site #1.
T-13	Rock Wall	Animal Control/ Property Boundary	L	L	L	- - -	Historic wall, possibly built atop Kona Field System boundary; in School Site #1.
T-14	Residential Remains	Habitation	L	L	L	- - -	Historic foundation and cistern of old residence; area bulldozed and leveled for coffee field; scattering of historic artifacts associated with residence appear to date to early 1900s; in School Site #1.
50-10-37-6601	Complex	Agriculture/ Habitation	M	L	L	+ - +	Prehistoric Kona Field System; component field unit boundaries in School Sites #1 (4 features) and #5 (5 features).
Japanese School/ Existing Residence		School House	M	L	M	+ - +	Part of residence in SW corner of School Site #3; according to current occupants, school dates back c. 100 years.

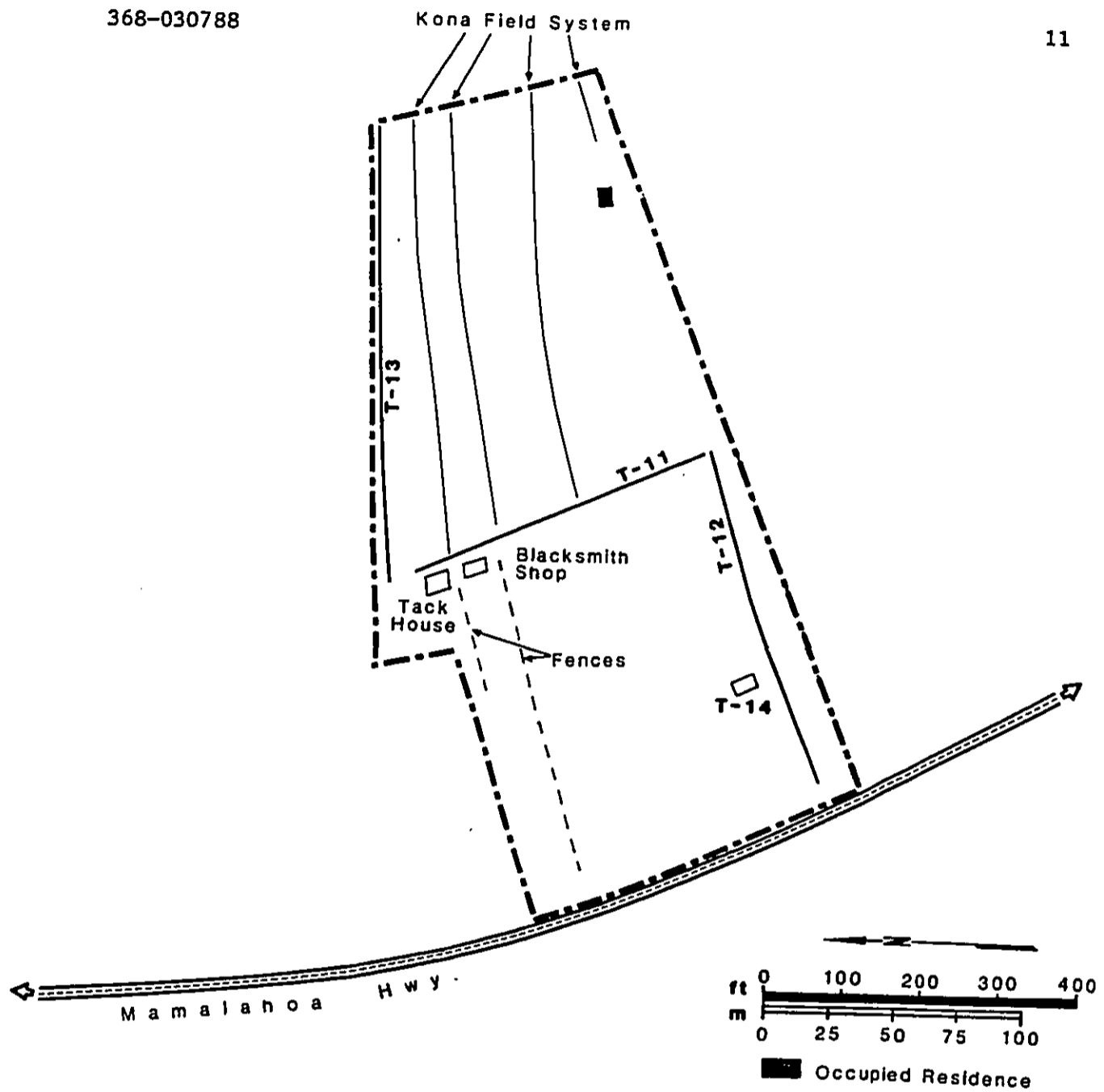


Figure 2. ARCHAEOLOGICAL SITE LOCATION MAP: SCHOOL SITE #1

Ranch. It is possible that Site T-13 was built on top of an older Kona Field System field boundary, since it parallels the field boundaries which were identified in the general area. Site T-13 is a historic period wall probably used as a property boundary and for animal control as well.

Site T-14 - Residential Remains

Site T-14 is located in the southwest portion of School Site #1, just north of the gate located within Site T-12 wall. The site consists of abandoned the remains of a foundation, cistern, and associated debris of an old residence which has been bulldozed in the course of leveling the general area for agricultural purposes. A coffee orchard with scattered banana, mango, avocado, and macadamia nut trees is present within the site area. The site area measures c. 7.5 m (N-S), c. 7.0 m (E-W), and c. 0.4 m high. The rough dimensions of the cement foundation are 5.0 by 5.0 m. A circular pit with shoulders is just south of the foundation and probably represents a cistern. The pit is faced with cement and possibly lime mortar. Portable remains scattered about the site include a cast iron pitcher pump, oriental porcelain fragments, English cream stoneware fragments, cobalt blue glass fragments, Mason jar fragments, round wire nails, an earthenware marble, a four-hole indented glass button, a Lincoln head wheat penny (date uncertain), and scattered fragments of brown, green and clear glass. A few waterworn pebbles were observed in the graded dirt road which separates the house foundation from the T-12 wall. Site T-14 represents the remains of a historic period residence probably dating to the early 1900s.

Site 50-10-37-6601 - Kona Field System

As noted earlier Site 50-10-37-6601 is an extensive complex of dryland agricultural fields, field boundaries, and associated features covering an area of c. 3 by 18 miles. Four field boundary features associated with this site complex were identified within School Site #1. The southernmost field boundary is situated just inland (east) of the occupied residence in the SE corner of the school site. It consists of a linear rock and dirt mound measuring 2.8 m wide and 0.3 m high. The field boundary is oriented 55 degrees (Az) and probably continued to the west at one time, but this area has been altered by residential and road construction and use.

Three additional field boundary features are situated in the northeast section of School Site #1, to the north of the residence in the SE corner, east of the Site T-11 wall, and south of the Site T-13 wall. These three field boundaries are parallel to each other and are oriented c. 64-70 degrees (Az). Their eastern ends of dirt and rock, while their western ends have been modified by recent agricultural activity. This modification consists primarily of the addition of rocks to the boundaries to clear the adjacent ground surface for easier agricultural management. These field system boundaries are spaced c. 16.0-20.0 m apart, and measure c. 2.7 m wide and 0.45 m high. Remnants of the two northernmost field boundaries may extend to the south of the Site T-11 wall, into the pasture with the tack house and blacksmith shop. However, due to the fences and corrals built within this pasture, the exact extent of the field system boundaries into this area could not be determined.

SCHOOL SITE #2

(Figure 3)

Two newly recorded sites (T-9, -10) were identified within School Site #2. In addition, twelve volcanic glass fragments were collected from the surface along a dirt road in an area of recent walled terraces used for growing coffee. This volcanic glass possibly comes from road fill.

Site T-9 - Rock Wall

Site T-9 is discontinuous rock wall which is oriented east-west (68 degrees Az) in the center of School Site #2. It is built of stacked pahoehoe cobbles and boulders, and is core-filled and faced on both sides. The western end of the wall is in an area of dense grass. The wall measures 0.8 m wide and 0.9 m high. Site T-9 appears to be historic in age, and is probably associated with animal control or property boundaries.

Site T-10 - Walled Terraces

Site T-10 consists of a series of rock-walled terraces situated in the center of School Site #2, to the south of the T-9 wall. The terraces measure c. 5.5 m long, 3.5 m wide, and 0.65-1.05 m high. Site T-10 appears to represent historic period terracing and rock clearing associated with coffee cultivation. Similar features are currently being used for this purpose to the north and south of Site T-10. The remains of an old 1930s Chevrolet are present within Site T-10. No midden or prehistoric portable remains were observed.

SCHOOL SITE #3

(Figure 4)

Four newly identified sites (T-5 thru -8) were found within School Site #3. In addition, part of a presently occupied house in the southwest corner of the school site apparently once used to be a Japanese School.

Site T-5 - Walled Terrace

Site T-5 is a rock-walled terrace to the southeast of the residence in the southwest corner of School Site #3. Site T-5 has been disturbed by bulldozing activity, and around the intact area is a remaining section of the coffee orchard which is visible in the 1977 aerial photograph. The walled terrace measures c. 0.75 m wide and 1.4 m high (9-10 courses), with a well-built sloping face of stacked pahoehoe boulders and cobbles. Site T-5 is historic in age, and associated with agricultural activity.

Site T-6 - Walled Terrace

Site T-6 is a rock-walled terrace within the existing coffee orchard in the northwest portion of the school site area. Site T-6 is similar to Site T-5, and is built of stacked pahoehoe boulders and cobbles measuring

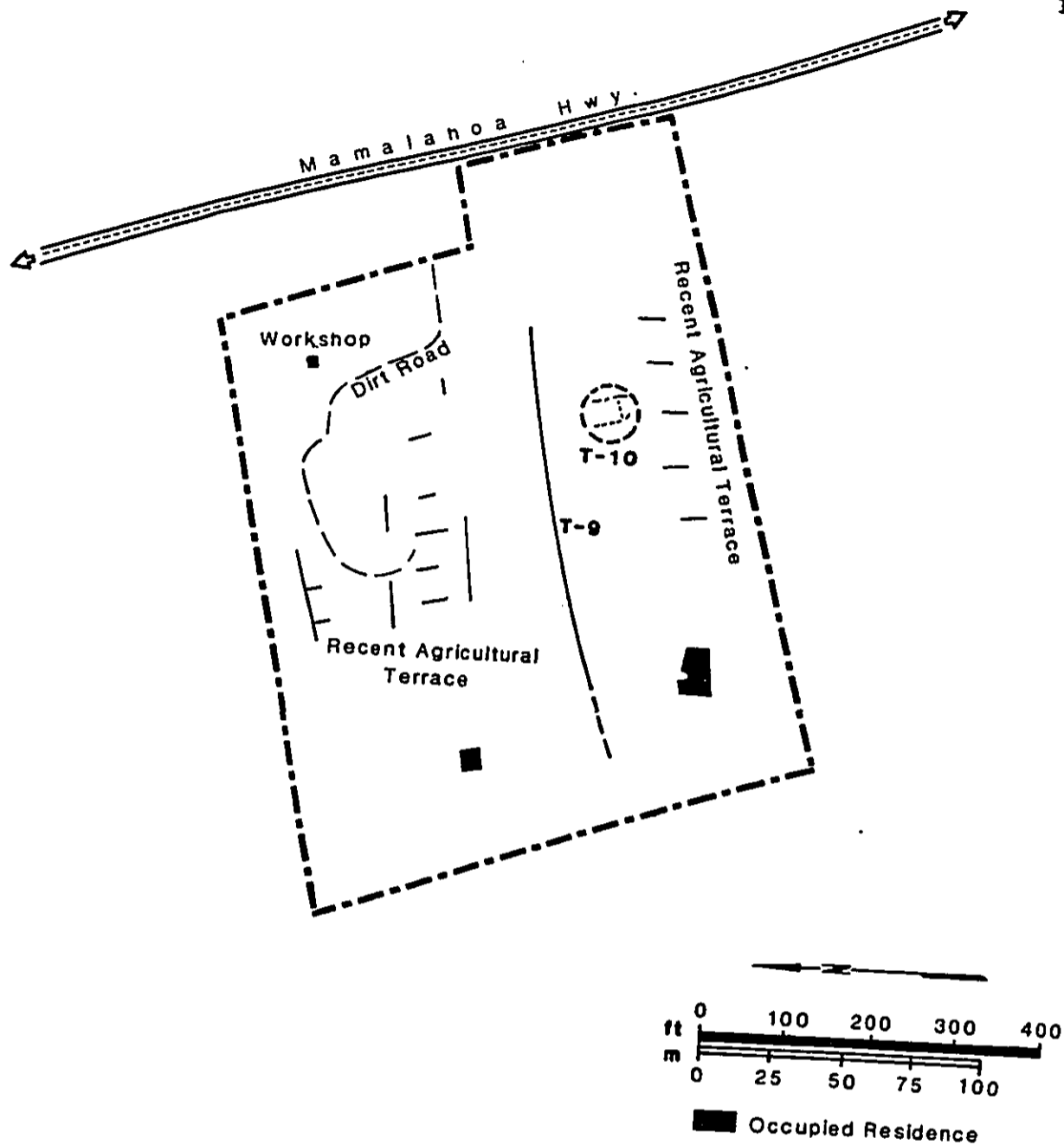


Figure 3. ARCHAEOLOGICAL SITE LOCATION MAP: SCHOOL SITE #2

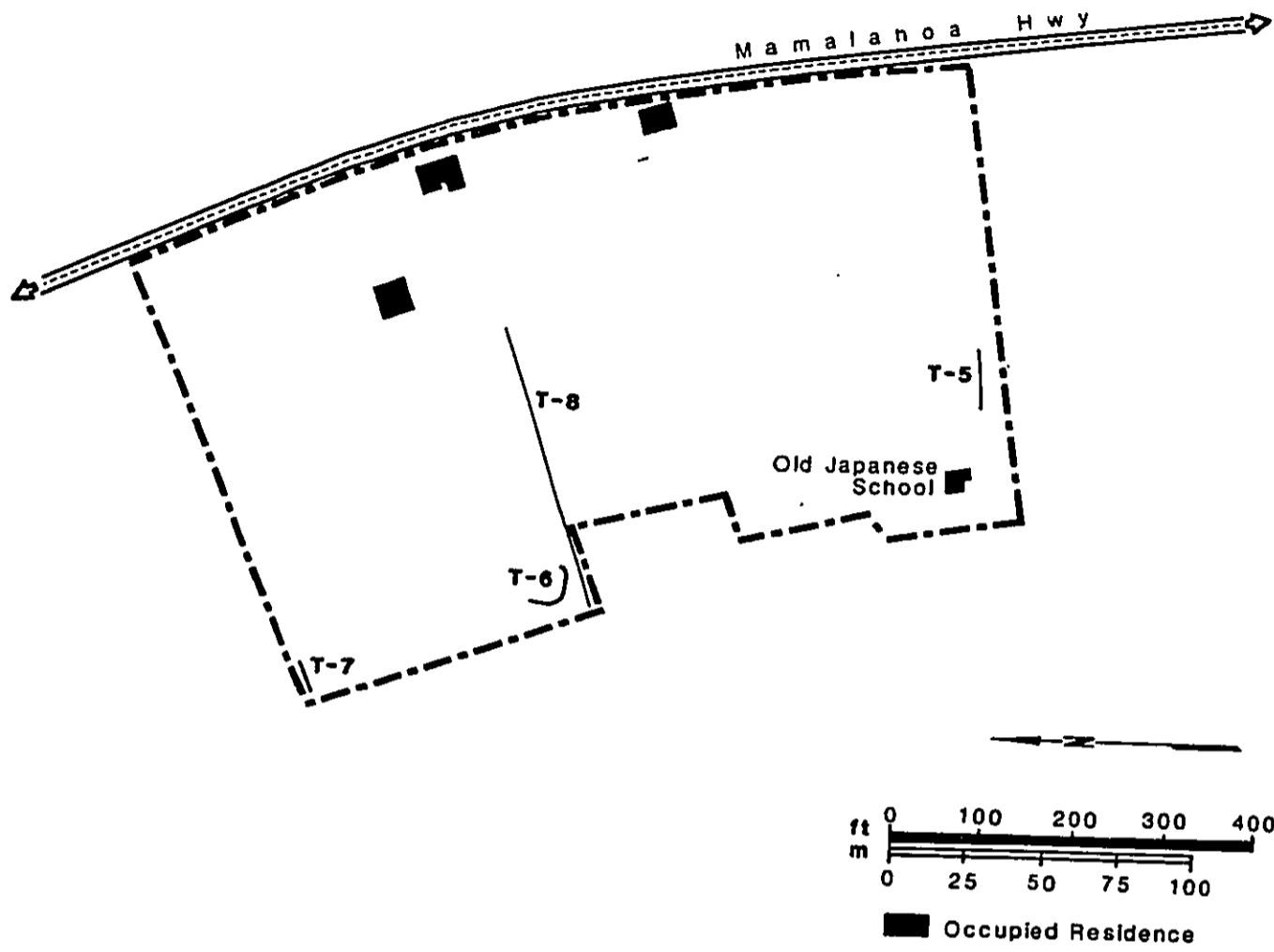


Figure 4. ARCHAEOLOGICAL SITE LOCATION MAP: SCHOOL SITE #3

1.4 m high (8-10 courses). The site is historic in age, and undoubtedly is related to the current agricultural activity in the area.

Site T-7 - Walled Terrace

Site T-7 is a rock-walled terrace situated at the northwest corner of School Site #3, at the edge of the existing coffee orchard. The terrace is near the northern boundary of the school's site, and a barbed wire fence is located just to the north of Site T-7. It is built of piled basalt and pahoehoe boulders and cobbles, and is partially collapsed in areas. The intact sections are well-faced and measure 2.2 m wide and 2.4 m high (11 courses). The site is historic in age, and probably related to agricultural activity.

Site T-8 - Rock Wall

Site T-8 is a rock wall oriented roughly east-west which is situated in the center of School Site #3. The wall separates the active pasture with cattle from the coffee orchard and residences to the north. A wire fence parallels a section of the wall. The wall is constructed of roughly stacked basalt boulders and cobbles. The area appears to have been drag-cleared at one time, as there are segments of cable under the wall, and parts of the downslope side are collapsed. The wall follows a slight ridgeline at the north end of the open pasture. The ridgeline may be a remnant field boundary of the Kona Field System, but due to all of the disturbance and modification in the area it is undetermined. The wall measures 1.7 m wide and 1.8 m high. Site T-8 is historic in age, and appears to represent an animal control feature and/or an agricultural property boundary.

Japanese School/Residence

In the southwestern corner portion of School Site #3 is an occupied residence, part of which used to be an old Japanese School. According to the current residents, Mr. and Mrs. Silvester Takaki, the Japanese school dates back about 100 years. A scattering of recent rubbish was located behind the house on the edge of the school site area, and there may be older material dating to the period of the use of the Japanese School buried under the deposit.

SCHOOL SITE #5

(Figure 5)

Four newly identified sites (T-1 thru -4) and five features associated with previously recorded Site 50-10-37-6601 (Kona Field System) were found within School Site #5.

Site T-1 - Rock Wall

Site T-1 is a rock wall located in the southeast section of School Site #5. It is oriented roughly east-west, and borders the northern edge

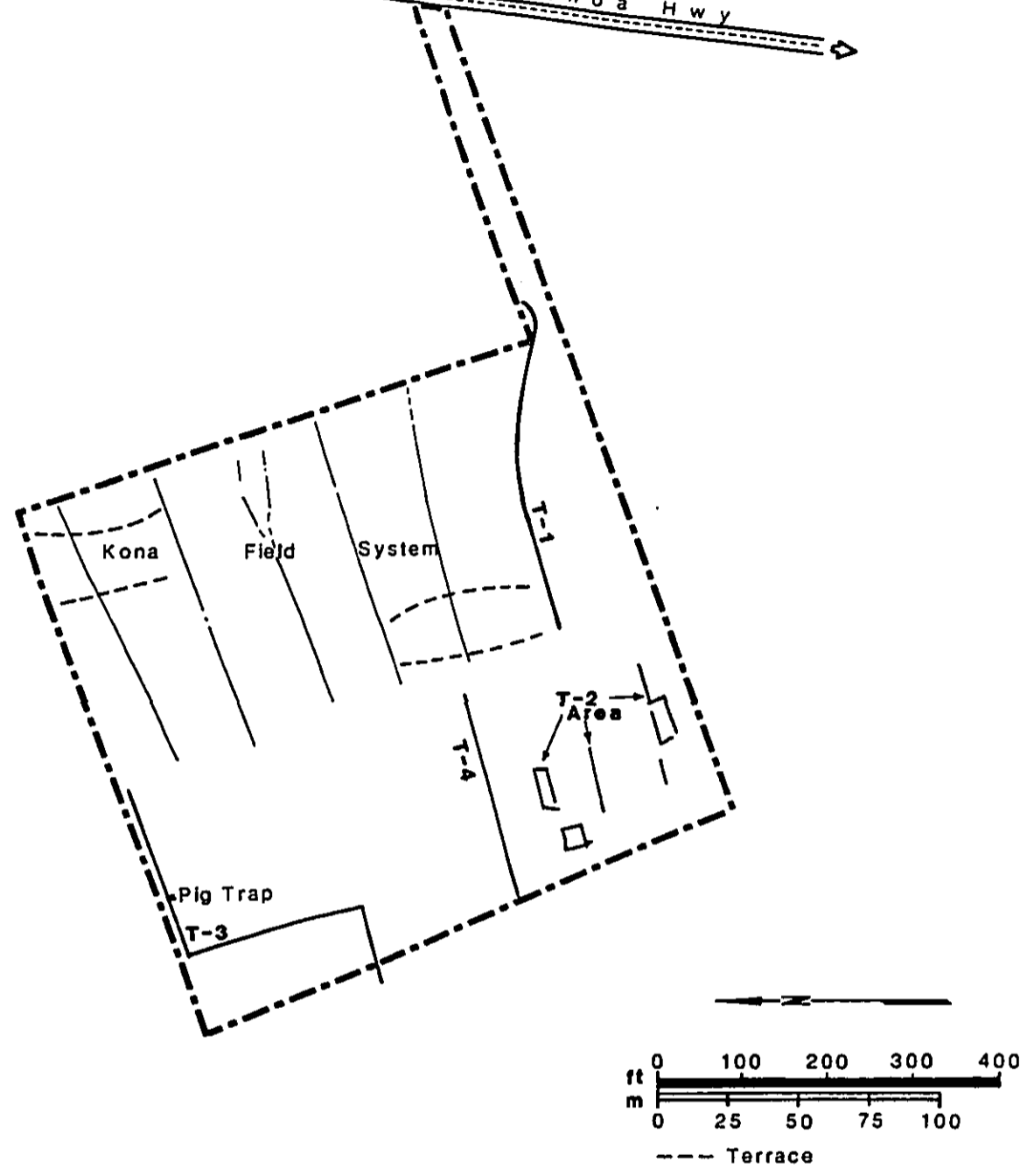


Figure 5. ARCHAEOLOGICAL SITE LOCATION MAP: SCHOOL SITE #5

of an abandoned coffee orchard. The wall is built of stacked basalt cobbles and boulders, and measures 0.8 m wide (6-7 stones) by 1.0 m high (5-6 courses). The wall is faced on both sides and is in good condition. Site T-1 is historic in age, and appears to represent an animal control feature and agricultural property boundary.

Site T-2 - Walled Terraces

Site T-2 consists of a series of terraces and low rock walls which are related to agricultural activity. It is situated within an existing macadamia nut, avocado, and coffee orchard in the southwest corner of School Site #5. The low walls are constructed of piled pahoehoe boulders, and are concentrated around the coffee and avocado trees to facilitate the collecting of the macadamia nuts. The terraces formed by the rock walls average 8.0 by 11.0 m and are 0.3-0.4 m high. A few of the rocks within the walls and terraces appear to be waterworn and fire-cracked, but no definite prehistoric cultural remains were observed within the site area. Site T-2 represents features associated with historic agricultural activities.

Site T-3 - Rock Wall

Site T-3 is a rock wall situated in the northwest corner of School Site #5. From the large area of bamboo on the northern edge of the school site, the wall follows the northern parcel boundary to the west for about 200 ft (60 m). An opening (0.7 m long and 0.45 m high), with a round wooden lintel crossbeam (1.2 m long and 0.1 m in diameter) over the top of the opening is present in this section of the wall, having been built into the wall. This opening may represent a pig trap. After following the northern school site boundary for c. 200 ft, the wall bends to the south, and is oriented north-south for c. 200 ft before bending back to the west, where it continues on outside of the school site area. The wall is built of stacked pahoehoe cobbles and boulders and is core-filled. It is faced on both sides and measures 0.75m wide (6-7 stones) by 1.25 m high (10-11 courses). The wall currently separates an open pasture with cattle to the north, from the pasture with scattered trees where a barn and storage shed are located in the center of the school site. Site T-3 is historic in age, and represents an animal control feature and property boundary.

Site T-4 - Rock Wall

Site T-4 is a rock wall situated in the western center of School Site #5. It is oriented roughly east-west, and follows the northern edge of the macadamia nut, coffee, and avocado orchard, separating the orchard from the open pasture to the north. The wall is built of stacked basalt cobbles and boulders, and is faced on the side toward the orchard. It measures 2.7 m wide (c. 8-10 stones) and 0.72 m high (3 courses). Site T-4 is historic in age, and appears to be an animal control feature and agricultural property boundary.

Site 50-10-37-6601 - Kona Field System

Five component features of Site 10-37-6601 were identified within School Site #5. These consist of a series of five, east-west oriented (59-60 degrees Az) agricultural field boundaries situated in the eastern half of the school site. They are built of piled rock and earth, and form linear mounds. All five of these field boundaries continue to the east, outside of the school site area, but could not be detected further to the west of the north-south fence line near the barn and storage shed. The southernmost field boundary (#1) measures c. 1.8 m wide by 0.36 m high, and is grass-covered. The second field boundary to the north (#2) measures c. 2.2 m wide by 0.45 m high, and is also grass-covered. The third field boundary to the north (#3) is in alignment with a kukui tree. To the east of the kukui tree, the field boundary splits into two parallel earthen mounds, while to the west of the tree the two parallel mounds rejoin together to form a single field boundary. Field boundary #3 measures c. 1.4 m wide by 0.45 m high. Basalt boulders are visible within the soil of this field boundary. The fourth field boundary to the north (#4) measures 1.6 m wide and 0.2 m high, while the fifth and northernmost field boundary (#5) is 1.4 m wide by 0.25 m high and it has been disturbed by a dirt road which runs along the north edge of the school site in this area. Between field boundaries #4 and #5, in the northeast corner of the school site, are two terraced areas which are perpendicular to the field boundaries. These terraces do not appear to be constructed of rock, but represent rises in elevation perpendicular to the field boundaries and incorporating the area between them. A dirt road is located just north of these terraces, and they probably represent parts of the original Kona Field System. Two additional rises in elevation are situated north of the Site T-1 wall, between the wall and field boundary #2. They are also perpendicular to the field boundaries and may represent earthen terraces which are parts of the Kona Field System.

CONCLUSION

DISCUSSION

The archaeological reconnaissance survey of the four Konawaena Elementary School Sites identified 17 sites (24 component features), including two separate remnants of a previously identified site and fifteen newly identified sites. The fifteen newly identified sites consist of 15 component features. Nine component features of the previously identified Site 50-10-37-6601 (Kona Field System) were identified. Formal feature types present in the project area include walls, walled terraces, residential remains, and earthen mounds. Probable functional interpretations include habitation, animal control, agriculture, and property boundaries.

Cultural remains identified in the Konawaena Elementary School Sites project area include remains dating primarily to the historic period, but also to the late prehistoric period. Historic period remains include all of the newly recorded sites, consisting of rock walls (T-1, -3, -4, -8, -9, -11, -12, -13), walled terraces associated with agriculture (T-2, -5, -6, -7, -10), and residential remains (T-14). In addition to these primarily agricultural sites, one of the occupied residences in School Site #3 was to be part of an old Japanese School which dates back c. 100 years.

The only definite prehistoric remains identified within the Konawaena Elementary School Sites project area were the nine dryland field system boundary features of the Kona Field System (Site 50-10-37-6601). Four of these features were found in School Site #1, and five were found in School Site #5. One of the rock walls (T-8) in School Site #3 is possibly atop a field system boundary. The Kona Field System dates to the late prehistoric period, but may have been used during historic times, well into the mid 1900s (Newman 1970, Kelly 1983).

GENERAL SIGNIFICANCE ASSESSMENTS AND RECOMMENDED GENERAL TREATMENTS

To facilitate State and County review, general significance assessments and recommended general treatments for all identified sites are summarized in the following Table 2. Significance categories used in the site evaluation process are based on the National Register criteria for evaluation, outlined in the Code of Federal Regulations (36 CFR Part 60). The Hawaii State Historic Preservation Office (SHPO/DLNR-HSS) uses these criteria for evaluating cultural resources. Sites determined to be potentially significant for information content (Category A, Table 2) fall

Table 2.

**SUMMARY OF GENERAL SIGNIFICANCE ASSESSMENTS
AND RECOMMENDED GENERAL TREATMENTS**

Site or Feature No.	Significance Category				Recommended Treatment			
	A	X	B	C	FDC	NEW	PID	PAI
T-1	-	+	-	-	-	+	-	-
T-2	-	+	-	-	-	+	-	-
T-3	-	+	-	-	-	+	-	-
T-4	-	+	-	-	-	+	-	-
T-5	-	+	-	-	-	+	-	-
T-6	-	+	-	-	-	+	-	-
T-7	-	+	-	-	-	+	-	-
T-8	+	-	-	-	+	-	-	-
T-9	-	+	-	-	-	+	-	-
T-10	-	+	-	-	-	+	-	-
T-11	-	+	-	-	-	+	-	-
T-12	-	+	-	-	-	+	-	-
T-13	-	+	-	-	-	+	-	-
T-14	+	-	-	-	+	-	-	-
50-10-37-6601 [#] (Kona Field System)	+	-	-	-	+	-	-	-
Japanese School/ Existing Residence	+	-	*	*	+	-	-	-

General Significance Categories:

A=Important for information content, further data collection necessary (PHRI=research value);
 X=Important for information content, no further data collection necessary (PHRI=research value, SHPO=not significant);
 B=Excellent example of site type at local, region, island, State, or National level (PHRI=interpretive value); and
 C=Culturally significant (PHRI=cultural value).

Recommended General Treatments:

FDC=Further data collection necessary (intensive survey and testing, and possibly subsequent data recovery/mitigation excavations);
 NEW=No further work of any kind necessary, sufficient data collected, archaeological clearance recommended, no preservation potential (possible inclusion into landscaping suggested for consideration);
 PID=Preservation with some level of interpretive development recommended (including appropriate related data recovery work); and
 PAI=Preservation "as is," with no further work (and possible inclusion into landscaping), or minimal further data collection necessary.

[#]Two separate Kona Field System remnants (in School Sites #1 and #5).

*Provisional assessment; pending further data collection.

under Criterion D, which defines significant resources as ones which "...have yielded, or may be likely to yield, information important in prehistory or history." Sites potentially significant as representative examples of site types (Category B, Table 2) are evaluated under Criterion C, which defines significant resources as those which "...embody the distinctive characteristics of a type, period, or method of construction...or that represent a significant and distinguishable entity whose components may lack individual distinction."

Sites with potential cultural significance (Category C, Table 2) are evaluated under guidelines prepared by the Advisory Council on Historic Preservation (ACHP) entitled "Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review" (1985). The guidelines define cultural value as "...the contribution made by an historic property to an ongoing society or cultural system. A traditional cultural value is a cultural value that has historical depth" (1985:1). The guidelines further specify that "[a] property need not have been in consistent use since antiquity by a cultural system in order to have traditional cultural value" (1985:7).

Of the 17 sites identified in the Konawaena Elementary School Sites project area, 16 were assessed as being significant solely for information content only; sufficient data have been collected from 12 of these sites, and no further work is recommended for them (Sites T-1 thru T-7, T-9 thru T-13). Limited further data collection (detailed recording and test excavations to recover radiocarbon dating and other samples) is recommended as appropriate for four sites that were assessed as being important for information content only, including the two separate remnants of the Kona Field System (Site 50-10-37-6601), the rock wall with the possible field boundary beneath it (T-8), and the remains of the historic residential house site (T-14). In addition, one of the existing residences used to be part of a Japanese School which dates back c. 100 years. This residence/school was assessed as being important for information content, as well as provisionally being significant as a good example of a site type and for its cultural values. Further data collection (detailed recording and possibly test excavations) is recommended for the Japanese School.

The evaluations and recommendations presented in this summary are based on the findings of a surface reconnaissance survey. Therefore, there is always the possibility--however remote--that during any subsequent development activity involving the modification of the land surface, previously unknown subsurface cultural remains of potential significance might be encountered. In such a situation, archaeological consultation should be sought immediately.

REFERENCES CITED

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APPENDIX A:

CORRELATION OF PHRI TEMPORARY SITE NUMBERS
WITH HAWAII STATE HISTORIC PLACES INVENTORY SITE NUMBERS*

PHRI Temporary Site Number	State Inventory Site Number
<u>School Site #1</u>	
Kona Field System Remnant (6601)	11,080
T-11	11,081
T-12	11,082
T-13	11,083
T-14	11,084
<u>School Site #2</u>	
T-9	11,085
T-10	11,086
<u>School Site #3</u>	
T-5	11,087
T-6	11,088
T-7	11,089
T-8	11,090
Japanese School/Existing Residence	11,091
<u>School Site #5</u>	
T-1	11,092
T-2	11,093
T-3	11,094
T-4	11,095
Kona Field System Remnant (6601)	11,096

*Hawaii State Historic Places Inventory numbers assigned by Department of Land and Natural Resources-Historic Sites Section after completion of reconnaissance survey field work. All inventory numbers are prefaced by 50-10-37 (50 = State of Hawaii, 10 = Island of Hawaii, 37 = 7.5 minute series USGS quad map ["Kealakekua, Hawaii"] where sites are located).