BENJAMIN J. CAYETANO
GOVERNOR

SAM CALLEJO
COMPTROLLER

MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

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

RECEIVED LETTER NO. PM-1060.7

MAR 19 1997

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OFC. OF ENVIRONMENTAL QUALITY CONTROL

Mr. Gary Gill
Director
Office of Environmental Quality Control
State Office Tower, Suite 702
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Department of Transportation - Maui District
Keanae Baseyard Renovations
D.A.G.S. Job No. 25-29-7632
TMK: 1-1-02:10

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

The State of Hawaii, Department of Accounting and General Services, has reviewed the comments received during the 30-day public comment period and believes that there will be no significant impact as a result of the project. Accordingly, we are issuing a negative declaration.

Enclosed are one (1) copy of the OEQC Bulletin Publication Form, a diskette containing the project summary and four (4) copies of the Final Environmental Assessment. We respectfully request that the notice of Final Environmental Assessment be published in the next edition of the *Environmental Notice*.

Very truly yours,

GORDON MATSUOKA
State Public Works Engineer

EN/si
Encl.

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1997-04-08-MA-FEA-Keanae Baseyard Renovations

Final Environmental Assessment

Keanae Baseyard Renovations

Prepared for

State of Hawaii
Department of Accounting
and General Services

March 1997

MUNEKIYO & ARAKAWA, INC.

Final
Environmental Assessment

Keanae Baseyard Renovations

Prepared for

State of Hawaii
Department of Accounting and General Services

March 1997

MUNEKIYO & ARAKAWA, INC.

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Preface

The applicant, State of Hawaii, Department of Accounting and General Services, on behalf of the State Department of Transportation, proposes to demolish the existing deteriorating buildings of the State Highways Division Keanae Baseyard and construct a new truck/storage shed, office building, above ground fuel tank and dispensers, as well as install asphalt paving for parking and driveway improvements. The proposed project involves the use of State lands and funds. Pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules, this Final Environmental Assessment documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

Chapter I

Project Overview

I. PROJECT OVERVIEW

A. PROPERTY LOCATION, BACKGROUND AND LAND OWNERSHIP

The subject property is identified as TMK 1-1-02:10 and is the site of the Department of Transportation (DOT), Highways Division's Keanae Baseyard. See Figure 1 and Figure 2. The parcel is comprised of approximately 3.096 acres of land located along Hana Highway, adjacent to the YMCA Camp Keanae complex.

Existing improvements on the subject property include two (2) mobile trailer offices, a 660 square foot office building, a 560 square foot storage shed, and an underground 500 gallon fuel storage tank with aboveground dispenser. According to County Real Property records, the storage shed and office building were constructed less than 50 years ago. Both buildings exhibit deteriorating conditions (e.g., wood rot, termite damage, etc.) and are functionally inadequate for DOT's purposes.

The landowner of the subject property is the State of Hawaii. The property, however, is under the control and management of the Department of Transportation, Highways Division.

B. PROPOSED ACTION

With the exception of the existing mobile trailer offices, the proposed renovation will involve the demolition of the existing, deteriorated baseyard facilities. Overall site configuration of the proposed project is illustrated in Figure 3. For the proposed improvements, project components are described as follows:

1. Office Building

The proposed office building is designed to be constructed with concrete masonry unit (CMU) walls and metal roofing. Building

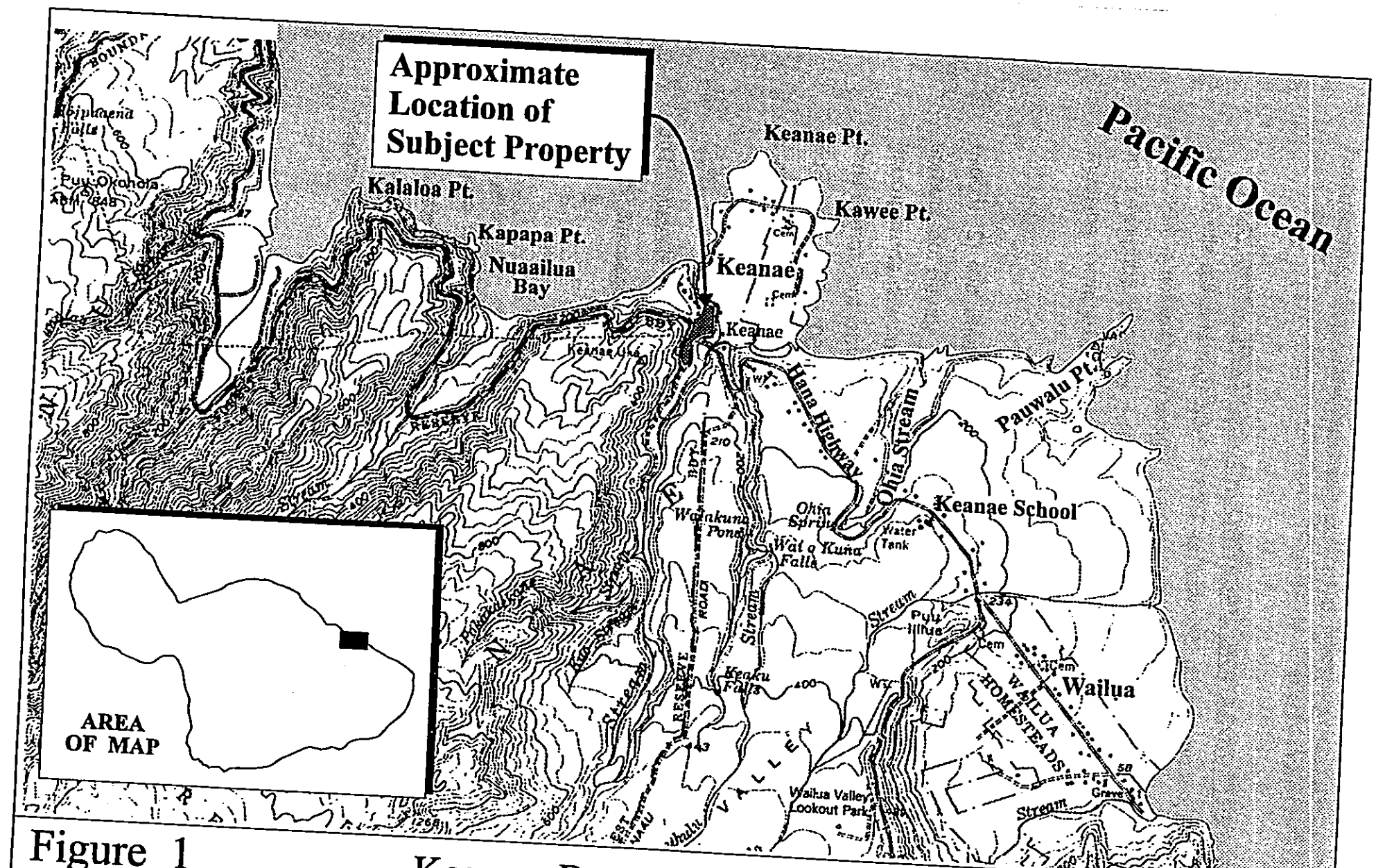

Figure 1

Keanae Baseyard Renovations

Regional Location Map

Prepared for: State of Hawaii, Dept. of Accounting and General Services

0 1000 2000 4000 Feet

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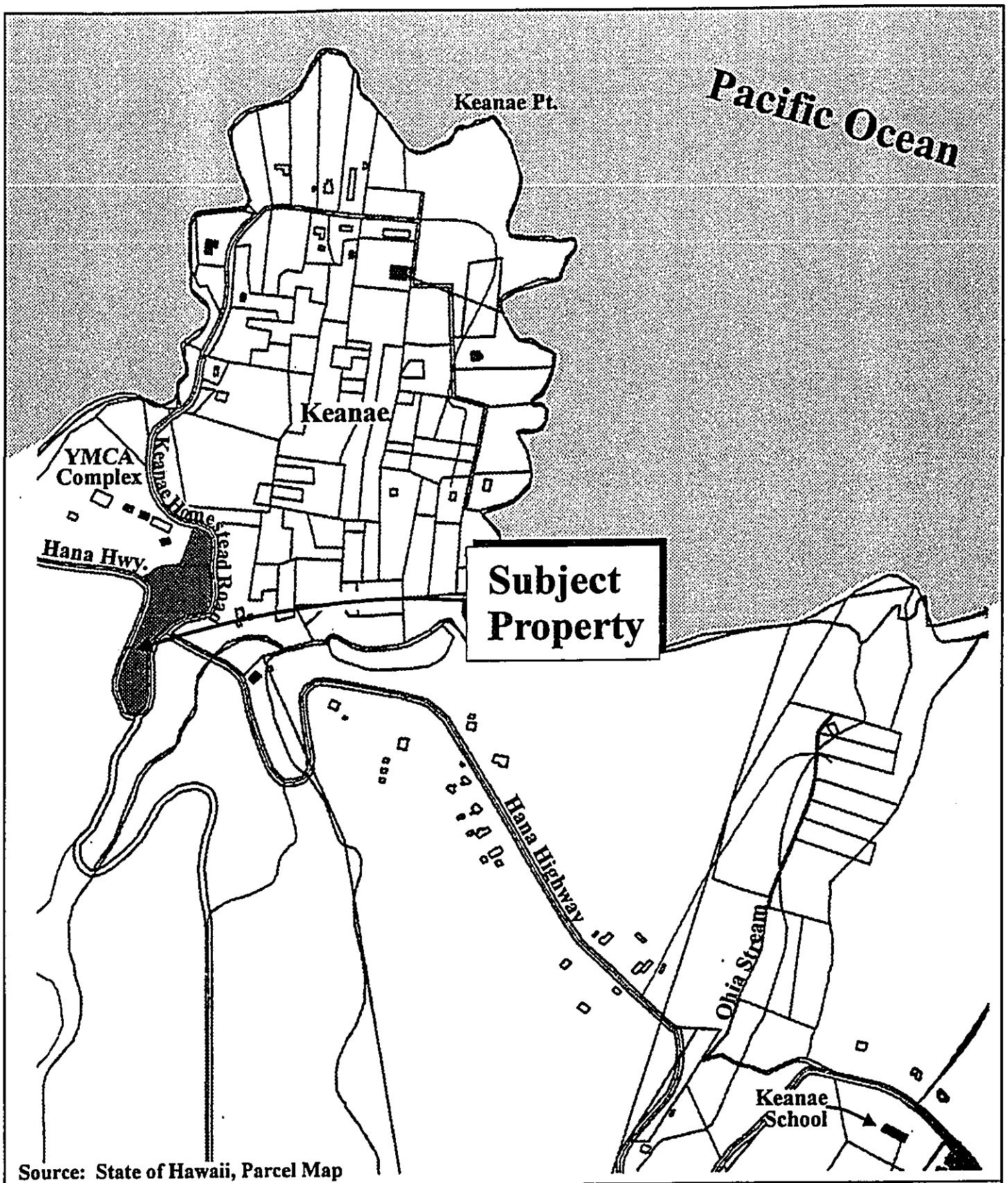


Source: State of Hawaii, Parcel Map

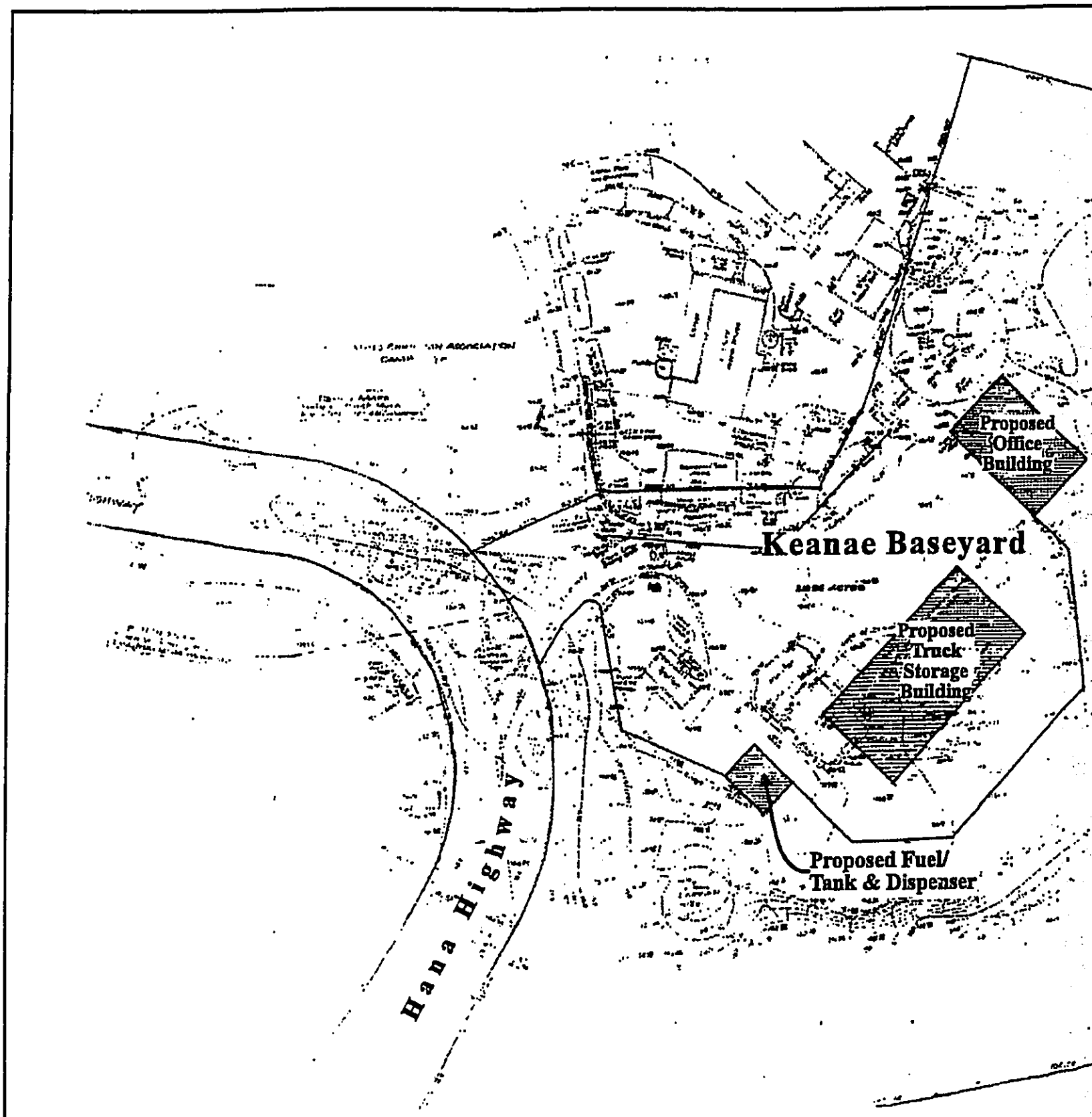
Figure 2 Keanae Baseyard Renovations

Site Location Map

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Accounting and General Services

NOT TO SCALE

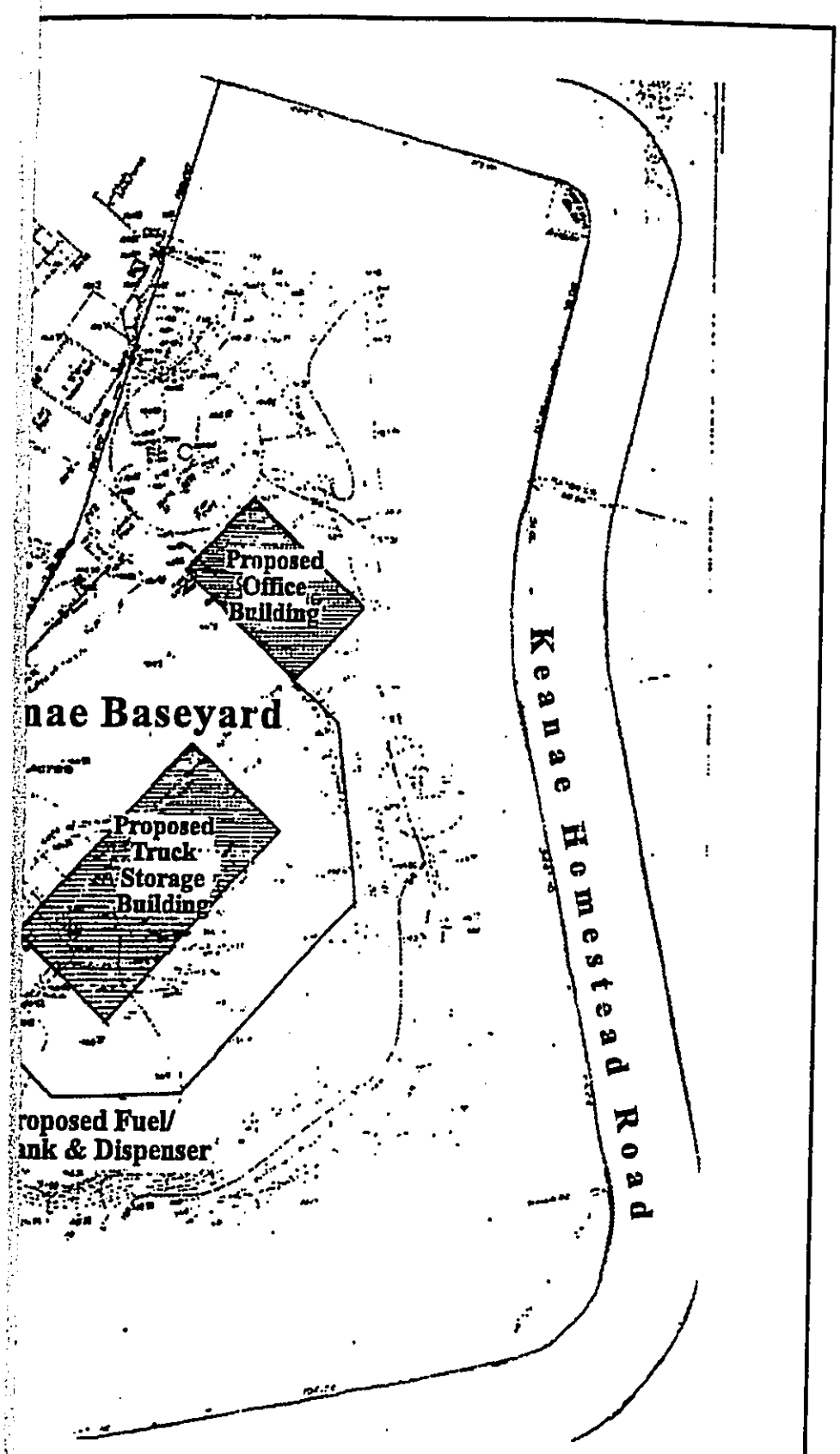


Source: Dept. of Accounting and General Services

Figure 3

Keanae Baseyard Renovations
Preliminary Site Plan

Prepared for: State of Hawaii, Dept. of Accounting and General Services



Renovations
Plan

MUNEKIYO & ARAKAWA, INC.

NOT TO SCALE

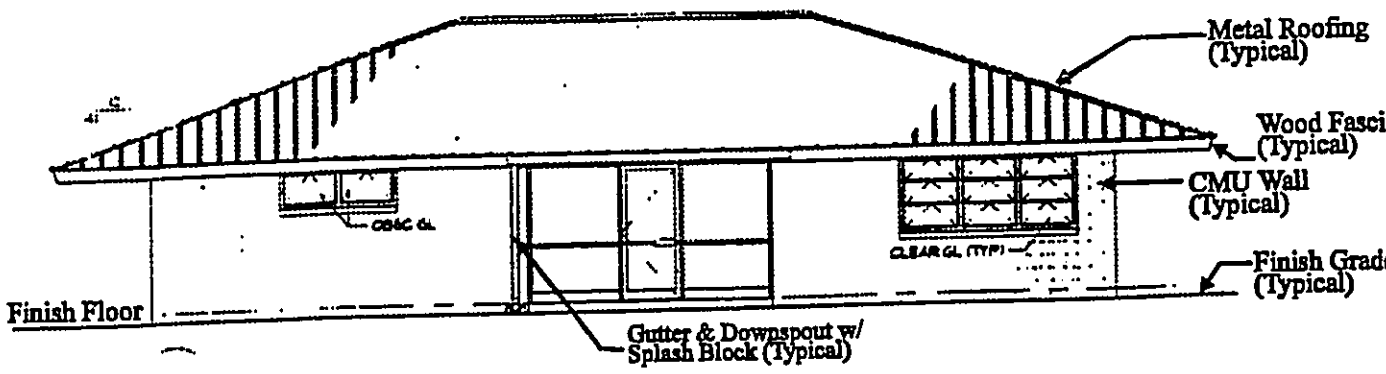
elevation is approximately 16 feet above finished grade. See Figure 4. The building interior will have a floor space of approximately 1,600 square feet and consists of a supervisor's room, conference room, break/lunch room, personal lockers and restrooms. See Figure 5.

2. ***Truck/Storage Shed***

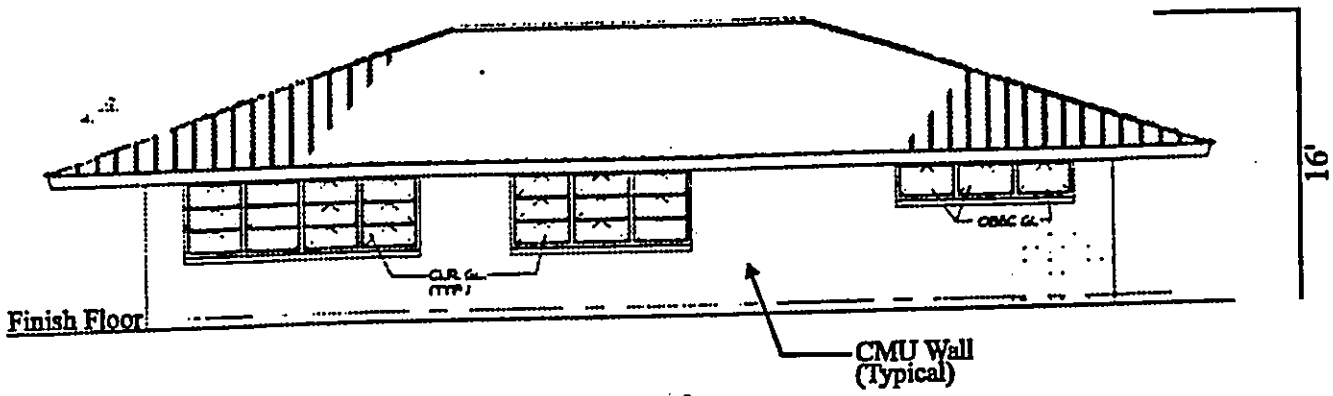
The proposed truck/storage shed is designed for storage of the State Highway's earth moving equipment (e.g., grader, mowers, loader, back hoe, trucks). The shed is designed to be constructed out of CMU walls and metal roofing. The building height is approximately 24 feet above finished grade. See Figure 6. The sides of the shed will be enclosed with no windows, while the front side of the shed will be kept open and the rear wall will include metal louvers for ventilation. The approximately 3,280 square foot building will also have work counters and flammable (e.g., herbicides, oils, 2-cycle fuel) and nonflammable storage rooms. See Figure 7.

3. ***Above Ground Fuel Tanks and Dispenser***

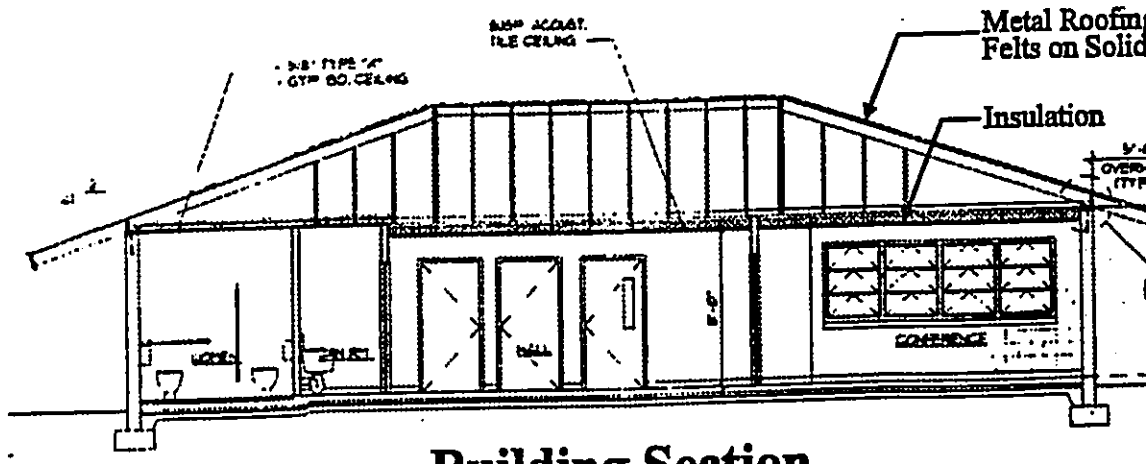
The above ground fuel dispensing system will consist of two (2) 500 gallon fuel storage tanks (for diesel and gasoline) with above ground dispensers located on an approximately 13-foot by 19-foot concrete slab. The cement slab will be surrounded by pipe bollards. See Figure 8. The purpose of the fuel tanks is to fuel State vehicles stored onsite. A small roof over the fuel dispensing area will provide protection from the rain when vehicles are being fueled.



West Elevation



East Elevation



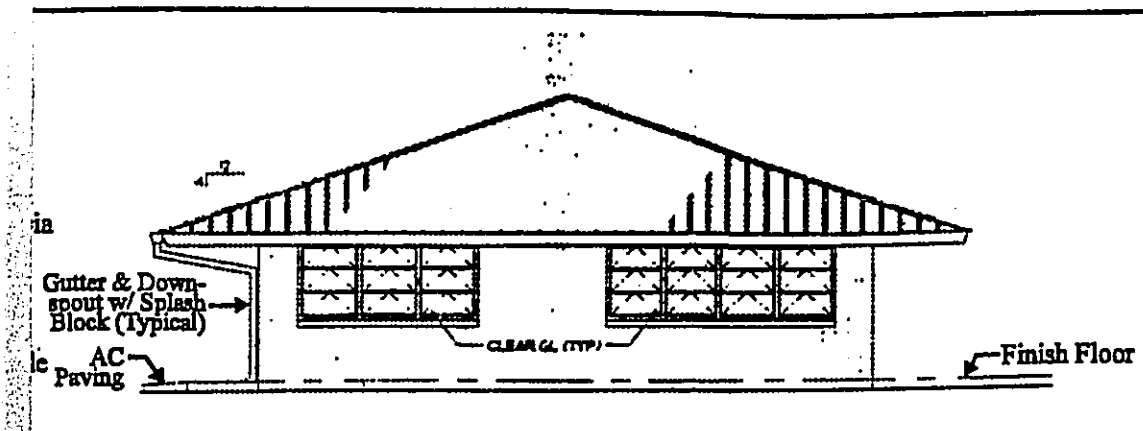
Building Section

Source: Thomas T. Agawa & Associates

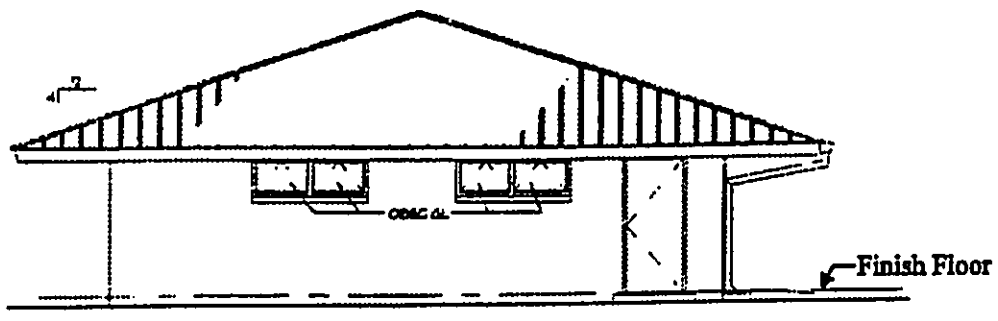
Figure 4

Keanae Baseyard Renovation
Office Building Elevations

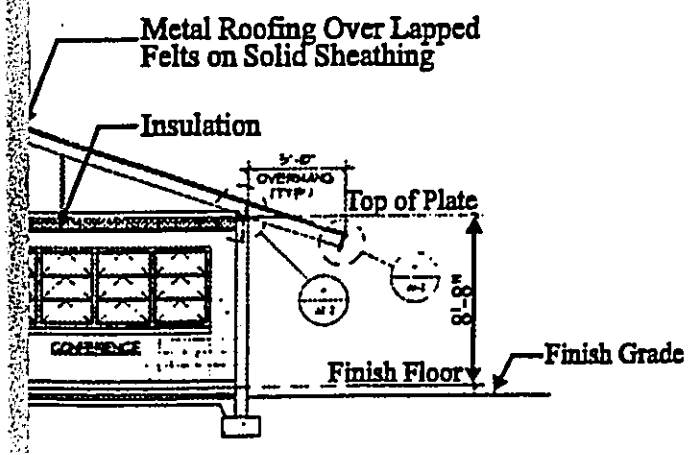
Prepared for: State of Hawaii, Dept. of Accounting and General Services



South Elevation



North Elevation



Renovations

Elevations

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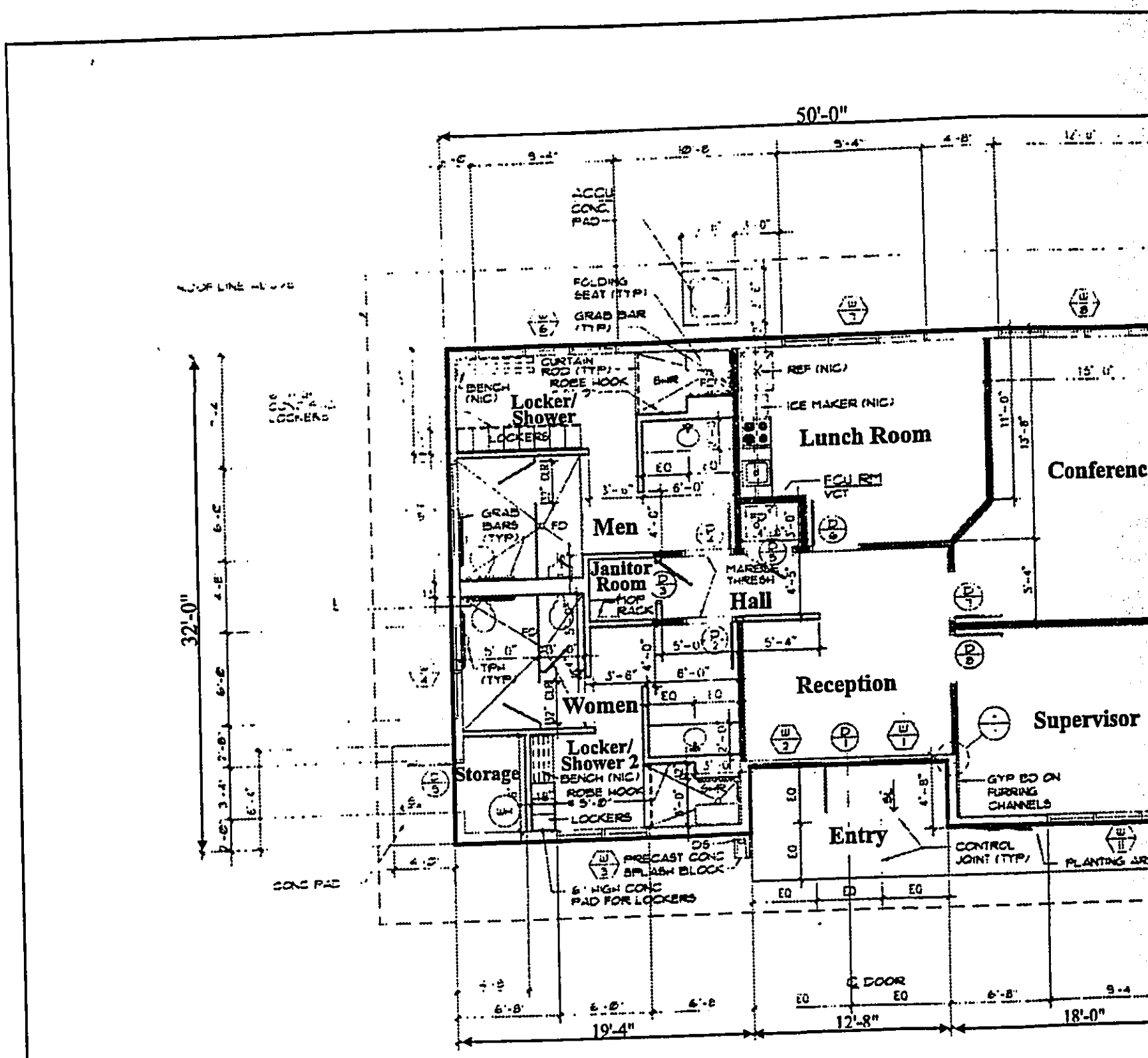
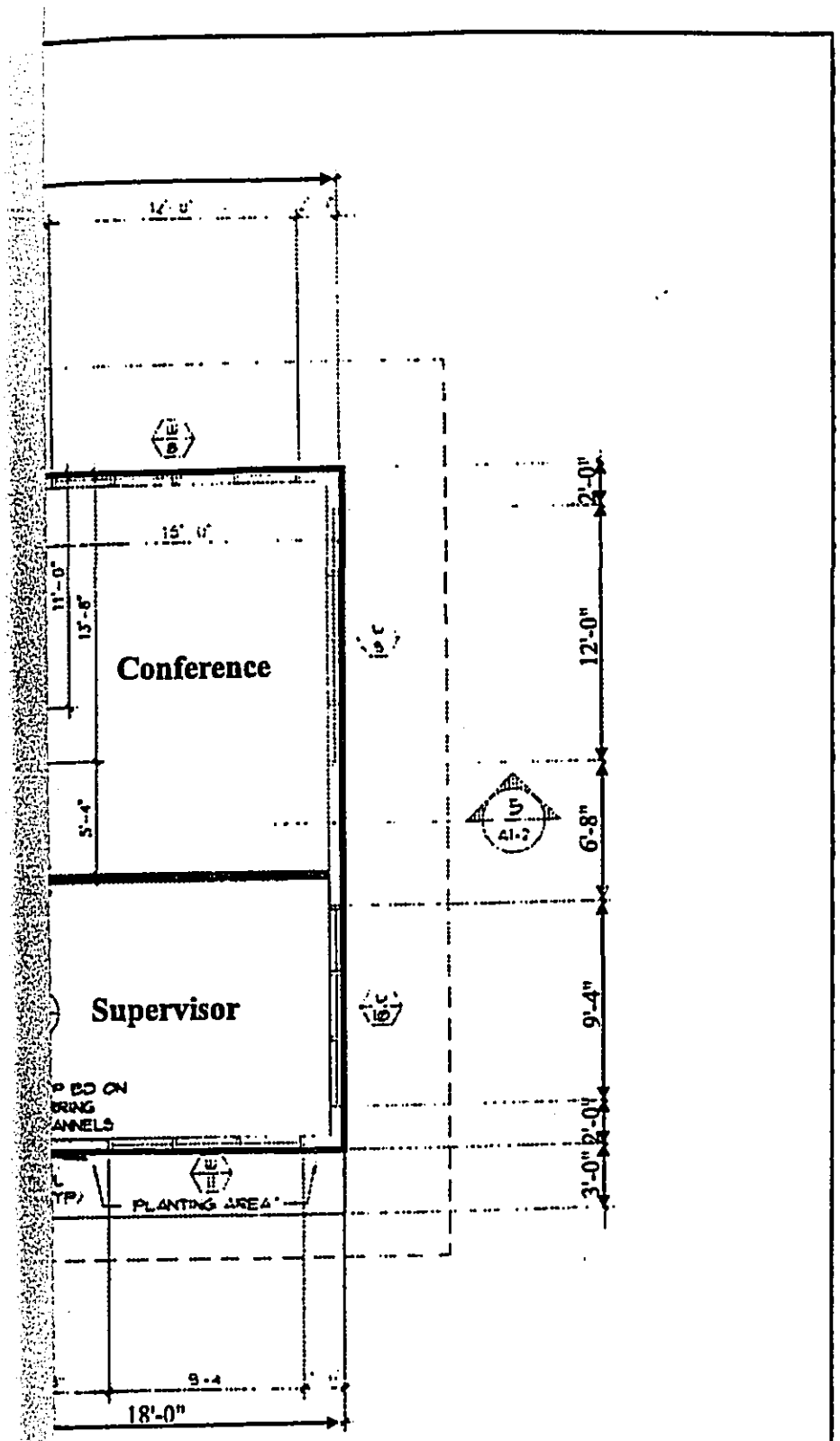


Source: Thomas T. Agawa & Associates

Figure 5

Keanae Baseyard Renovations
Office Building Floor Plan

Prepared for: State of Hawaii, Dept. of Accounting and General Services



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MINEKIYO & ARAKAWA, INC.

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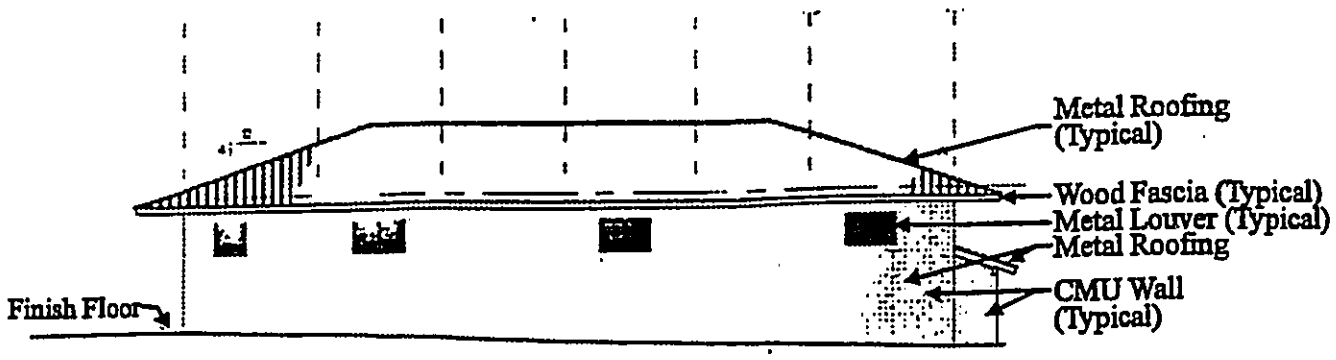
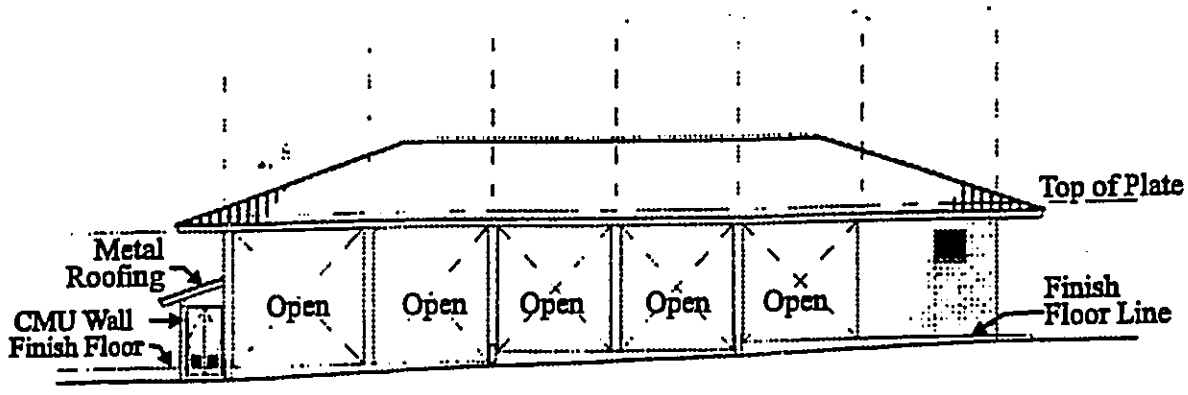
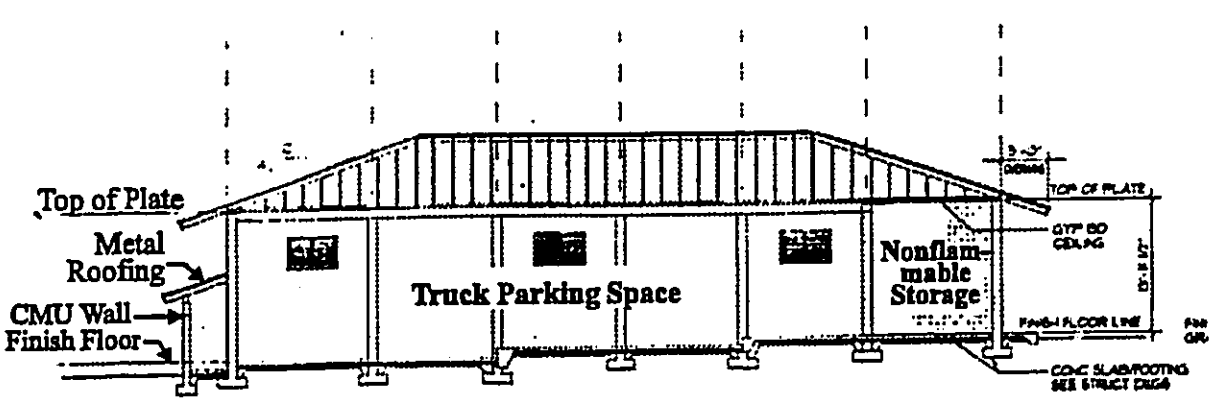


South Elevation



North Elevation



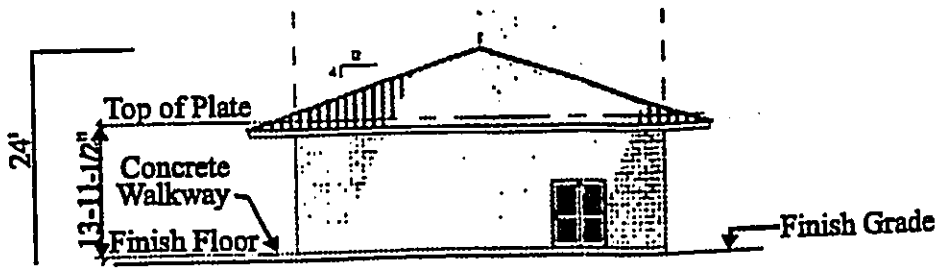
Building Section

Source: Thomas T. Agawa & Associates

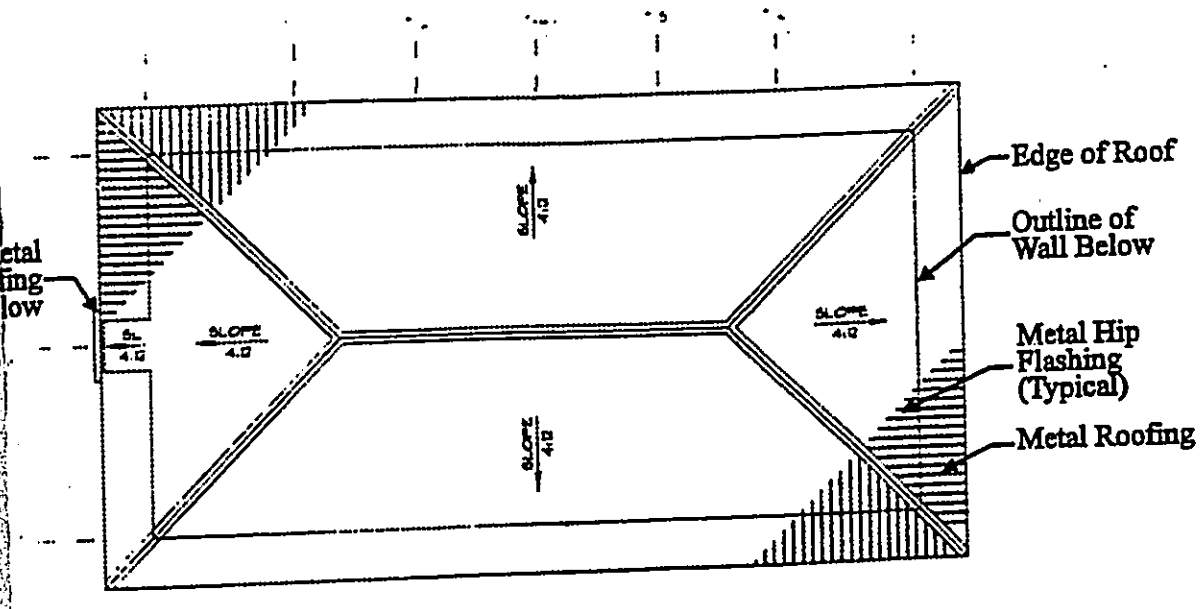
Figure 6

Keanae Baseyard Renovations
Truck/Storage Shed Exterior Elevations

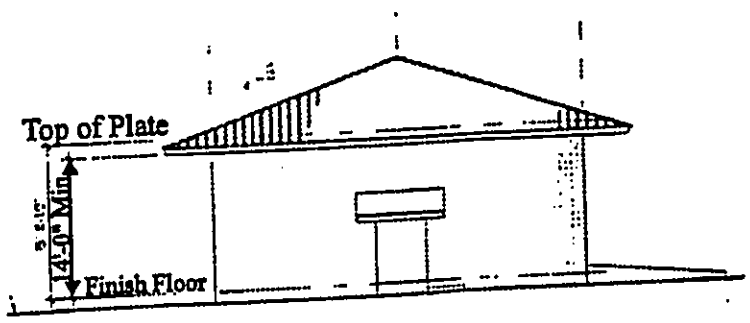
Prepared for: State of Hawaii, Dept. of Accounting and General Services



West Elevation



Building Roof Plan



East Elevation

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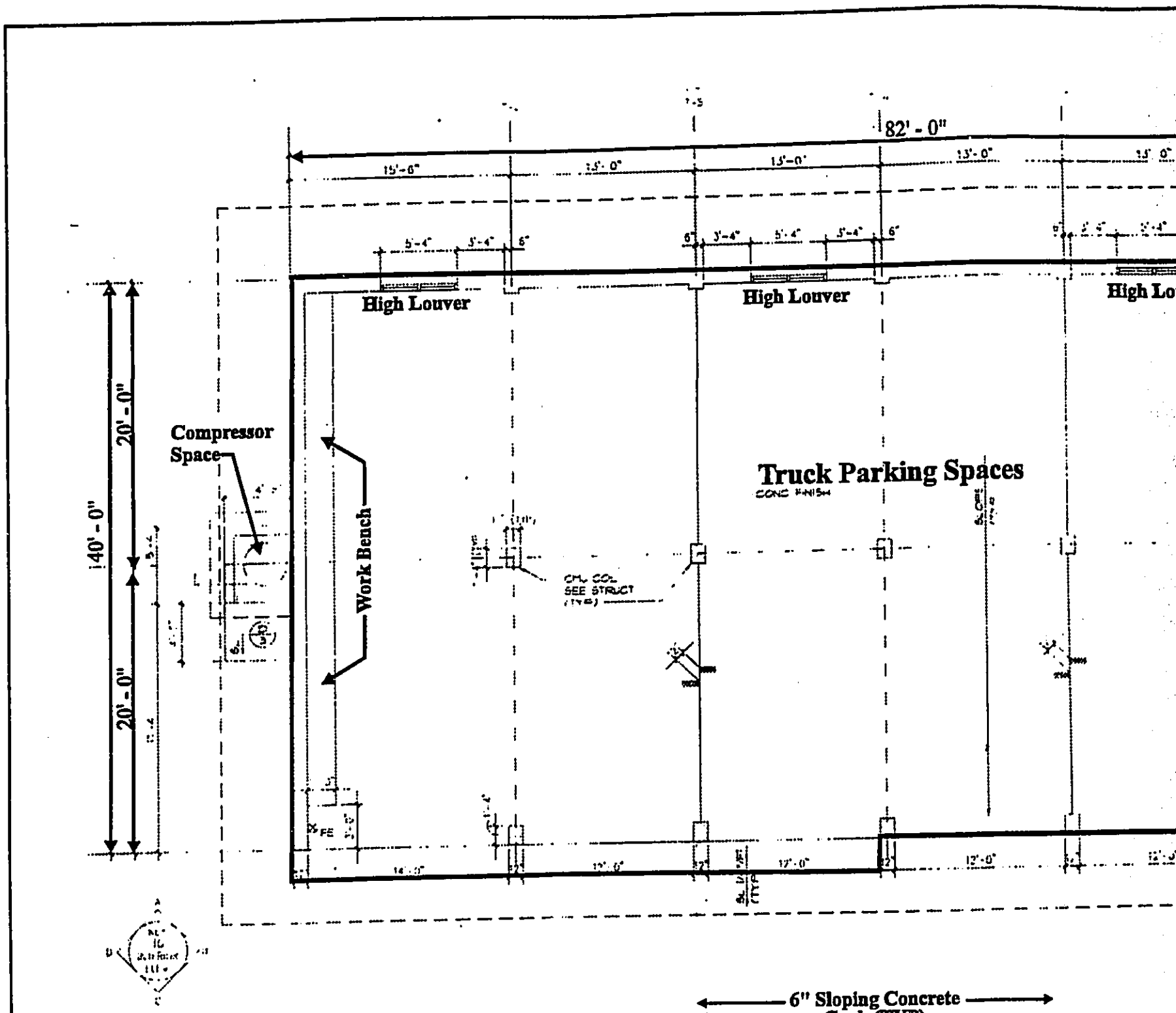


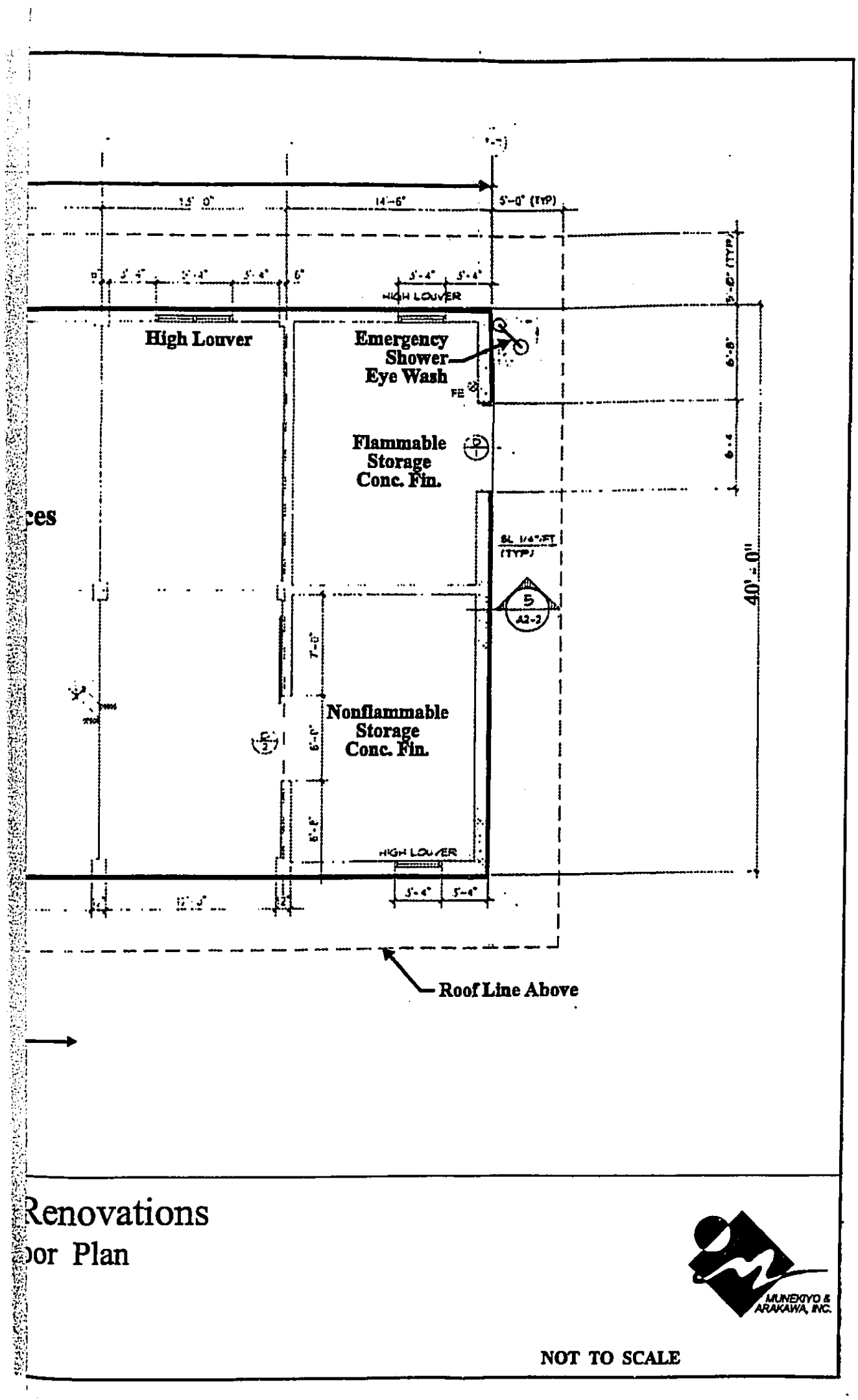
Source: Dept. of Accounting and General Services

Figure 7

Keanae Baseyard Renovations

Truck/Storage Floor Plan

Prepared for: State of Hawaii, Dept. of Accounting and General Services



Renovations

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MUNEKIYO & ARAKAWA, INC.

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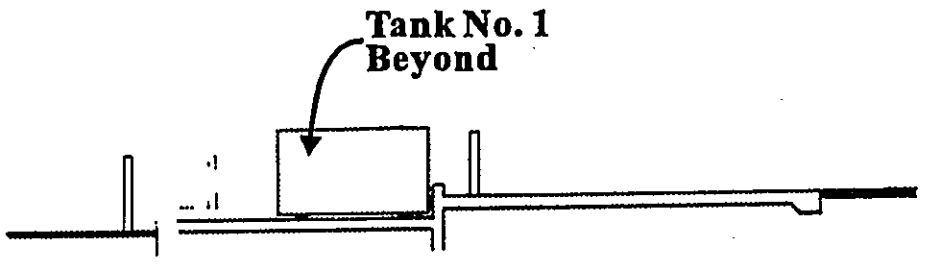
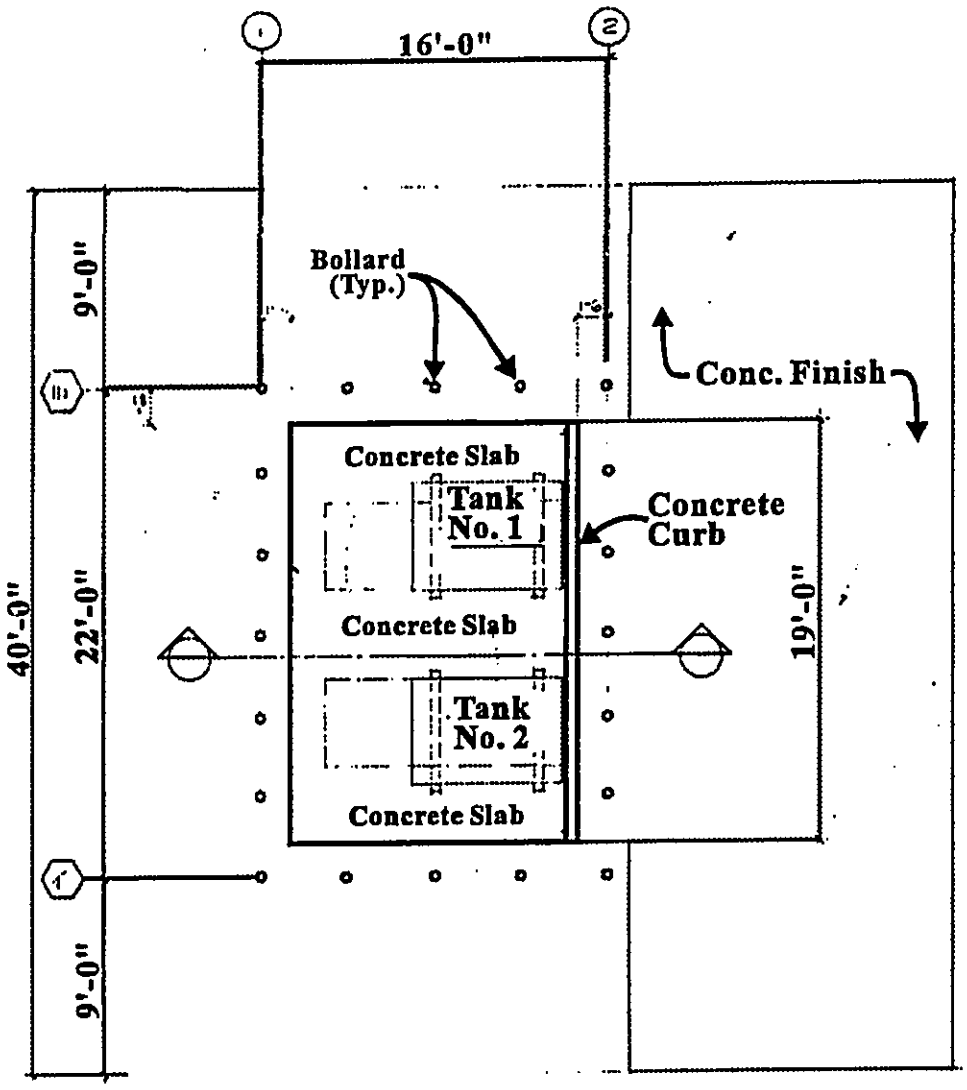


Cross Section



Source: Thomas T. Agawa & Associates

Figure 8 Keanae Baseyard Renovations
Fuel Tank and Dispenser Floor Plan

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Accounting and General Services

NOT TO SCALE

The proposed building improvements will be designed for handicapped accessibility. Other additional improvements onsite include asphalt paving for parking and driveway improvements.

C. CONSTRUCTION COST AND IMPLEMENTATION

Construction is anticipated to begin in the latter part of 1997, with a construction duration of approximately 10 to 12 months. Estimated project cost is approximately $1.3 million.

Chapter II

Description of the Existing Environment

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Surrounding Land Uses

The subject property is located off of Hana Highway in Keanae, overlooking the Keanae peninsula. The area surrounding the property is rural and agricultural in nature. The subject parcel is bordered by Hana Highway to the south and Keanae Homestead Road to the east. All lands mauka of Hana Highway consist of dense forest areas of the Koolau Forest Reserve as well as the Keanae Arboretum. Camp Keanae (YMCA) abuts the property's eastern boundary. To the north is the Keanae Peninsula, which is the location of Keanae's rural residential homes and *lo'i* (wetland taro patches).

2. Climate

The Keanae area is generally cool and equable the entire year. Average annual rainfall at the Keanae region is between 200 to 250 inches a year (Department of Geography, 1983).

Like most areas of the Islands, the prevailing wind throughout the year is the northeasterly tradewind. These are generally more persistent in summer than in winter. Between about October and April, there may be increased frequency of the southerly winds of Kona storms. In the absence of the trades and nearby storms, winds may become light and variable. Then the diurnal heating and cooling of the land gives rise to onshore sea breezes during the day and offshore land breezes at night (Department of Geography, 1983).

3. *Topography and Soil Characteristics*

The project site ranges in elevation from 150 to 160 feet above sea level. The majority of the project site consists of level to gently sloping lands. It is noted that the northern and eastern extent of the subject property drops steeply towards Hana Highway and Keanae Homestead Road.

Underlying the site and surrounding lands are soils belonging to the Hana-Makaalae-Kailua association. See Figure 9. This soil association consists of well-drained, moderately fine textured and fine textured soils on the intermediate uplands of East Maui. The soil specific to the subject property is Stony alluvial land (rSM). See Figure 10. Stony alluvial land consists of stones, boulders and soil deposited by streams along the bottom of gulches and alluvial fans. In most places, the slope is 3 to 15 percent.

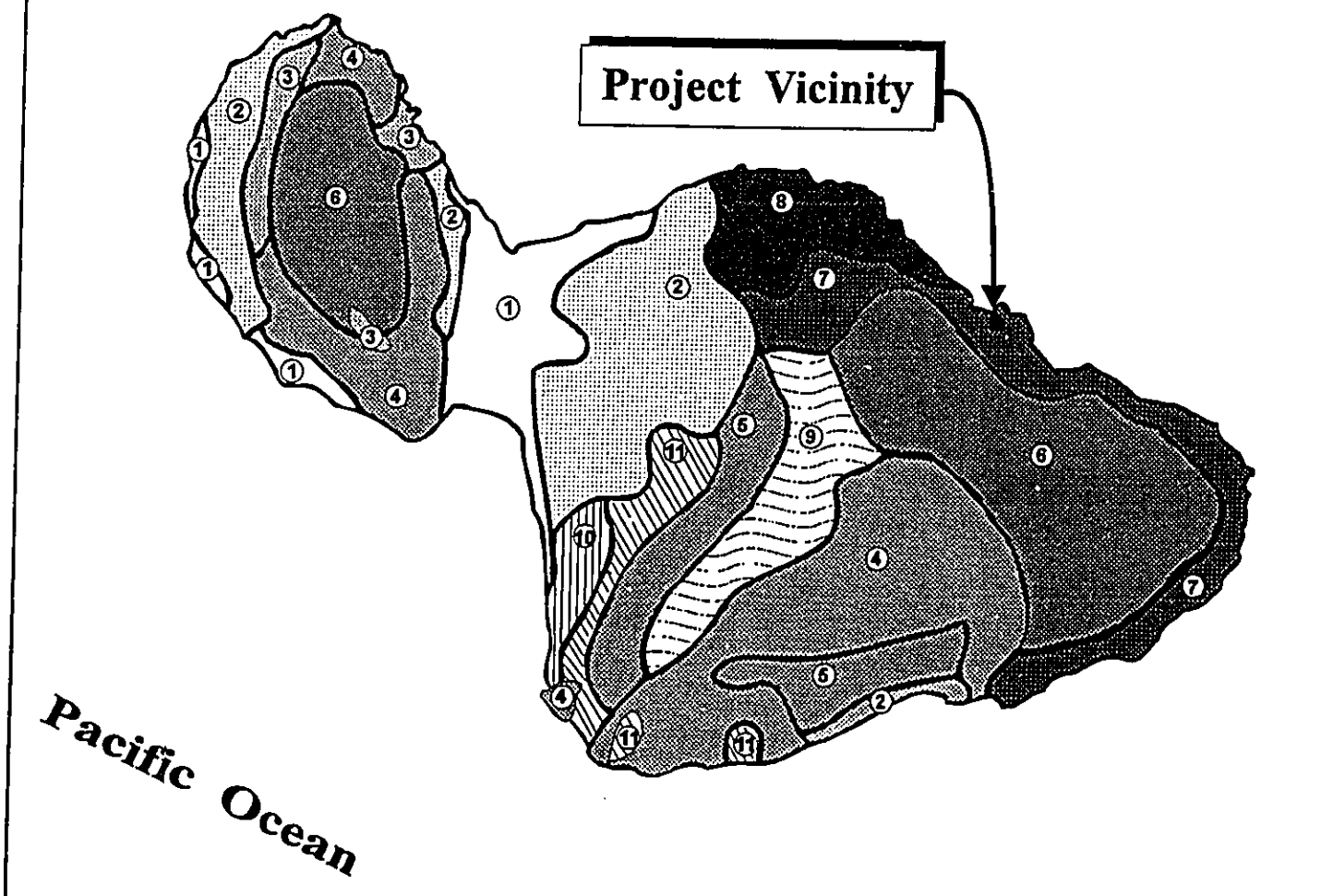
The land underlying the project site is designated "C" by the University of Hawaii Land Study Bureau. This classification system rates lands on a scale of "A" to "E", reflecting land productivity characteristics. Lands designated "A" are considered to be of highest productivity, with "E" lands ranked lowest.

Agricultural productivity is also measured by the State of Hawaii, Department of Agriculture's Agricultural Lands of Importance to the State of Hawaii (ALISH). The ALISH maps designate five (5) land classifications as follows:

1. PRIME AGRICULTURAL LAND - Land which has the soil quality, growing season, and moisture supply needed to produce sustained high crop yields economically when treated and managed according to modern farming methods.

LEGEND

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



Map Source: USDA Soil Conservation Service

Figure 9 Keanae Baseyard Renovations

Soil Association Map

Prepared for: State of Hawaii, Dept. of Accounting and General Services

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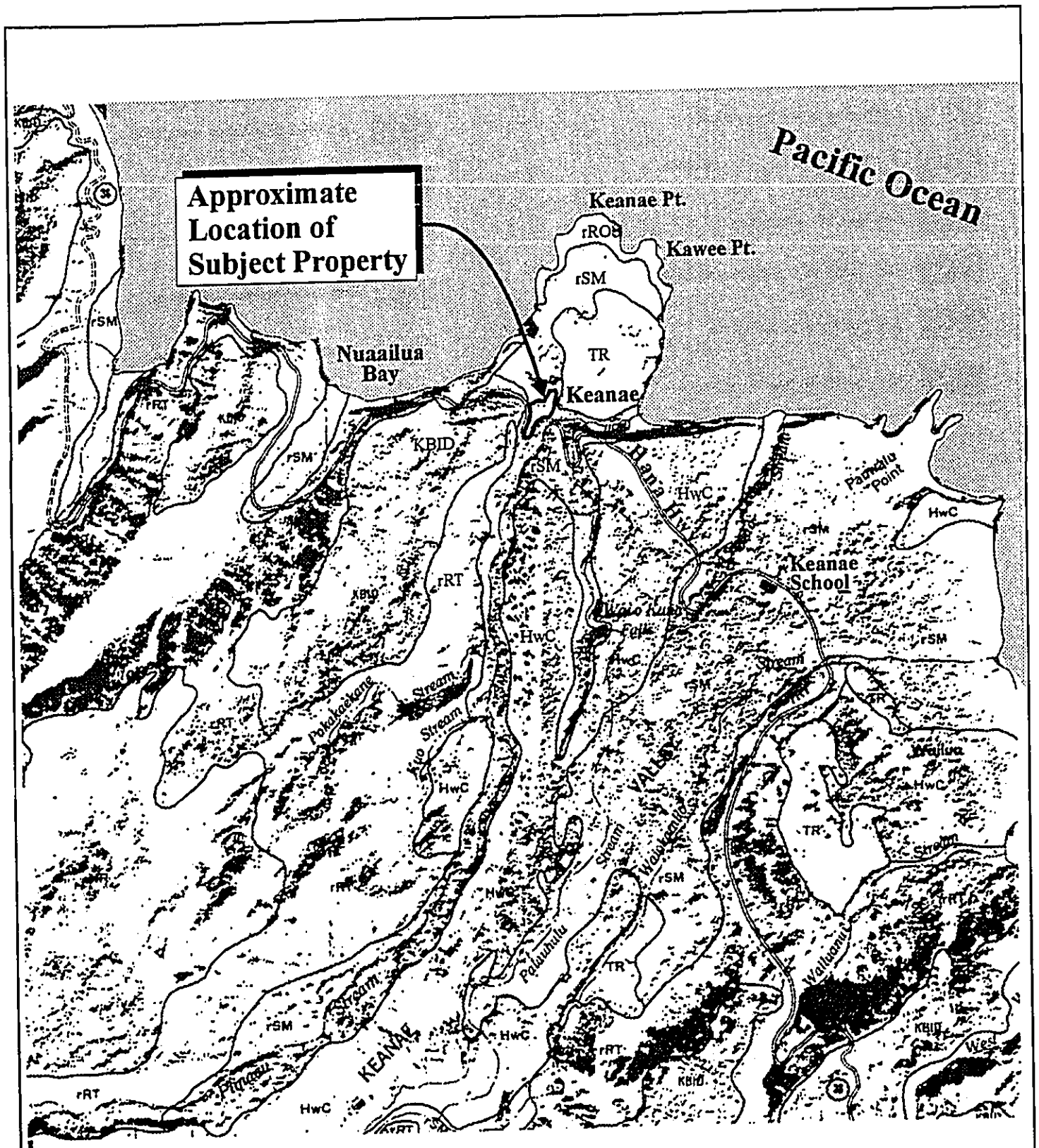


Figure 10 Keanae Baseyard Renovations

Soil Classification Map

MUNEKIYO & ARAKAWA, INC.

1000 0 2000 4000 Feet

Prepared for: State of Hawaii, Dept. of Accounting and General Services

2. UNIQUE AGRICULTURAL LAND - Land that has the special combination of soil quality, location, growing season, and moisture supply currently used to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods.

3. OTHER IMPORTANT AGRICULTURAL LAND - Land other than Prime or Unique Agriculture Land that is also of state-wide or local importance for agricultural use.

4. EXISTING URBAN DEVELOPMENT - Land which has been developed for urban type use.

5. U.S. GOVERNMENT - Land which is currently under jurisdiction of the U.S. Government.

According to the ALISH map, the subject property is not within an ALISH designated area.

4. ***Flood Hazard***

The proposed project is designated by the Flood Insurance Rate Map as Zone C, an area of minimal flooding. See Figure 11.

5. ***Flora and Fauna***

The vegetation within the Keanae baseyard limits consists primarily of lowlying grass and ornamental bushes around the existing structures. The project boundaries bordering Hana Highway and Keanae Homestead Road, however, are heavily vegetated with foliage typical of the Keanae region. These plants include various ferns, ti, ginger, groundcover, avocado, mango, banana, and large shade trees. There are no known, rare, endangered or threatened species of plants within the subject property.

The rural nature of Keanae finds a variety of animal life, such as mongoose, chickens, rats, dogs and cats. Avifauna observed in

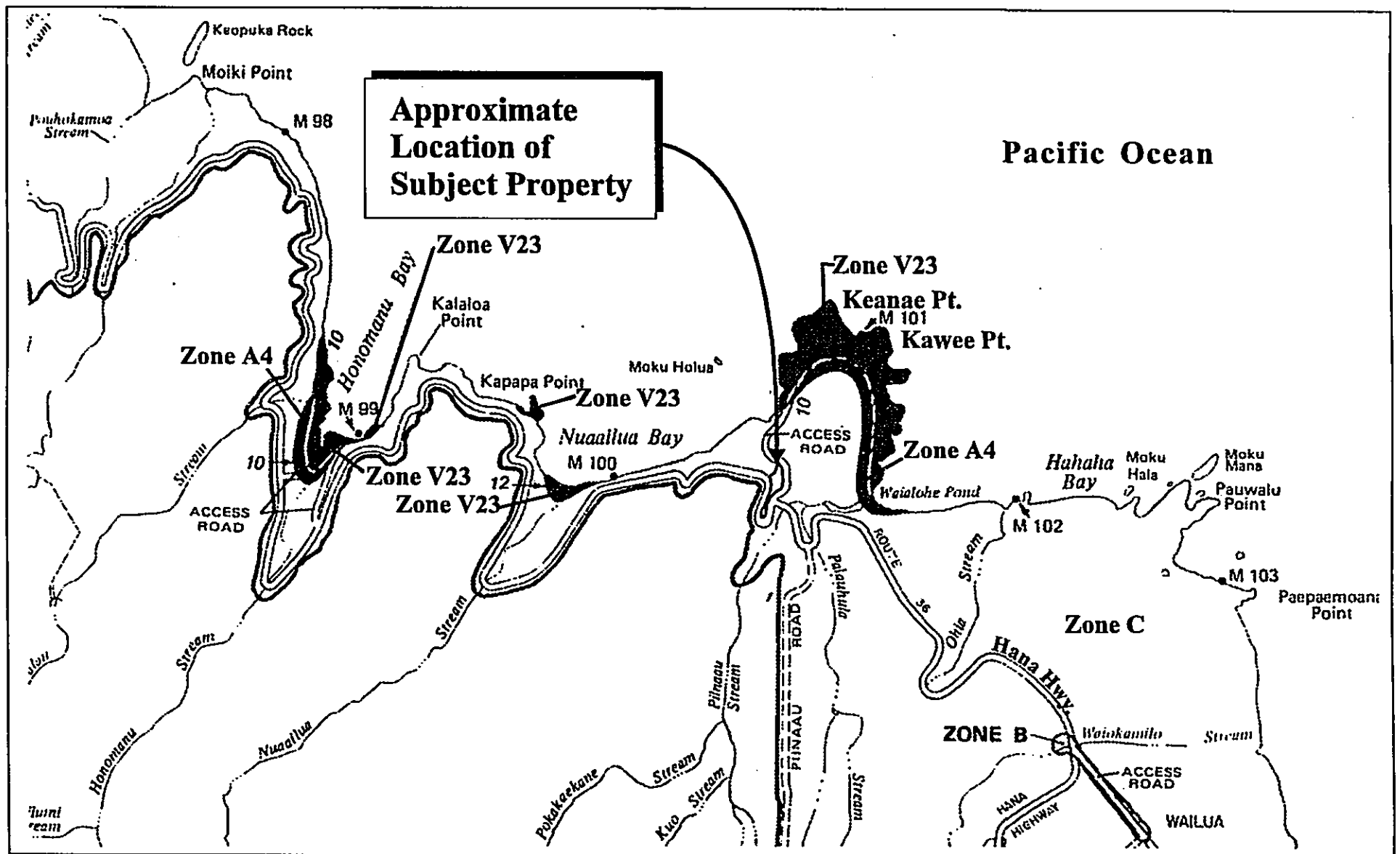


Figure 11

Keanae Baseyard Subdivision
Flood Insurance Rate Map

1000 0 2000 4000 Feet

HUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Accounting and General Services

the region include mynas, doves, sparrows and cardinals. In addition, the U.S. Fish and Wildlife Service notes that the endangered Dark-rumped petrel and Newell's shearwater may transit the area on their way to sea (U.S. Department of the Interior, February 28, 1997).

6. ***Air Quality and Noise Characteristics***

There are no point sources of airborne emissions in the immediate vicinity of the project site. The air quality of the Keanae region is considered good, with existing airborne pollutants attributed primarily to automobile exhaust from the region's roadways.

Surrounding noise levels in the Keanae region are characteristic of its agricultural and rural atmosphere and are considered relatively low. Background noise levels are attributed to natural (e.g., wind) conditions and traffic from Hana Highway.

7. ***Visual Resources***

The project site is situated above the Keanae peninsula and offers panoramic views of the Keanae coastline and Pacific Ocean to the north, east and west and Haleakala to the south.

8. ***Archaeological Resources***

The Department of Transportation, Highways Division currently uses the project site as a baseyard. Correspondence with the State Historic Preservation Division indicated that there are no known historic sites present, within or adjacent to the proposed project. The correspondence further adds that due to prior construction and excavation activities on the property, the proposed project will have "no effect" on significant historic sites. See Appendix A.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population

The population of Maui has exhibited relatively strong growth over the past decade with the 1990 population estimated at 100,504, a 41.8% increase over the 1980 population of 70,847. Growth in the County is expected to continue, with resident population projections to the years 2000 and 2010, estimated to be 124,562 and 145,872, respectively (Community Resources, Inc., 1994).

The estimated 1990 population of the Hana Community Plan region, which includes the Keanae region, is 1,895. A projection of the region's population shows an increase to 2,182 by the year 2000. By the year 2010, population is anticipated to increase to 2,392 (Community Resources, Inc., 1994).

2. Economy

Taro cultivation is considered the most vital component of Keanae's economy. The Keanae peninsula contains the most tightly clustered concentration of taro *lo'i* (wetland taro field) in the area, totalling approximately 185 *lo'i* presently in production (Group 70 International, Inc., May, 1995).

C. PUBLIC SERVICES

1. Police and Fire Protection

The County of Maui's Police Department is headquartered at its Wailuku Station. The Department's Hana substation, located at the Hana Highway/Uakea Road intersection, patrols the Hana District (from Kaumahina State Park near Kailua to Manawainui Bridge near Kaupo), which includes the Keanae area (telephone

conversation with Police Department employee Kerri Yagi, October 1996).

Fire prevention, suppression and protection for Keanae is offered by the County's Department of Fire Control's Hana Station. The Hana Station, which is responsible for servicing the Hana District (from Keanae to Kaupo), is located at the Hana Highway/Uakea Road intersection (telephone conversation with Fire Department's Captain Paul Malo, October 1996).

2. ***Health Care***

The nearest medical facility serving the Keanae area is Hana Medical Center, located at the Hana Highway/Uakea Road intersection in Hana. Hana Medical Center provides family practice services and a 24-hour emergency service (telephone conversation with Hana Medical Center employee Rose Mary Howell, October 1996). In the event of serious medical cases, patients are transported to Maui Memorial Hospital. Acute, general and emergency care services are provided by this 185-bed facility located in Wailuku.

3. ***Solid Waste***

All solid wastes generated in the Hana District, which includes Keanae, are transported to the Hana Landfill. For the year 1995, solid waste arrived at the Hana Landfill at an estimated rate of approximately four (4) tons per day (telephone conversation with Department of Public Works and Waste Management, Solid Waste Division employee Elaine Baker, October 1996).

4. Schools

The State of Hawaii, Department of Education, operates two (2) public schools in the Hana region. They are (with September 1996 enrollment in parenthesis): Hana High and Elementary School (457) and Keanae School (9) (telephone conversation with Department of Education employee Trudy Yip-Onaga, October 1996). Keanae School is located approximately 1 mile southeast of the Keanae Baseyard site.

5. Recreational Facilities

The Keanae region is served by several recreational facilities offering diverse opportunities for the region's residents. These facilities include the Keanae Arboretum, Kaumahina State Park and the YMCA complex (Camp Keanae).

D. INFRASTRUCTURE

1. Roadways

The main transportation arterial serving the Keanae region, which also provides access to the project site, is Hana Highway, a two-way State highway that borders the subject parcel's westerly and southerly boundary. Hana Highway meanders along Maui's north shore, crossing numerous streambeds.

Local access to the Keanae Peninsula is provided by Keanae Homestead Road, a 30-foot wide unstriped County roadway.

2. Water

Tho primary source of water for the Keanae area is the Keanae Aquifer. Water from the aquifer is directed to Keanae Well No. 1, which has a pump capacity of 96,000 gallons per day. The well is

located near the intersection of Hana Highway and Wailua Road and is supplemented by two (2) booster pumps which pump water through a 6-inch line to a 50,000 gallon storage tank located approximately one-half mile south of Keanae School. This storage tank feeds the Keanae area water transmission system for distribution and consumption (telephone conversation with Department of Water Supply employee Ellen Kraftsow, November 1996).

The project site is serviced by a 5/8-inch County water meter. Transmission lines in the vicinity of the project site include a 6-inch transmission line located along the Hana Highway/Keanae Homestead Road intersection.

3. ***Wastewater***

Keanae is not served by a County sewer system. Since 1988, use of cesspools have been disallowed by the State Department of Health for new developments. Septic tanks used in conjunction with absorption trenches or seepage pits are proposed for the subject property for wastewater disposal.

4. ***Drainage***

Storm runoff presently sheetflows across the subject property in a northerly direction. It is noted that the northern and eastern boundaries of the subject property are heavily vegetated and drops steeply towards Keanae Homestead Road.

Drainage improvements along Hana Highway include an existing drain inlet located mauka of Hana Highway and directly across the street from Keanae Baseyard's driveway entry.

Based on an analysis of a one-hour, 10-year storm, stormwater runoff currently generated on site is approximately 3.23 cubic feet per second. See Appendix B.

5. ***Electrical and Telephone Services***

Electrical and telephone services are provided to the site by Maui Electric Company, Ltd. and GTE Hawaiian Telephone Company, Inc., respectively.

Chapter III

Potential Impacts and Mitigation Measures

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Flora and Fauna

There are no known significant habitats or rare, endangered or threatened species of flora and fauna located on the project site. The removal of the existing flora and displacement of fauna from the site is not considered a significant adverse impact upon these environmental features.

2. Air Quality and Noise Characteristics

Air quality impacts attributed to the project will include dust generated by short-term construction-related activities. Site work, such as clearing, grubbing and grading, for example, will generate air-borne particulates. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions.

Once the project is completed, project-related emissions are not expected to adversely impact local and regional ambient air quality conditions.

Ambient noise conditions will also be temporarily impacted by construction activities. Heavy construction equipment, such as bulldozers, front-end loaders, and materials-carrying trucks and trailers, would be the dominant source of noise during the construction period. All construction activities are anticipated to be limited to daylight working hours.

Long-term noise impacts consisting primarily of vehicular traffic to and from the project site represents a small percentage of total

traffic on adjacent roadways. Noise parameters in the long-term should not be adversely affected.

3. ***Visual Resources***

The renovated Keanae baseyard will be landscaped to create a site visually integrated with the surrounding neighborhood.

In the Keanae region, important viewing points are found at Kaumahina State Park, the YMCA campsite, the view of Keanae peninsula from above Waialohe Pond, the Wailuanui Wayside Lookout and the Wailuanui Saint Gabriel's Lookout before Waikani Falls. For visitors and the general public, viewing points function as scenic lookouts (Group 70 International, Inc., May 1995).

Although it is not designated as a public scenic viewpoint, the project site offers excellent views of the Keanae peninsula and ocean.

4. ***Archaeological Resources***

Correspondence with the State Historic Preservation Division (SHPD) indicates that there are no known historic sites within the project site and that the proposed project will have "no effect" on historic sites. Refer to Appendix A. Should any cultural remains be identified during the construction period, however, work will be stopped in the immediate vicinity and SHPD will be contacted to establish an appropriate mitigation strategy.

5. ***Use of Chemicals and Fertilizers***

Use of herbicides on the project site will generally be limited to the initial plant establishment period. Pesticides are anticipated to be

used only as a treatment and not as a preventive measure. As a treatment, application usage will be minimal. In addition, plant selection for the project will be based on hardiness, pest resistance as well as aesthetic concerns.

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

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

B. SOCIO-ECONOMIC ENVIRONMENT AND PUBLIC SERVICES

1. Local Economy

On a short-term basis, the project will support construction and construction-related employment. Also, the rehabilitated Keanae Baseyard will provide the necessary facilities for the State Highway Division to efficiently and effectively maintain Hana Highway and related State Highway facilities from Haiku to Hana.

2. Police, Fire and Medical Services

The proposed project is not anticipated to affect service capabilities of police, fire and emergency medical operations. The project will not extend existing service area limits for emergency services.

3. Solid Waste

A solid waste management plan will be developed in coordination with the Solid Waste Division of the County Department of Public

Works and Waste Management for the disposal of clearing and grubbing material from the site during construction.

Once completed, solid waste generated by the baseyard will be collected by a private refuse collection company for disposal at the County's Hana Landfill.

C. INFRASTRUCTURE

1. Roadways

During construction, all construction employee parking shall be accommodated on the project site.

The Keanae Baseyard currently consists of 4 to 6 State Highways Division employees, which will not change upon completion of renovations to the baseyard. Accordingly, the proposed project is not anticipated to have an adverse impact on local traffic conditions.

2. Water

Operations and staffing levels of the Keanae Baseyard are not anticipated to differ or increase with the replacement facilities. Thus, although total floor area of the new buildings will increase over existing conditions, the total water demand at the baseyard will not increase significantly over the current 225 to 250 gallon per day usage.

3. Wastewater

Wastewater generated by this project will be handled by a Department of Health approved individual wastewater system (septic system).

4. ***Drainage***

Currently, runoff generated onsite sheetflows in a northerly direction at a rate of 3.23 cfs (based on a one-hour, 10-year storm). Upon completion, the proposed project is estimated to generate an additional 3.59 cfs of onsite runoff. Refer to Appendix B.

The proposed drainage scheme will retain basic drainage patterns, and as with existing conditions, the majority of surface runoff will flow in a northerly direction.

Situated across the project site within Hana Highway, the existing drain inlet will be reconstructed and a new, larger drainline will be connected to the proposed onsite underground drainage system. The runoff generated onsite will be collected by four (4) drain inlets and directed to the onsite drainage system. The incremental increase in onsite runoff (3.59 cfs) will be accommodated by approximately 200 linear feet of perforated pipe which will be a component of the onsite drainage system. The onsite runoff, as well as the offsite runoff collected by the reconstructed Hana Highway drain inlet, will be conveyed by a new underground drainage system along the Keanae Homestead Road right-of-way where it will be discharged via a new headwall located on a State-owned vacant parcel located makai of the Keanae Homestead Road. Refer to Appendix B.

All drainage system improvements will be designed in accordance with applicable regulatory standards. A detailed drainage report, along with the construction plans for the project, will be submitted for review and approval by applicable governmental agencies.

The proposed drainage system is anticipated to improve the overall drainage condition of the area. With the installation of the proposed drainage system, the development of the proposed project is not anticipated to have an adverse effect to adjacent and downstream properties.

Chapter IV

Relationships to Governmental Plans, Policies and Controls

IV. RELATIONSHIPS TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

A. STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission (LUC), establishes the four (4) major land use districts in which all lands in the State are placed. These districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The subject parcel is within the "Agricultural" District. See Figure 12.

Pursuant to Section 15-15-95, Administrative Rules of the Hawaii Land Use Commission Rules, the LUC Rules provide that "unusual and reasonable" uses may be permitted within the "Agricultural" district. The proposed project is consistent with the guidelines for determining an "unusual and reasonable" use as follows:

Guideline: The use shall not be contrary to the objectives sought to be accomplished by Chapters 205 and 205A HRS, and the rules of the Commission.

Response: The general intent of the State Land Use law is "to preserve, protect, and encourage the development of land in the State for those uses to which they are best suited in the interest of the public health and welfare of the State of Hawaii". The proposed project involves the renovation of the existing State Highways Division Keanae Baseyard. The Keanae Baseyard provides road repairs and maintenance to Hana Highway, and related State Highway facilities between Kaupakalua Road in Haiku to Hana Town. In providing adequate baseyard facilities that will improve the State Highway's day-to-day operations, the proposed action is not deemed contrary to the objectives of Chapters 205 and 205A, HRS.

Guideline: The desired use would not adversely affect surrounding property.

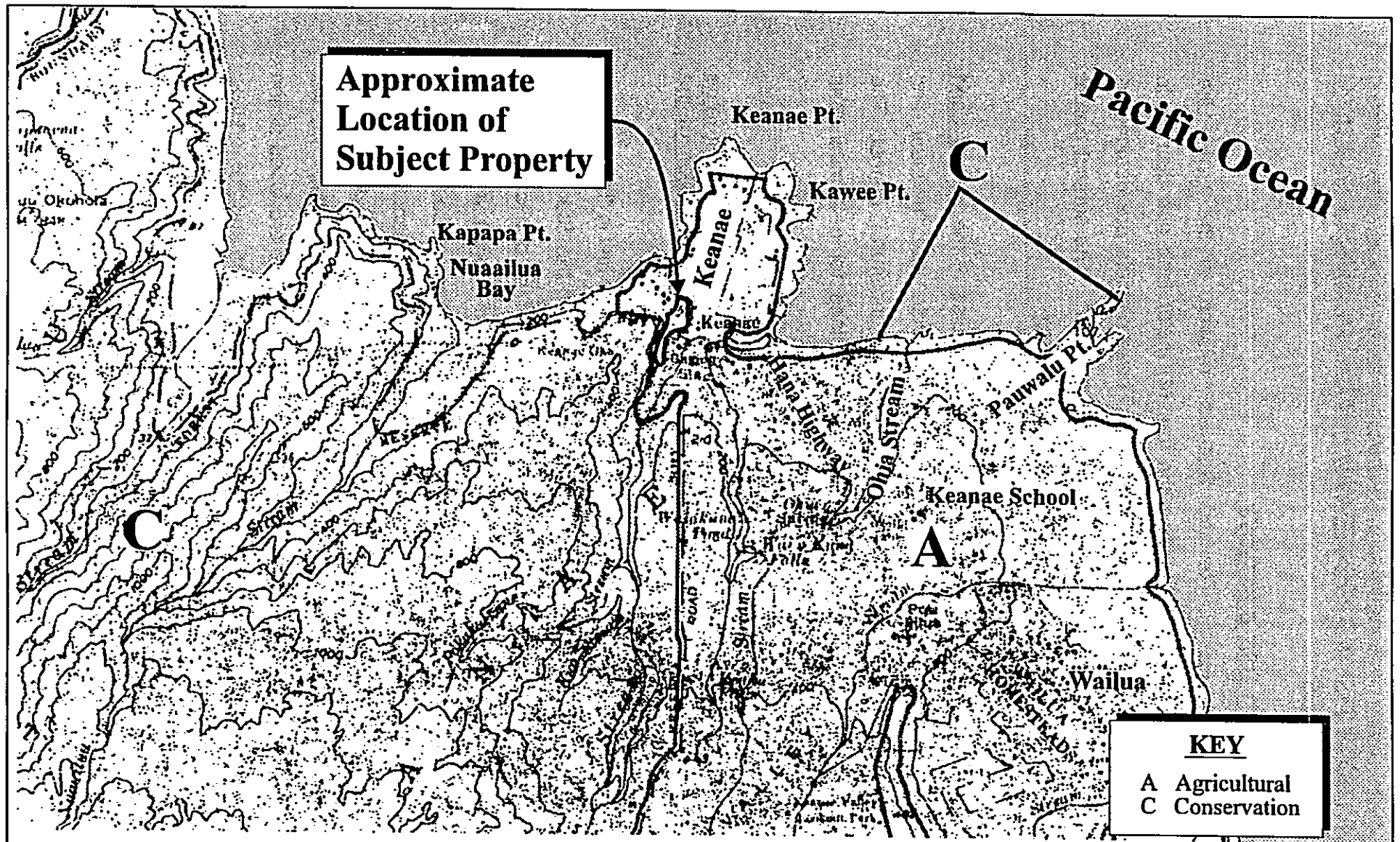


Figure 12

Keanae Baseyard Renovations

State Land Use Classifications

Prepared for: State of Hawaii, Dept. of Accounting and General Services

MUNEKIYO & ARAKAWA, INC.

Response: The proposed project site is the current location of the State Highway's Keanae Baseyard. Adverse impacts to surrounding properties are not anticipated as a result of the proposed action.

Guideline: The use would not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, and police and fire protection.

Response: Wastewater generated will be collected by a Department of Health-approved septic tank system. Additional roadway requirements are not anticipated since the proposed project will not intensify existing traffic conditions along Hana Highway and surrounding roadways. The proposed project will not significantly add to the current water demands of the Keanae Baseyard. Furthermore, the proposed project will be engineered to mitigate adverse drainage-related impacts to adjacent and downstream properties.

In general, the proposed action is not anticipated to significantly affect infrastructure and public service systems.

Guideline: Unusual conditions, trends, and needs have arisen since the district boundaries and rules were established.

Response: The subject property has been utilized as a County baseyard since 1954. In 1979, however, the State Highways Division took control of the property specifically to serve as a baseyard to provide roadway repair and maintenance to Hana Highway, between Kaupakalua Road in Haiku and Hana Town. The proposed project seeks to continue the existing use of the property as a baseyard while providing the State Highways Division with adequate baseyard facilities.

Guideline: The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

Response: The subject property has been utilized as a baseyard by the County of Maui and, now, the State Highways Division since 1954. The Baseyard is situated where the State Highways Division can efficiently respond to emergency roadway repairs between Kaupakalua Road in Haiku to Hana Town. It is also noted that the majority of the lands in Keanae currently being cultivated are located to the north of the property (within the Keanae peninsula) where the primary crop is wetland taro.

B. *MAUI COUNTY GENERAL PLAN*

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter, "The purpose of the General Plan is to recognize and state the major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development."

The proposed action is in keeping with the following General Plan policy:

Policy:

Streamline maintenance methods for public highways to encourage a prompt response to road repair needs.

C. *HANA COMMUNITY PLAN*

The subject property is located in the Hana Community Plan region which is one (1) of nine (9) Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which

guide the sequencing, patterns and characteristics of future developments in the region.

The subject property is designated "Agricultural" by the current Hana Community Plan Land Use Map. See Figure 13. The proposed project is compatible visually, in scale, and in intensity with surrounding properties and roadways. In addition, the proposed action will not adversely affect the agricultural activities of the area. The renovation of Keanae Baseyard ensures that the Department of Transportation will continue to provide essential road maintenance and repairs to State highway facilities (between the regions of Hana and Haiku).

D. *COUNTY ZONING*

The subject property is located within the State Agricultural District. The underlying zoning of the property is County Interim. Permitted uses within the Interim District include "Publicly Owned Buildings". The Keanae Baseyard improvements are considered "publicly owned buildings". Accordingly, no additional County land use approvals are required for the proposed action. See Appendix C.

E. *COUNTY OF MAUI SPECIAL MANAGEMENT AREA*

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

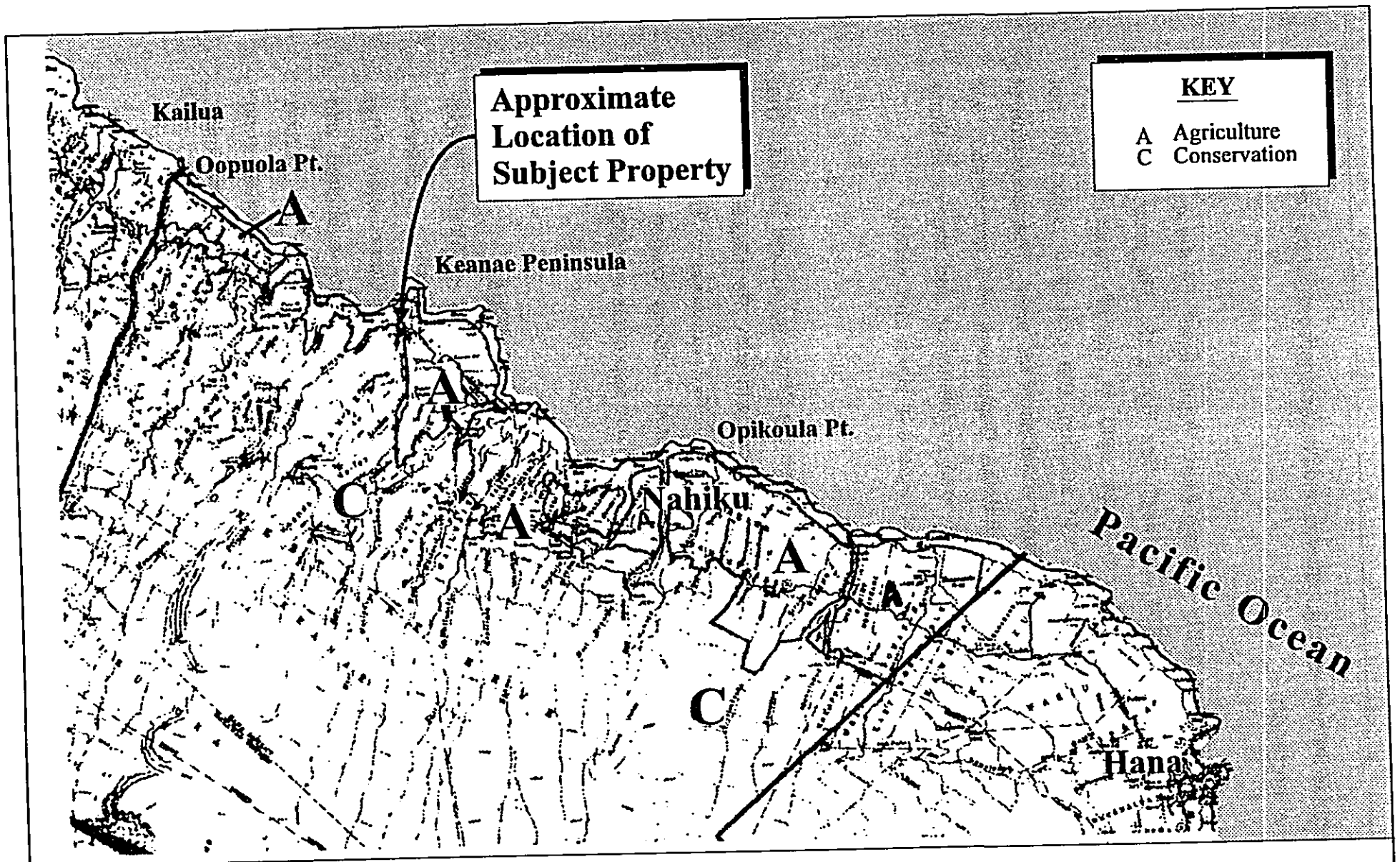


Figure 13

Keanae Baseyard Renovations
Community Plan Land Use Designations

0 1 2 4 Miles

MUNEKIYO & ARAKAWA, INC.

Prepared for: State of Hawaii, Dept. of Accounting and General Services

1. ***Recreational Resources***

Objective: Provide coastal recreational resources accessible to the public.

Policies:

a. Improve coordination and funding of coastal recreational planning and management; and

b. Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:

(1) Protecting coastal resources uniquely suited for recreation activities that cannot be provided in other areas;

(2) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(3) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(4) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(5) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(6) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;

(7) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(8) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions, and crediting such dedication against the requirements of section 46-6.

Response: The proposed project is not anticipated to affect existing coastal recreational resources. The project is designed to provide adequate facilities for the daily operations of the Keanae Baseyard. Accordingly, the project itself is not a direct generator of new demand for regional recreational resources.

2. ***Historical/Cultural Resources***

Objective: Protect, preserve and where desirable, restore those natural and man-made historic and prehistoric resources in the coastal zone management areas that are significant in Hawaiian and American history and culture.

Policies:

a. Identify and analyze significant archaeological resources;

b. Maximize information retention through preservation of remains and artifacts or salvage operations; and

c. Support State goals for protection, restoration, interpretation and display of historic resources.

Response: Correspondence with the State Historic Preservation Division indicates that the proposed project will have no effect on significant historic sites are present on the subject property.

Should archaeological remains be encountered during construction, however, work will stop in the area of the find and SHPD will be contacted to establish an appropriate mitigation strategy.

3. ***Scenic and Open Space Resources***

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

Policies:

a. Identify valued scenic resources in the coastal zone *management area*;

b. Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural land forms and existing public views to and along the shoreline;

c. Preserve, maintain and, where desirable, improve and restore shoreline open space and scenic resources; and

d. Encourage those developments which are not coastal dependent to locate in inland areas.

Response: The proposed area will be developed and landscaped to ensure visual compatibility with the surrounding land uses. The redevelopment of the Keanae Baseyard is not contrary to the objectives and policies for scenic and open space resources.

4. ***Coastal Ecosystems***

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

Policies:

a. Improve the technical basis for natural resource management;

b. Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

c. Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

d. Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Response: Improvements to the subject property are not expected to adversely impact coastal ecosystems. The proposed drainage system improvements are anticipated to improve the overall drainage condition of the area. Drainage improvements shall be designed in accordance with applicable regulatory standards to ensure that there are no adverse effects to adjacent or downstream properties. Applicable erosion control measures will also be implemented before, during and after construction.

5. ***Economic Uses***

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

Policies:

a. Concentrate coastal dependent development in appropriate areas;

b. Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy-generating facilities, are located, designed, and constructed to minimize adverse social, visual and environmental impacts in the coastal zone management area; and

c. Direct the location and expansion of coastal dependent developments to areas presently designated and used for

such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(1) Use of presently designated locations is not feasible,

(2) Adverse environmental effects are minimized; and

(3) The development is important to the State's economy.

Response: The proposed project is designed to accommodate the daily operational needs of the Keanae Baseyard and will support the DOT's ability to maintain Hana Highway in an efficient manner.

6. ***Coastal Hazards***

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

Policies:

a. Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

b. Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

c. Ensure that developments comply with requirements of the Federal Flood Insurance Program;

d. Prevent coastal flooding from inland projects; and

e. Develop a coastal point and nonpoint source pollution control program.

Response: The project site is located within Zone C, which is an area of minimal flooding. Drainage improvements will be implemented in connection with the proposed action to ensure that

no significant adverse drainage impacts to adjacent and downstream properties are generated.

7. ***Managing Development***

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

Policies:

a. Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

b. Facilitate timely processing of application for development permits and resolve overlapping of conflicting permit requirements; and

c. Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Response: In compliance with the Special Management Area Rules and Regulations of the County of Maui and rules of the Maui Planning Commission, required documentation will be filed with the County Planning Department and will undergo public hearing and decision by the Planning Commission.

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

8. ***Public Participation***

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

Policies:

a. Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

b. Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and

c. Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Response: The proposed project involves the redevelopment of the Keanae Baseyard. Opportunity for public awareness, education and participation pertaining to significant resource attributes of the coastal zone is being provided through the Maui Planning Commission's SMA procedures.

9. ***Beach Protection***

Objective: Protect beaches for public use and recreation.

Policies:

a. Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

b. Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

c. Minimize the construction of public erosion-protection structures seaward of the shoreline.

Response: The proposed project is located approximately 700 feet from the shoreline and is not anticipated to impact shoreline activities.

Chapter V

Summary of Unavoidable Adverse Environmental Effects; Alternatives to the Proposed Action; and the Irreversible and Irretrievable Commitment of Resources

V. SUMMARY OF UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS; ALTERNATIVES TO THE PROPOSED ACTION; AND THE IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

A. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

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

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

B. ALTERNATIVES TO THE PROPOSED ACTION

No other development alternatives were considered. The existing baseyard structures are in deteriorating condition and are not suitable to the daily operational needs of the baseyard. Thus, the proposed project is considered the most viable in terms of improving the daily operations of the Keanae Baseyard.

C. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The redevelopment of the Keanae Baseyard involves the commitment of State funds and lands. The subject parcel has been utilized for highway maintenance baseyard purposes since 1954. The proposed improvements will provide upgraded facilities to improve the baseyard's daily operations. In this context, there are no other anticipated irreversible and irretrievable commitment of resources associated with the proposed action.

Chapter VI

Findings and Conclusions

VI. FINDINGS AND CONCLUSIONS

Every phase of the proposed action have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Administrative Rules. Based on the analysis, it has been determined that the proposed action will not result in any significant impacts. Discussion of project conformance to the criteria is noted as follows:

1. ***No irrevocable commitment to the loss or destruction of any natural or cultural resource would occur as a result of the proposed project***

   The proposed action will not result in any adverse environmental impacts. There are no known, rare, endangered or threatened species of flora, fauna or avifauna located on the subject property.

   Additionally, correspondence with State Historic Preservation Division indicated that the subject property contains no known historic sites and that the proposed project will have "no effect" on historic sites.

2. ***The proposed action would not curtail the range of beneficial uses of the environment***

   The proposed project site was utilized as a baseyard first by the County of Maui and, most recently, by the State Highways Division. The proposed renovations to Keanae Baseyard will not affect or limit uses of the environment.

3. ***The proposed action does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes***

   The State Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes (HRS) and were reviewed in connection

with the proposed project. The proposed action is in consonance with the State's long-term environmental policies and goals of Chapter 344, HRS.

4. ***The economic or social welfare of the community or State would not be substantially affected***

The proposed project is intended to continue the use of the property as the baseyard for the State Highways Division while providing adequate facilities to improve the day-to-day operations of the baseyard.

The economic and social welfare of the community will be enhanced by improved response and operational capabilities of the Highways Division.

5. ***The proposed action does not affect public health***

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

6. ***No substantial secondary impacts, such as population changes or effects on public facilities, are anticipated***

The renovation of the Keanae Baseyard will not affect the Island's population base or place new demands on the Island's public facilities.

7. ***No substantial degradation of environmental quality is anticipated***

During construction, appropriate environmental mitigation measures will be used to ensure that adverse environmental effects are minimized. Such effects are anticipated to be limited to temporary construction-related effects. Thus, no substantial degradation of environmental quality resulting from the proposed action is anticipated.

8. ***The proposed action does not involve a commitment to larger actions, nor would cumulative impacts result in considerable effects on the environment***

The proposed project involves the renovation of the existing Keanae Baseyard and is not part of a larger action and will not create any significant long-term impacts.

9. ***No rare, threatened or endangered species or their habitats would be adversely affected by the proposed action***

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

10. ***Air quality, water quality or ambient noise levels would not be detrimentally affected by the proposed project***

Construction activities for the proposed project will result in short-term air quality and noise impacts. Appropriate dust control measures (e.g., water application to freshly graded areas, temporary grassing) will be implemented by the contractor to ensure that fugitive dust generated in connection with construction is minimized.

In the long term, the project is not anticipated to have a significant impact on air quality or noise parameters. Additionally, water quality in the immediate area is not anticipated to be adversely affected by the proposed project.

11. ***The proposed project would not affect environmentally sensitive areas, such as flood plains, tsunami zone, beach, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters***

The subject property is not located within and would not affect environmentally sensitive areas. The property is not subject to flooding or

tsunami inundation and the underlying soils are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the subject property.

12. ***The proposed project does not substantially affect scenic vistas and viewplanes identified in County or State plans or studies.***

The project will not adversely affect scenic vistas and viewplanes. The project site will be appropriately landscaped to visually blend into the surrounding environment.

13. ***Does the proposed project require substantial energy consumption***

The proposed action involves the renovation of the existing Keanae Baseyard and, therefore, will not require substantial energy consumption activities.

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

Chapter VII

Agencies Contacted Prior to or During the Preparation of the Environmental Assessment

VII. AGENCIES CONTACTED PRIOR TO OR DURING THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

The following agencies were contacted prior to the preparation of the Draft Environmental Assessment:

1. Planning Department
   County of Maui
   250 S. High Street
   Wailuku, Hawaii 96793

2. Maui Family YMCA
   250 Kanaloa Avenue
   Kahului, Hawaii 96732

3. Department of Land and Natural Resources
   State Historic Preservation Division
   33 South King Street, 6th Floor
   Honolulu, Hawaii 96813

Chapter VIII

Comments Received During Public Comment Period and Responses

PO Box 330973
KAHULUI, HI 96733-0973
Jan 20, 1997

DEPT. of ACCOUNTING & GENERAL SERVICES
P.O. Box 119
HONOLULU, HI 96810

RE: KEANAE STATE BASEYARD IMPROVEMENTS

TO ALL CONCERNED:

Our residence is directly below Keanae Baseyard, in Keanae Homestead at TMK 1-1-003:03 and directly below the NE corner of the 5250 sq.ft. detention basin. THE E.A. says retained storm water will eventually be absorbed into the ground. Is there no provision for over flow? Those of us who live in Keanae know that after 1 week or less of continual rain, the ground is saturated, and all additional rainfall becomes runoff. This happens every year. This means that there will be twice the average runoff coming over the cliff above our house and running down the county road, or depending on the layout of the detention basin, a large runoff from one corner of it could be excessive enough to flood over the county road into our yard. Drainage

Several years ago a landslide occurred directly below that N.E. corner of the detention basin, felling the Keanae county road, and a large culvert over 3' in diameter, but our [illegible] causing significant damage. Counties

much larger boulder was exposed and hanging that cliff site. Within a year after that landslide, County of Maui contracted a job out to remove at danger. The contractor chose to blast the ck in half to shear off the overhangers art. So now, #1, there is already an unstable cliff face there, #2, blasting it may have further destabilized it, and #3. having a water detention basin there will certainly increase the amount of water absorbtion in that area, which will further de-stabalize that cliff face.

landslide

Before the Big State Highway repair was done at mile marker 16, most of the runnoff was routed through the YMCA grounds. After that repair job, twice as much runnoff came over the cliff above our house, gutting the shoulder of the county road, making it difficult to drive into our driveway. The county chose to repair the road edge with a gutter to allow that excess runnoff to continue down the road without further damage to our driveway. Is the County of Maui willing to be responsible for increased damage to the county road from the increased runnoff?

You should consider changing the location of the detention basin and provide an overflow pipe system off to the North of the property.

The EA states that this area is not part of a scenic corridor. Did the consultant not drive down Hana Highway or visit Kaanai?

The EA mentions 4 common birds seen in the area. No mention is made of the State Bird Sanctuary at Paiwalu Point where the following NATIVE HAWAIIAN Birds live or frequent: IWA, BROWN BOOBY, BLACK CAP TERN, BROWN NODDY, TROPIC BIRD, GOLDEN PLOVER, WEDGETAIL SHEARWATER AND BLACK AND WHITE SOOTY TERN. THE SECURITY LIGHTING PLACEMENT SHOULD ADDRESS THE AFFECT ON THESE AND OTHER BIRDS SUCH AS THE OWLS SEEN AT NIGHT.

THANK YOU FOR THIS OPPORTUNITY TO COMMENT ON THIS FAVORABLE IMPROVEMENT TO OUR COMMUNITY.

SINCERELY,

Gladys & Isaac Kainoa, Jr.

MUNEKIYO & ARAKAWA, INC.

March 20, 1997

Gladys and Issac Kanoa
P.O. Box 330973
Kahului, Hawaii 96732-0973

Dear Mr and Mrs. Kainoa:

Subject: Draft Environmental Assessment for the Keanae Baseyard Renovations (TMK 1-1-02:10)

Thank you for your letter of January 20, 1997 regarding the subject matter. On behalf of the State Department of Accounting and General Services (DAGS), we would like to take this opportunity to respond to your comments.

1. ***Drainage System***

The detention basin intially proposed for the project has been removed from consideration. Conceptually, the new drainage system scheme for the project will retain basic drainage patterns, and as with existing conditions, the majority of surface runoff will flow in a northerly direction.

Situated across the project site within Hana Highway, an existing drain inlet will be reconstructed and a new, larger drainline will be connected to the proposed onsite underground drainage system. The runoff generated onsite will be collected by four (4) drain inlets and directed to the onsite drainage system. The incremental increase in onsite runoff (3.59 cfs) will be accommodated by approximately 200 linear feet of perforated pipe which will be a component of the onsite drainage system. The onsite runoff, as well as the offsite runoff collected by the reconstructed Hana Highway drain inlet, will be conveyed by a new underground drainage system along the Keanae Homestead Road right-of-way where it will be discharged via a new headwall located on a State-owned vacant parcel located makai of the Keanae Homestead Road. Refer to the attached.

All drainage system improvements will be designed in accordance with applicable regulatory standards. A detailed drainage report, along with the construction

plans for the project, will be submitted for review and approval by applicable governmental agencies.

The proposed drainage system is anticipated to improve the overall drainage condition of the area. With the installation of the proposed drainage system, the development of the proposed project is not anticipated to have an adverse effect to adjacent and downstream properties.

2. ***Views***

In the Keanae region, important viewing points are found at Kaumahina State Park, the YMCA campsite, the Wailuanui Wayside Lookout and the Wailuanui Saint Gabriel's Lookout before Waikani Falls. For visitors and the general public, viewing points function as scenic lookouts. Although it is not designated a public scenic lookout, we agree the project site offers excellent views of the Keanae peninsula and ocean.

With regard to project design issues, this matter is being reviewed by the County's Urban Design Review Board. To minimize visual impacts from Hana Highway, the proposed structures have been redesigned to have lower building heights (16 feet above grade for the office building and 24 feet above grade for the truck/storage shed). Earth tone colors will be used in determining the final color scheme of the buildings.

3. ***Avifauna***

It is acknowledged that the Keanae region does support the habitat of a variety of birds, including the Dark-rumped petrel and Newell's shearwater. In this regard, security lighting for the project has been dropped from consideration. Lighting for the buildings will incorporate appropriate design features to minimize impacts to light sensitive species and will be primarily residential in character.

We hope that the above response addresses your concerns. Thank you again for your comments.

Very truly yours,

Glenn Tadaki, Planner

GT:tav
Enclosure
cc: Eric Nishimoto, Department of Accounting and General Services (w/enclosure)
Jun Sakauye, Thomas T. Agawa & Associates (w/enclosure)
agawa\kanoa\kanoa.ltr

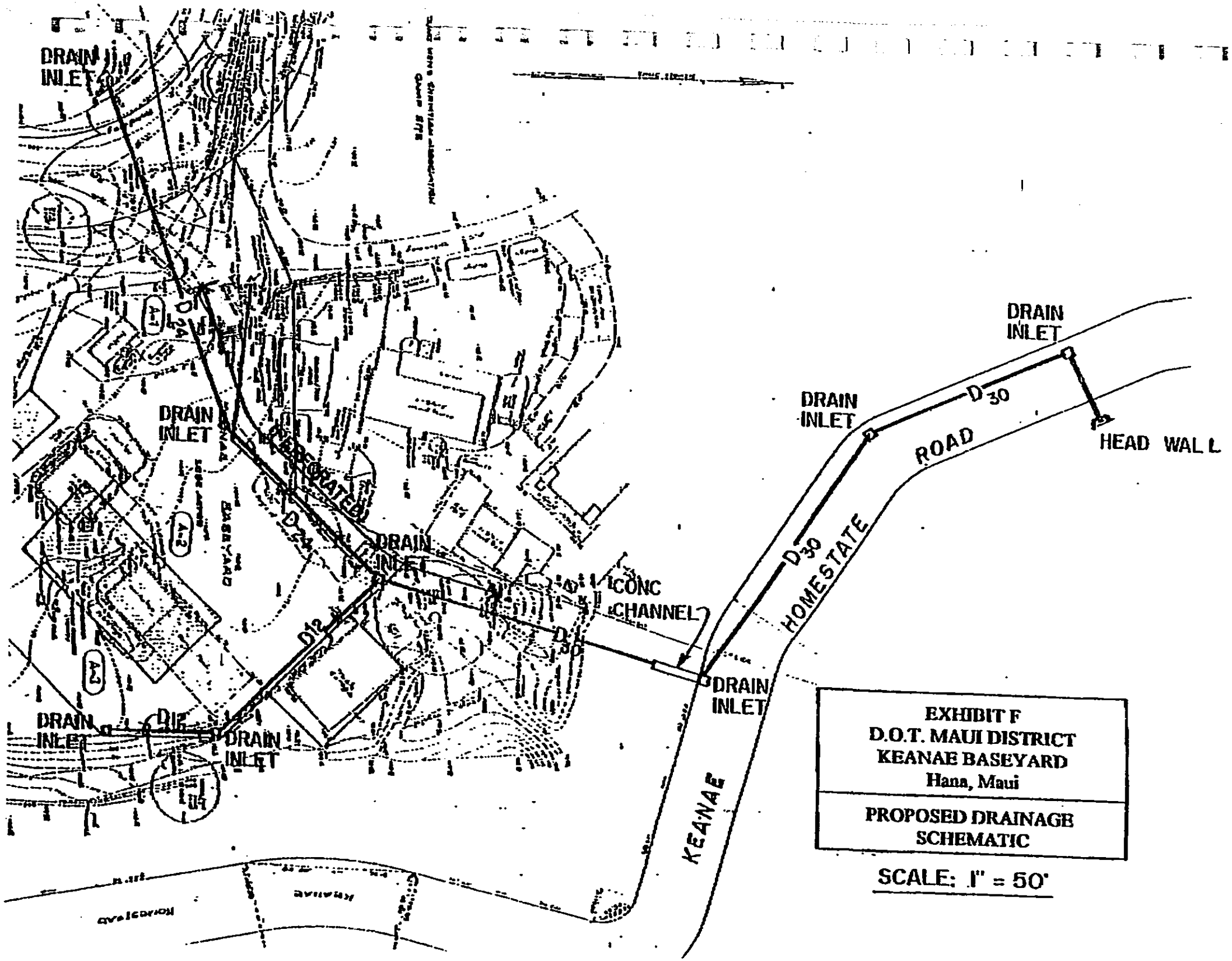


EXHIBIT F
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

PROPOSED DRAINAGE SCHEMATIC

SCALE: 1" = 50'

CORRECTION

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

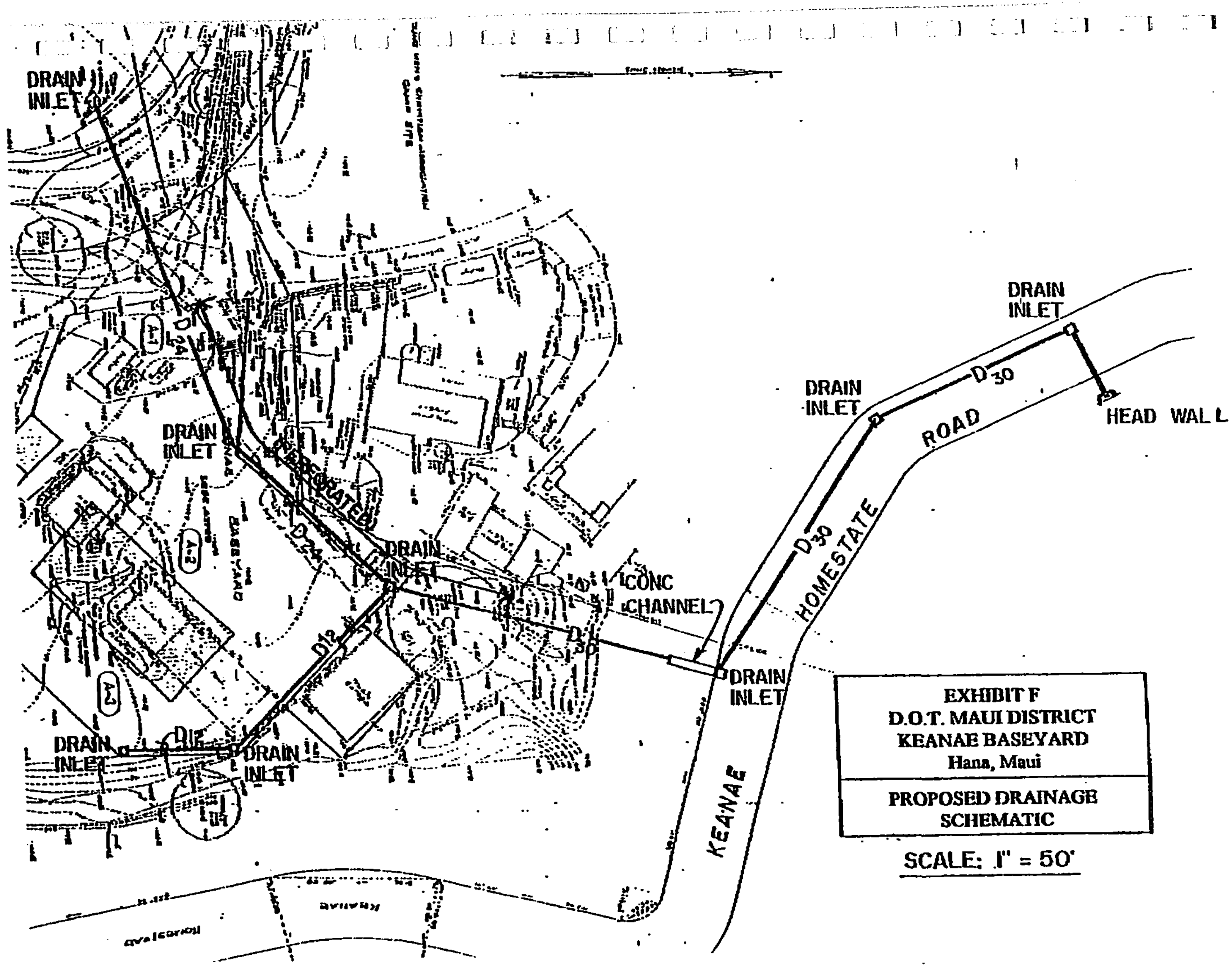


EXHIBIT F
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

PROPOSED DRAINAGE SCHEMATIC

SCALE: 1" = 50'

JAN 24 1997

SR 93 Ke'anae
Ha'iku, Hawai'i 96708
January 21, 1997

Eric Nishimoto
Dept. of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810

RE: Draft Environmental Assessment, Ke'anae Baseyard Renovations, TMK 1-1-02:10

Dear Mr. Nishimoto:

Thank you for the opportunity to comment on this Draft Environmental Assessment (DEA). I have several concerns.

DRAINAGE

I am very concerned that the detention basin for the increased runoff generated by the project was based on a 10-year storm event. This is not adequate. A 100-year event, or at a minimum a 50-year event, should be used. There is a residence directly below the subject property which would be severely impacted by excessive runoff. What will happen if the detention basin overflows, and where are the soil tests to show that this increased runoff (reported as 3.59 cfs on p. 2 and 3.23 cfs on p. 3 of Appendix B, Preliminary Drainage Report) will in fact permeate the soil quickly and not overflow? In answer to concerns about drainage raised by the YMCA, the consultant replied that improvements will be made as part of the proposed renovation project. However, no information or diagrams relating to this are incorporated in the body of the DEA.

The drainage report reveals that 20,600 sq. ft. (almost one-half acre) of paved area for parking and driveway are planned. Consideration should be given to paving a smaller area and using gravel instead. This would alleviate much of the drainage problem.

BIRDS / LIGHTING

The information about birds is inaccurate: "Avifauna in the region typically include mynas, doves, sparrows and cardinals. There are no endangered or threatened wildlife species in the vicinity of the subject property." (p. 17-18) In fact, there are at least a dozen species of native birds which frequent the area, and the 6-acre state bird sanctuary at Pauwalu Point is about a mile away. The 'a'o (Newell's shearwater) and 'ua'u (dark-rumped petrel) are both on the Federal List of Endangered Species, and both frequent the Ke'anae area. They fly between the mountain and the ocean and are disoriented by bright lights. The DEA states that improvements will include exterior lighting, but no details are given. Outdoor lighting in excess of normal modest residential lighting should not be allowed. High wattage security lighting could be seen from great distances and endanger the lives of native birds. Only shielded, low intensity lights which are defused down should be allowed. No metal halide or

mercury vapor lights should be used. No lights should be taller than 14 feet off the ground. Please see the attached brochure by the DLNR. "The Newell's Shearwater Light Attraction Problem" for further information.

VISUAL IMPACTS

The DEA states that "the project site is not considered to be a part of, or in proximity to, a scenic corridor." (P. 25) I do not know what standard the author is using for his definition of "scenic corridor", but I am sure that many thousands of residents and millions of tourists would disagree with this statement. The Hana Highway, especially in the Ke'anae region, is one is the most scenic corridors in the world. Kalo o ka 'Aina, referenced by the DEA, makes note of the spectacular views from various points on the highway in the Ke'anae area. It notes that the YMCA complex is one of the sites offering "exceptional ...view sites that are important for the preservation of viewsheds." (p. 98-99) Although the subject area is on land zoned agricultural, it is adjacent to conservation land, which is the dominant zoning in the area. The subject parcel is also in the SMA area. Thus is is appropriate that special attention be paid to making sure that the buildings harmonize with the surrounding environment. It is not quite accurate to state that "the proposed project is compatible visually, in scale, and in intensity with surrounding properties and roadways." (p. 33) In fact, buildings of this scale are the exception rather than the rule in the area. It is true that the neighboring YMCA has several large structures, and it is the recent renovations and repainting of those buildings which causes me to be concerned about what will happen in this case. In the past, the YMCA buildings were not particularly noticeable from viewpoints on the Hana Highway several miles to the west. However, a few years ago they repainted the buildings a light shade of green. They now stick out like sore thumbs and assault the eyes of the viewer approaching Ke'anae. Protests to the Y went unheeded; in fact we were told that they had consulted an architect for the paint color so that it would blend with the environment! I can only guess that the architect must have never visited the site.

Although the current DOT buildings are not particularly noticeable, the new, larger structures may be. I urge that earth tone (particularly darker green) paints be used so that the buildings will blend with the environment. And I hope that we will not be subjected to more pink boulders lining the road.

I suggest that the proposed Hana Community Design Guidelines, currently under review by the Planning Commission, be reviewed to make sure the design in consistent with these guidelines.

LANDSCAPING

The DEA states, "plant selection for the project will be based on hardiness, pest resistance as well as aesthetic concerns." Certainly these concerns are valid, but there are other standards which must be adhered to as well. State law (HRS 103-24.6) requires the incorporation of native and Polynesian-introduced plant species in the landscaping of this state facility. The Maui County Planting Plan and the Hana Community Plan (HCP) similarly encourage the use of these plants. The HCP's planning standards specify:

> The following planning standards are specific guidelines or measures for development and design...
>
> <u>Landscaping:</u>
>
> Native plant species which are found in the Hana region shall be utilized for public and quasi-public facilities to the greatest extent possible.

Fortunately, these standards are complementary, as native and Polynesian-introduced plants tend to be hardy, pest-resistant and beautiful.

CONSULTATIONS

I was surprised at the small list of consulted parties: one state agency, one county agency and the YMCA. Given the concerns expressed above, additional agencies and groups should have been consulted. The list should include, at a minimum, the U.S. Dept. of Agriculture Natural Resources Conservation Service (regarding runoff), other divisions of DLNR--especially Aquatic Resources (for potential effects of runoff on the aquatic environment) and Forestry and Wildlife (for effects on birds), the county Urban Design Review Board, and community groups: Sierra Club (Hawai'i Chapter, Maui Group), Hana Community Association and Na Moku Aupuni o Ko'olau Hui, a Ke'anae group.

Thank you for this opportunity to comment. Please send me copies of any future documents relating to this project.

Sincerely,

Elaine S. Wender

encl.

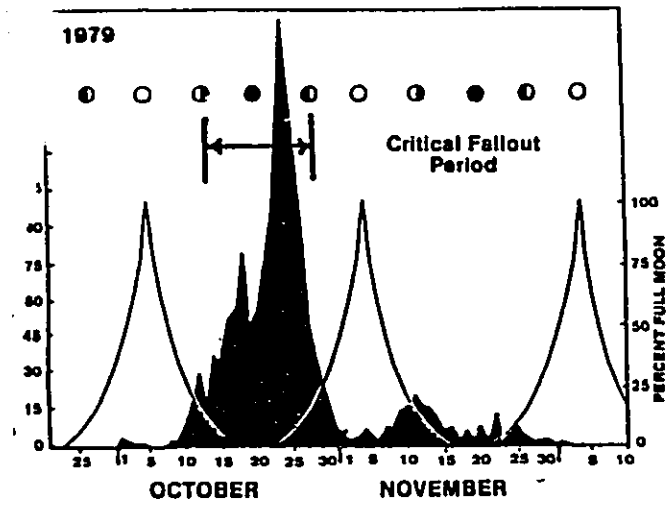


Figure 4. Relationship of shearwater "fallout" to the moon phases. The critical period of fallout occurs during the week before and after the new moon (darkest nights). Dowsing lights that are not absolutely necessary during that period could substantially reduce the annual shearwater fallout problem.

What To Do If Shearwaters Fall In Your Area

1. Collect birds as soon as possible to avoid losses to dogs and cats. They are generally docile birds and are easily handled. Take them to the nearest "shearwater aid station" located at county fire stations and at a few private business locations around the island. If birds must be held overnite, keep them in ventilated cardboard box with a secure lid.

2. Do not release birds by tossing them into the air. They may have unseen internal injuries and could become more badly injured.

TECHNICAL ASSISTANCE IS AVAILABLE

FOR ADDITIONAL INFORMATION, CONTACT:

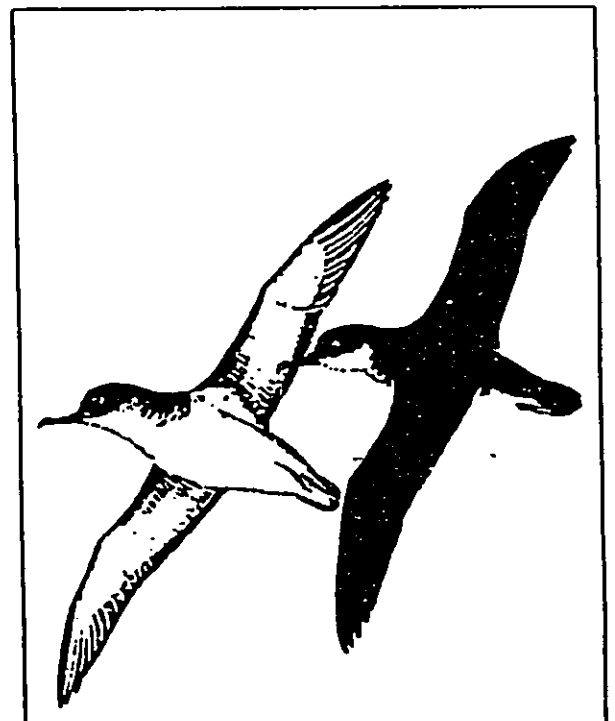
State of Hawaii
Department of Land and Natural Resources
Division of Forestry and Wildlife
P.O. Box 1671
Lihue, Hawaii 96766
245-4433

U.S. Dept. of the Interior
Fish and Wildlife Service
P.O. Box 87
Kilauea, Hawaii 96754
828-1413

The Nature Conservancy
of Hawaii
1026 Nuuanu Avenue, Suite 201
Honolulu, Hawaii 96813
537-4508

FORESTRY & WILDLIFE
HAWAII

DEPARTMENT OF
LAND AND NATURAL RESOURCES



THE NEWELL'S SHEARWATER LIGHT ATTRACTION PROBLEM

A GUIDE FOR ARCHITECTS, PLANNERS, AND RESORT MANAGERS

INTRODUCTION:

The future of a native Hawaiian seabird, the Newell's Shearwater, is threatened by the growth of new urban developments. Every year on Kauai, nearly 1,500 Newell's Shearwaters are attracted to bright urban lights, fly into unseen objects and fall stunned to the ground. Fortunately, 90% of them are recovered and successfully returned to the wild through the "SOS" (save our shearwater) program which involves the cooperation of the general public.

This brochure is designed to describe the bird, its problems with lights and specifically what architects planners, resort managers and the general public can do to reduce or avoid the light attraction problem.

THE BIRD

The Newell's Shearwater once nested on all of the major Hawaiian Islands, but the mongoose, introduced to Hawaii, Maui, Molokai and Oahu in the late 1800's is believed to have caused the extinction of shearwaters on those islands. Kauai is the last strong-hold for this unique native Hawaiian seabird.

Newell's Shearwaters nest during the spring and summer months in the interior mountains of Kauai. They dig a long burrow in the ground beneath dense vegetation and lay a single egg each year. The eggs hatch during July and August, and the nestlings are reared within the burrow. The adult birds abandon the nestlings a week or two before they are old enough to fly. The nestlings become hungry, and leave the nesting grounds by themselves shortly after nightfall. They head for the open ocean, and must depend upon their instincts to find food. They do not return to their nest, but fly south towards the equator where they will remain all winter on the open seas until the following spring.

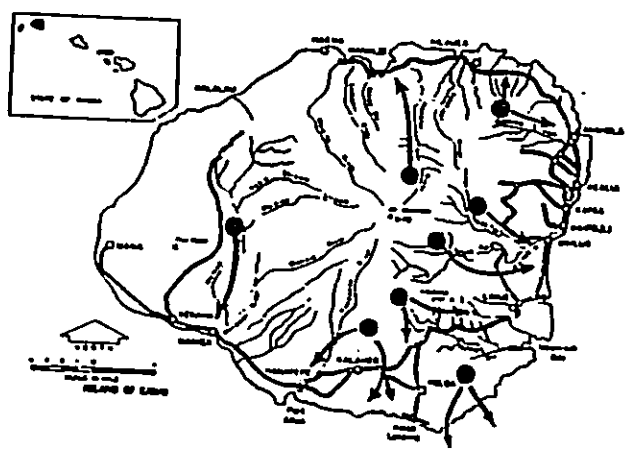


Figure 1. Map showing known nesting areas of the Newell's Shearwater, and probable flight paths to the sea, which require them[illegible]s ov[illegible]hily li[illegible]n are[illegible]

THE THREATS:

PREDATORS. Dogs, cats, rats and feral pigs are known to kill some shearwaters and their young on the nesting grounds each year. The accidental establishment of a new predator to Kauai such as the mongoose, could cause the rapid extinction of this bird. Mongoose sightings on Kauai should be reported to wildlife officials promptly.

LIGHT ATTRACTION: Young shearwaters leaving their nests for the first time, do so only after dark. They are inexperienced and have a natural attraction to bright lights. Flying near urban areas, they become temporarily blinded by the lights and fly into unseen objects such as utility wires, trees, buildings and automobiles. Oftentimes they are just confused and exhausted. Most often they are only stunned and fall to the ground, but about 10 percent of them die each year. The problem is growing because of the increased number of urban lights associated with new resort and residential developments. The greatest "fallout" problem occurs near coastal towns, particularly near river mouths.

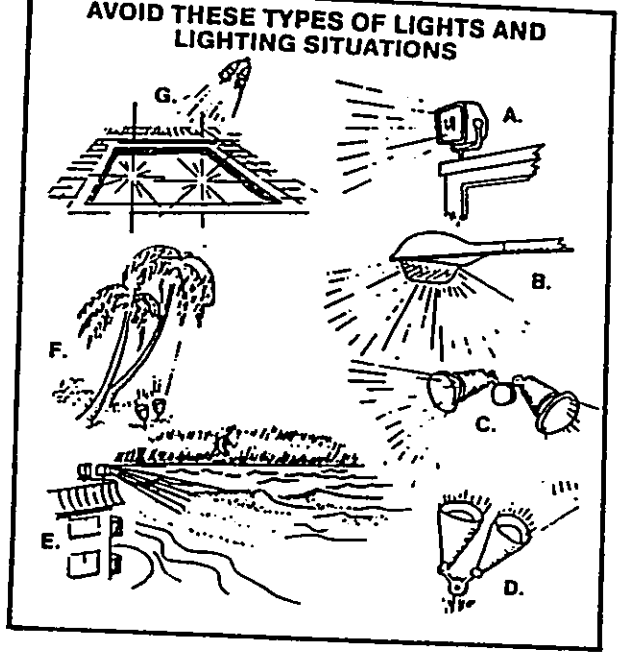


Figure 2. Avoid these types of lights: A. Unshielded high intensity floodlights on tall structures, B. Street lights without shields, C. Unshielded spotlights, D. Spotlights aimed upwards. Avoid using these types of lighting situations during peak fallout periods (new moon) during October and November. E. Floodlights on surf, F. Spotlights aimed up at vegetation, G. Spotlights directed on [illegible] which [illegible]ect ligh[illegible]

WHAT CAN WE DO TO HELP ?

Architects and Planners

- Be aware of the light attraction problem during the planning stages of new development
- Make every effort to avoid lighting situations where light glare projects upwards or laterally (see figure 2). Avoid large high-intensity floodlights located on building tops or poles whenever possible.
- Use shielded lights, cut-off luminaires, or indirect lighting whenever possible. (see figure 3).
- Avoid locating bright lights near utility wires or other objects that could be difficult for birds to see at night.

Hotel, Resort and Condominium Managers

- When converting to new exterior light fixtures, consider installing shielded lights, cut-off luminaires or indirect lighting.
- Consider installing shields on exterior lights that are known to attract shearwaters. Some light manufacturers offer ready made sheilds. In some cases inexpensive shields can be fabricated.
- Avoid using unnecessary lighting during the critical shearwater fallout period. (October and November each year). **Note:** The heaviest fallout occurs on and around the new moon, generally for only 10 to 12 days. (See figure 4). Dowsing unnecessary floodlights that light up the surf or shine upward upon buildings or trees for that short period, could significantly reduce shearwater fall-out

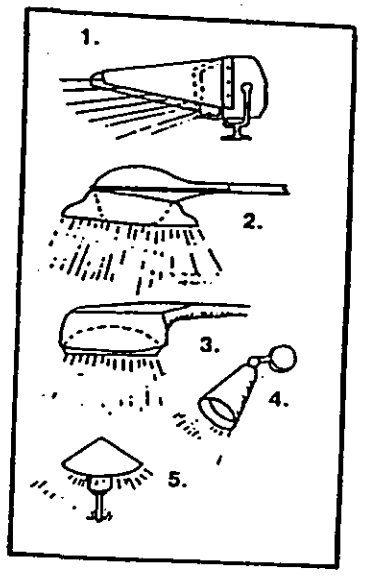


Figure 3. Use these types of lights whenever possible. 1. Shielded floodlights. 2. Shielded streetlights. 3. Cut-off luminare streetlights. 4. Shielded spotlights aimed [illegible]ward[illegible]ndirec[illegible] lighti[illegible] [illegible] th[illegible]nd

MUNEKIYO & ARAKAWA, INC.

March 20, 1997

Elaine Wender
SR 93 Keanae
Haiku, Hawaii 96708

SUBJECT: Draft Environmental Assessment for the Keanae Baseyard Renovations (TMK 1-1-02:10)

Dear Ms. Wender:

Thank you for your letter of January 21, 1997 regarding the subject matter. On behalf of the State Department of Accounting and General Services (DAGS), we would like to take this opportunity to respond to your comments.

1. ***Drainage***

The detention basin initially proposed for the project has been removed from consideration. Conceptually, the new drainage system scheme for the project will retain basic drainage patterns, and as with existing conditions, the majority of surface runoff will flow in a northerly direction.

Situated across the project site within Hana Highway, an existing drain inlet will be reconstructed and a new, larger drainline will be connected to the proposed onsite underground drainage system. The runoff generated onsite will be collected by four (4) drain inlets and directed to the onsite drainage system. The incremental increase in onsite runoff (3.59 cfs) will be accommodated by approximately 200 linear feet of perforated pipe which will be a component of the onsite drainage system. The onsite runoff, as well as the offsite runoff collected by the reconstructed Hana Highway drain inlet, will be conveyed by a new underground drainage system along the Keanae Homestead Road right-of-way where it will be discharged via a new headwall located on a State-owned vacant parcel located makai of the Keanae Homestead Road. Refer to the attached.

All drainage system improvements will be designed in accordance with applicable regulatory standards. A detailed drainage report, along with the construction

plans for the project, will be submitted for review and approval by applicable governmental agencies.

The proposed drainage system is anticipated to improve the overall drainage condition of the area. With the installation of the proposed drainage system, the development of the proposed project is not anticipated to have an adverse effect to adjacent and downstream properties.

2. ***Birds/Lighting***

The EA has been revised to note that the Dark-rumped petrel and Newell's shearwater may transit the area. In this regard, security lighting for the project has been dropped from consideration. Lighting for the buildings will incorporate appropriate design features to minimize impacts to these species and will be primarily residential in character.

3. ***Visual Impacts***

In the Keanae region, important viewing points are found at Kaumahina State Park, the YMCA campsite, the Wailuanui Wayside Lookout and the Wailuanui Saint Gabriel's Lookout before Waikani Falls. For visitors and the general public, viewing points function as scenic lookouts. Although it is not designated a public scenic lookout, we agree the project site offers excellent views of the Keanae peninsula and ocean.

With regard to project design issues, this matter is being reviewed by the County's Urban Design Review Board. To minimize visual impacts from Hana Highway, the proposed structures have been redesigned to have lower building heights (16 feet above grade for the office building and 24 feet above grade for the truck/storage shed). Earth tone colors will be used in determining the final color scheme of the buildings.

4. ***Landscaping***

The landscaping plan for the proposed project includes new trees along the Keanae Baseyard driveway. Existing landscaping which buffer the perimeter of the site will be maintained. Should additional or replacement landscaping be required, native species will be utilized.

5. Consultations

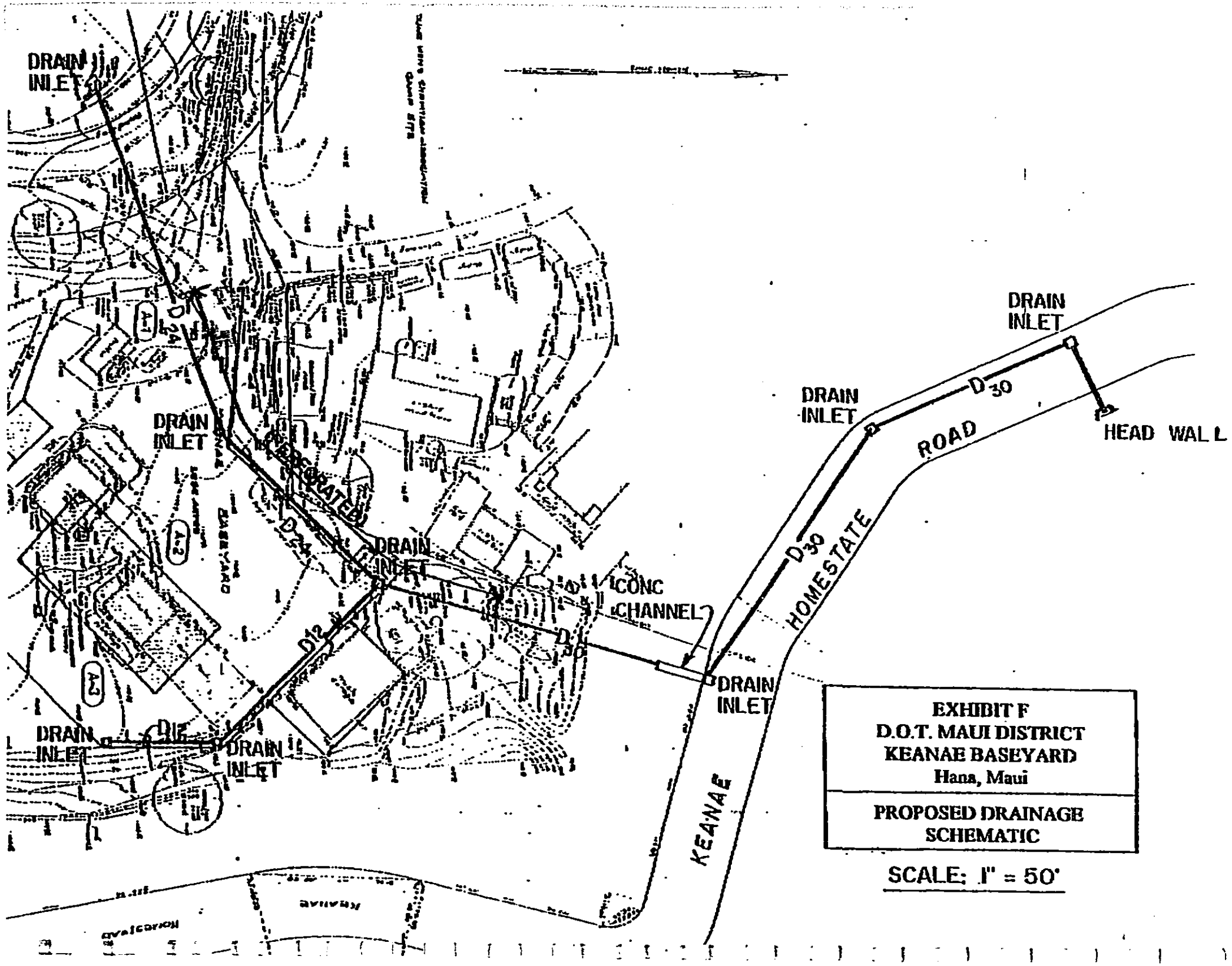
An application for a Special Management Area Use Permit and Special Use Permit for the proposed project is currently being processed by the Maui County Planning Department. As part of the review process, copies of the application have been transmitted by the Planning Department to various County, State and Federal agencies for comments. Reviewing agencies included the U.S. Fish and Wildlife Service, Natural Resources Conservation Service and the Department of Land and Natural Resources.

We hope that the above response addresses your concerns. Thank you again for your interest in the Keanae Baseyard project.

Very truly yours,

Glenn Tadaki, Planner

GT:tav
Enclosure
cc: Eric Nishimoto, Department of Accounting and General Services (w/enclosure)
Jun Sakauye, Thomas T. Agawa & Associates (w/enclosure)
agawa\keanae\wender.ltr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CONC CHANNEL
ROAD
HOMESTATE
KEANAE
HEAD WALL
EXHIBIT F
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui
PROPOSED DRAINAGE SCHEMATIC
SCALE: 1" = 50'

BENJAMIN J. CAYETANO
GOVERNOR

JAN 23 1997

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

January 21, 1997

Mr. Sam Callejo
State Comptroller
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Callejo:

Subject: Draft Environmental Assessment for the Keanae Baseyard Renovations

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

1. The project area is situated above the Keanae peninsula and offers panoramic views of the Keanae coastline and Pacific Ocean. How would this project impact public views from Hana Highway?

2. Presently, a 500 gallon underground fuel storage tank is located on the property. What is the condition of the fuel tank? Is the tank leaking? If so, what are the plans to clean-up the site?

3. Hazardous materials will be stored in this baseyard. Please describe the plans and procedures to prevent such materials from migrating into the groundwater or running off into streams.

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

Sincerely,

Gary Gill
Director

c: Munekiyo and Arakawa

MUNEKIYO & ARAKAWA, INC.

March 20, 1997

Gary Gill
Director
Office of Environmental Quality Control
Attn: Jeyan Thirugnanam
235 South Beretania Street #701
Honolulu, Hawaii 96813

SUBJECT: Draft Environmental Assessment for the Keanae Baseyard Renovations (TMK 1-1-02:10)

Dear Mr. Gill:

Thank you for your letter of January 21, 1997 regarding the subject matter. On behalf of the State Department of Accounting and General Services (DAGS), we would like to take this opportunity to respond to your comments.

1. The subject property offers excellent views of the Keanae Peninsula and the ocean. Public views from Hana Highway however will not be affected by the proposed project since these scenic features are not currently visible from Hana Highway.

2. The 500 gallon underground fuel storage tank is used by the State Highways Division for refueling State vehicles. As part of the renovation project, the underground fuel storage tank will be removed and replaced with two (2) aboveground fuel storage tank. Removal of the underground tank will be coordinated with the Department of Health - Solid and Hazardous Waste Branch and the Maui County Fire Department. Accordingly, removal and clean-up, as required, will be undertaken in compliance with applicable regulatory requirements.

3. Hazardous materials will be stored in the proposed truck/storage shed, within flammable and non-flammable storage rooms. The building will be constructed out of concrete block masonry with 4-inch thick reinforced concrete floors. Hazardous materials to be stored in the non-flammable room include herbicides and

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

pesticides such as Roundup, Krovar (powder), garlon and aresenal. Hazardous materials to be stored in the flammable room include engine oil and NI-106 (mixture for herbicide). All materials will be stored in its own self-sealing container.

We hope that the above response addresses your concerns. Thank you again for commenting on the Keanae Baseyard proposal.

Very truly yours,

Glenn Tadaki, Planner

GT:tav
Enclosure
cc: Eric Nishimoto, Department of Accounting and General Services (w/enclosure)
Jun Sakauye, Thomas T. Agawa & Associates (w/enclosure)

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References

References

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

County of Maui, General Plan, 1990.

County of Maui, Department of Public Works and Waste Management, Solid Waste Division employee Elaine Baker, telephone conversation, October 1996.

County of Maui, Fire Department Captain Paul Malo, telephone conversation, October 1996.

County of Maui, Police Department employee Kerri Yagi, telephone conversation, October 1996.

County of Maui, Department of Water Supply employee Ellen Kraftsow, telephone conversation, November 1996.

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

Group 70 International, Inc., Davianna McGregor, Ph.D. and Cultural Surveys Hawaii, Inc., Kalo Kanu O Ka'Aina, May 1995.

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State of Hawaii, Department of Education employee Trudy Yip-Onaga, telephone conversation, October 1996.

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U.S. Department of the Interior, Fish and Wildlife Service, Letter to Mr. Joe Alueta, Planning Department, February 28, 1997.

U.S. Soil Conservation Services, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S. Government Printing Office, 1972.

Appendices

Appendix A

Letter from Department of Land and Natural Resources, State Historic Preservation Division

941

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

'97 FEB -5 P12:59

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

February 3, 1997

Mr. David W. Blane, Director
Planning Department, County of Maui
250 S. High Street
Wailuku, Maui, Hawaii 96793

LOG NO: 18871 ✓
DOC NO: 9701SC27

Dear Mr. Blane:

SUBJECT: **(I.D. No. SM1 970001 & SUP 970001) Chapter 6E-8 Historic Preservation Review of Proposed Renovations to the Keanae Baseyard, Keanae, Hana District, Maui**
TMK: 1-1-02: 10

Thank you for the opportunity to comment on the Special Management Area (SMA) and Special Use (SUP) permit applications made for proposed renovations to the Keanae Baseyard at Keanae, Maui. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the subject parcel.

The project site consist of the existing Department of Accounting and General Services Baseyard in Keanae. No known historic sites are present within or adjacent to this property. Since the proposed renovations are to be carried out within the area originally impacted by the existing structure, we believe that the SMA and SUP permits, if approved, will have "no effect" on significant historic sites.

Should you have any questions, please feel free to call Sara Collins at 587-0013.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

SC:jen

cc: Ms. Elizabeth Anderson, Cultural Resources Commission, Maui-Planning Department, 250 S. High Street, Wailuku, HI 96793

Appendix B

Preliminary Drainage Report

PRELIMINARY DRAINAGE REPORT

for

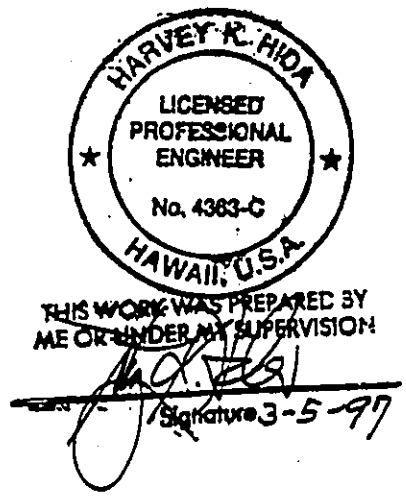
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui, Hawaii

Tax Map Key: 1-1-02:10

Job No. 94-1059

Prepared By:

HIDA, OKAMOTO & ASSOCIATES, INC.
Consulting Engineers
The Commerce Tower Suite 915
1440 Kapiolani Boulevard
Honolulu, Hawaii 96814



March 1997

D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Preliminary Drainage Report

GENERAL DESCRIPTION

The project site is located in Keanae, approximately 500 feet north of the intersection of Hana Highway and Keanae Homestead Road. The location of the project site is shown in Exhibit A. Currently, the project site is occupied by one trailer located near the Hana Highway connection, and gravel parking area and two wooden buildings located in the center of the property, and the majority of the site is covered by heavy vegetation. The existing driveway to the site from Hana Highway will be used as the main two-way driveway.

The subject project will consist of demolition of the existing structures and development of two new structures consisting of an office building and truck storage building. A.C. pavement parking/driveway, landscaping and above-ground fuel/tank and dispenser will also be developed. The total amount of lot coverage by buildings will be approximately 4,380 sq. ft. or little over 3 percent of the 3.096 acre lot. In addition to the building elements, the project will provide approximately 20,600 sq. ft. of paved area for parking and driveway. The total project area will consist of approximately 0.574 acres or 18.5 percent of the lot area.

EXISTING DRAINAGE CONDITION

The topographic survey map of the existing site and the USGS Keanae Quad Map (7.5 Minute Series) was used to determine the tributary areas for the drainage flow. Analysis was then performed for one-hour for a 10-year storm event.

The tributary areas indicate that the majority of the stormwater runoff sheet flow toward north direction and to the Keanae Homestead Road.

The results of the analysis indicates that there is a total of 3.23 cubic feet per second (cfs) of stormwater runoff from the project area and a total of 26.27 cfs for the tributary area.

PROPOSED DRAINAGE CONDITIONS

The proposed layout will retain the basic drainage pattern. As with the existing conditions, the majority of the runoff will flow toward north direction.

The existing drainage inlet within Hana Highway situated across from the project site will be re-constructed and a new enlarged pipe will be connected to the proposed on-site underground drainage system. The surface runoff generated onsite will be collected by four inlets and directed into the on-site drainage system. The onsite runoff, as well as the offsite runoff collected by the Hana Highway inlet will then, piped into a new underground

drain system along the Keanae Homestead Road right-of-way. Stormwater will then be discharged at the new headwall located on a State-owned vacant land.

Analysis was performed on the site using the proposed conceptual grading plan to determine the new tributary areas. The results of the analysis for one-hour of a 10-year storm indicates that there will be approximately 6.82 cfs of stormwater runoff generated from the project area, an increase of 3.59 cfs. The total runoff for the entire tributary area will be increased to 29.86 cfs.

ANALYSIS RESULTS

The project proposes to decrease the area of open space on the site, therefore there will be less permeable area. This decrease in permeability increases the amount of stormwater runoff generated by the project area, thus the overall increase in stormwater runoff. The results of the analysis also indicates, that there will be an increase of 3.59 cfs runoff. This additional runoff due to the increased impermeable surface area will be mitigated by installing approximately 200 lin.ft. of perforated drain pipe for the new drainage system. The required rate of the perforation would be 0.0180 cfs/ft which is within the acceptable rate. The new drainage system will convey the stormwater runoff from the tributary areas to a new discharge headwall located on a State owned vacant parcel situated at the makai side of the Keanae Homestead Road.

CONCLUSION

There will be an increase in stormwater runoff generated by the development. However, the overall drainage condition of the area will be improved by the construction of the underground drainage system, and since stormwater runoff into down stream properties will be limited to the pre-construction rate, we do not anticipate any adverse effects to the surrounding area.

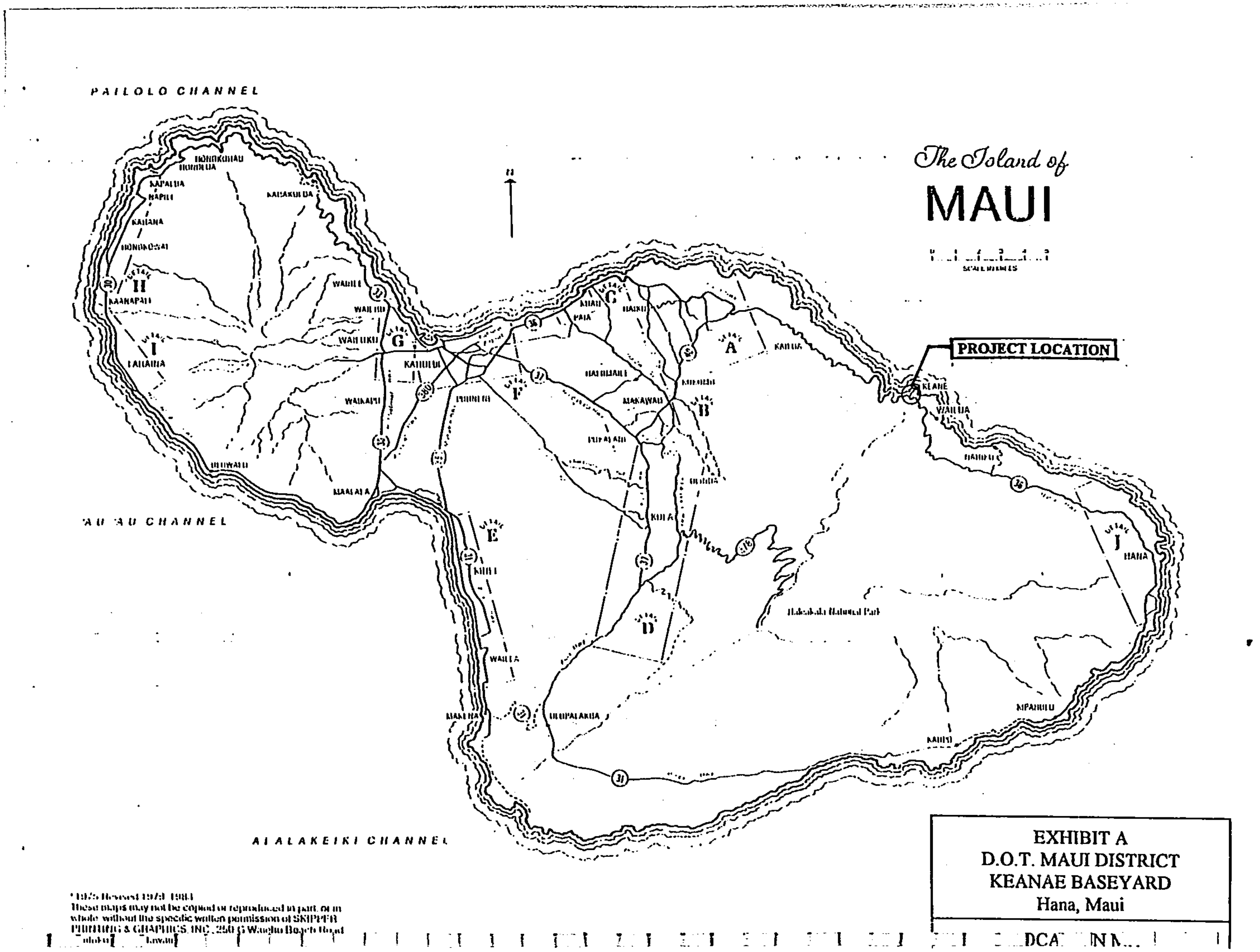
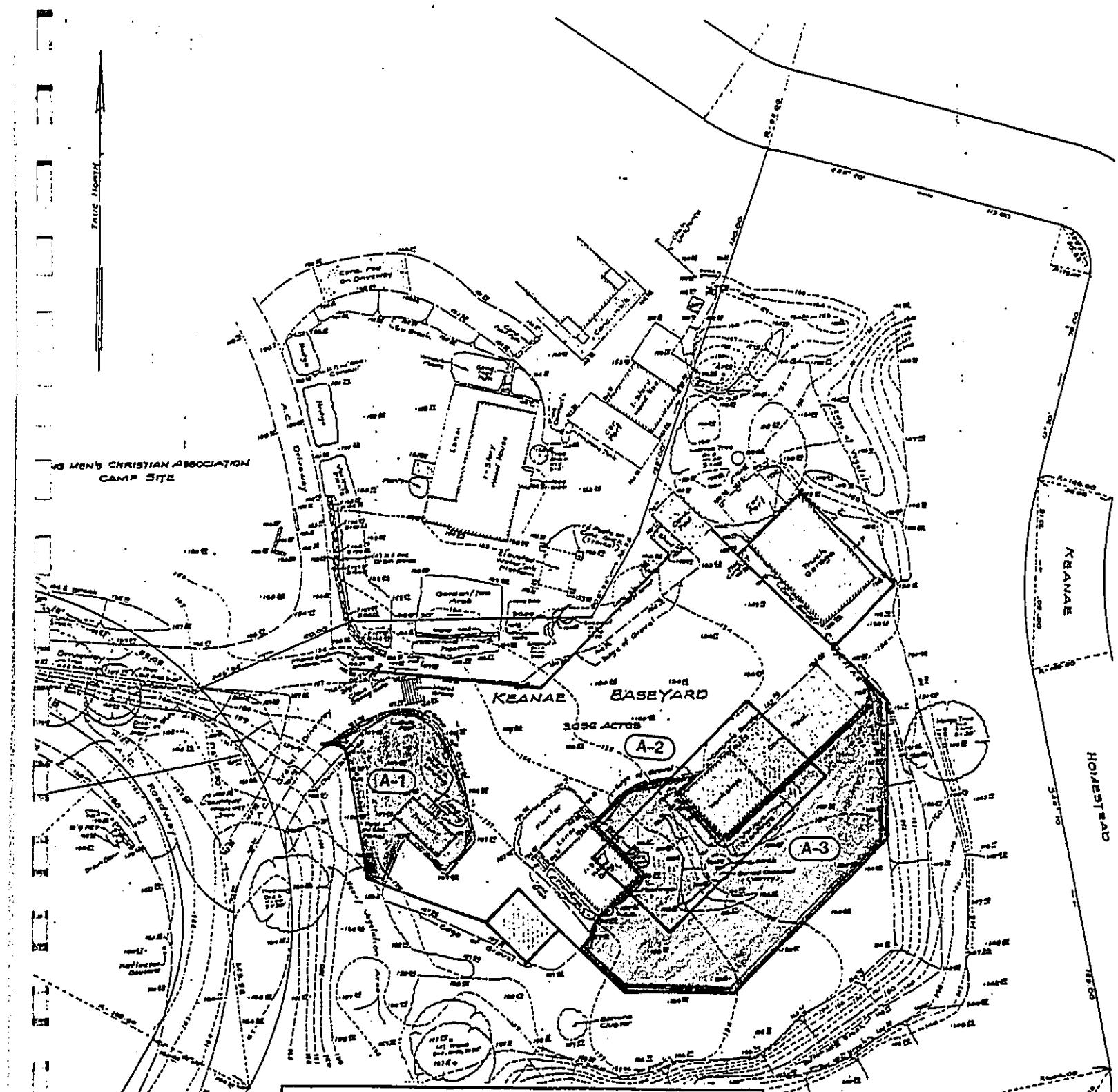


EXHIBIT A
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

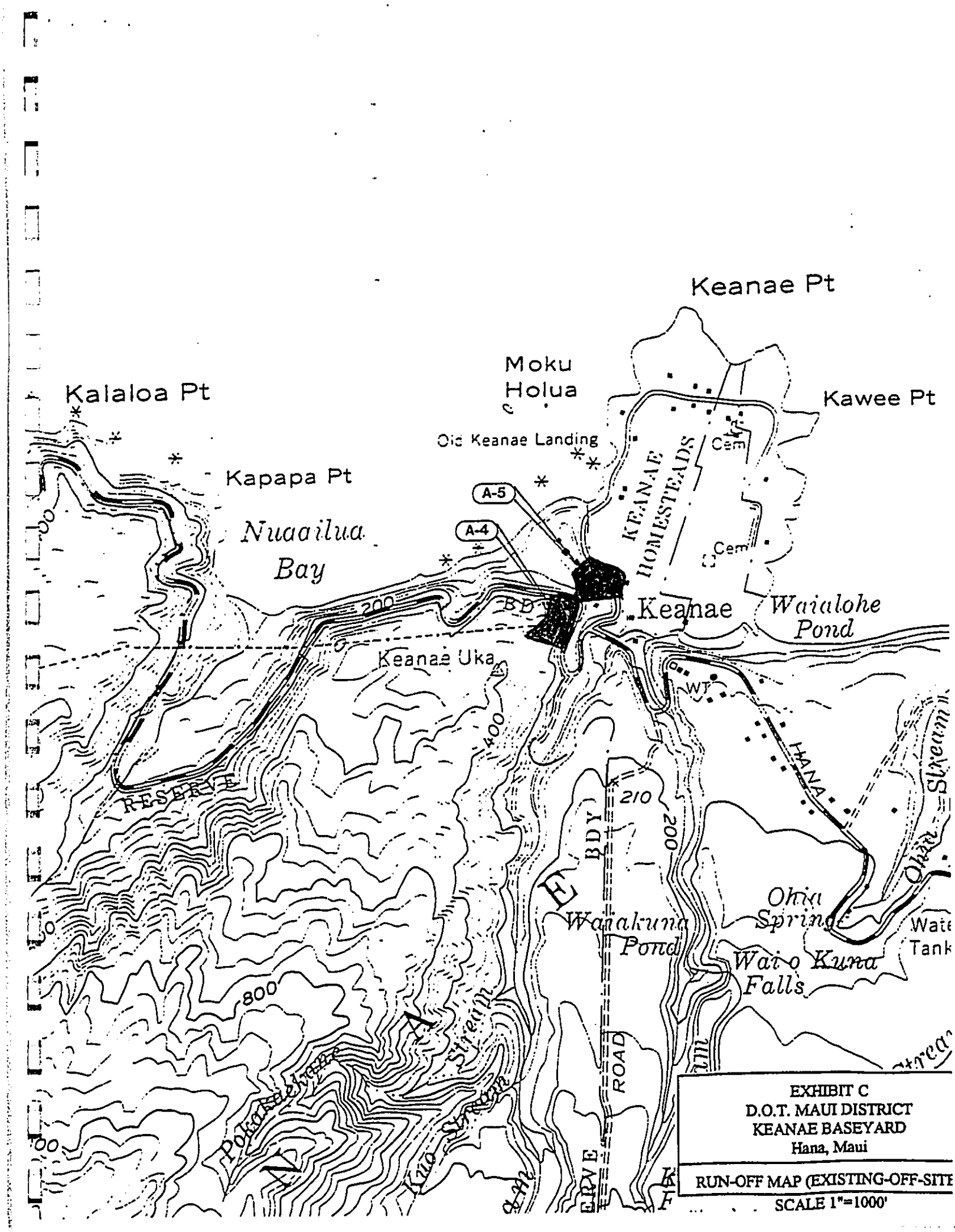


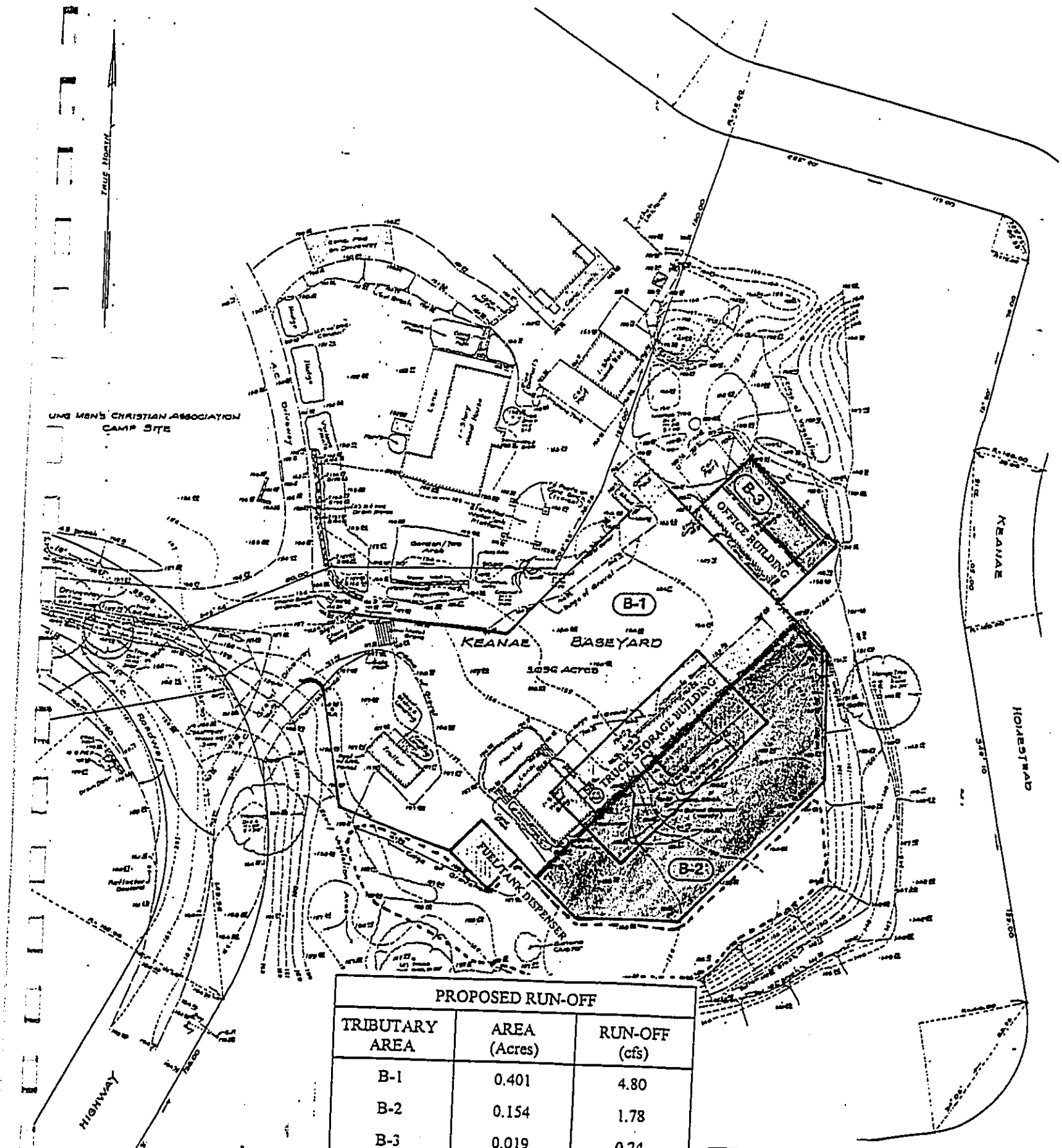
EXISTING RUN-OFF		
TRIBUTARY AREA	AREA (Acres)	RUN-OFF (cfs)
A-1	0.067	0.35
A-2	0.337	2.14
A-3	0.170	0.74
A-4	2.530	13.38
A-5	1.826	9.66
TOTAL	4.930	26.27

EXHIBIT B
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

RUN-OFF MAP (EXISTING-ON SITE)

SCALE: 1"=50'





PROPOSED RUN-OFF		
TRIBUTARY AREA	AREA (Acres)	RUN-OFF (cfs)
B-1	0.401	4.80
B-2	0.154	1.78
B-3	0.019	0.24
B-4	2.530	13.38
B-5	0.913	4.83
B-6	0.548	2.90
B-7	0.365	1.93
TOTAL	4.930	29.86

EXHIBIT D
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

RUN-OFF MAP (PROPOSED-ON SITE)
SCALE: 1"=50'

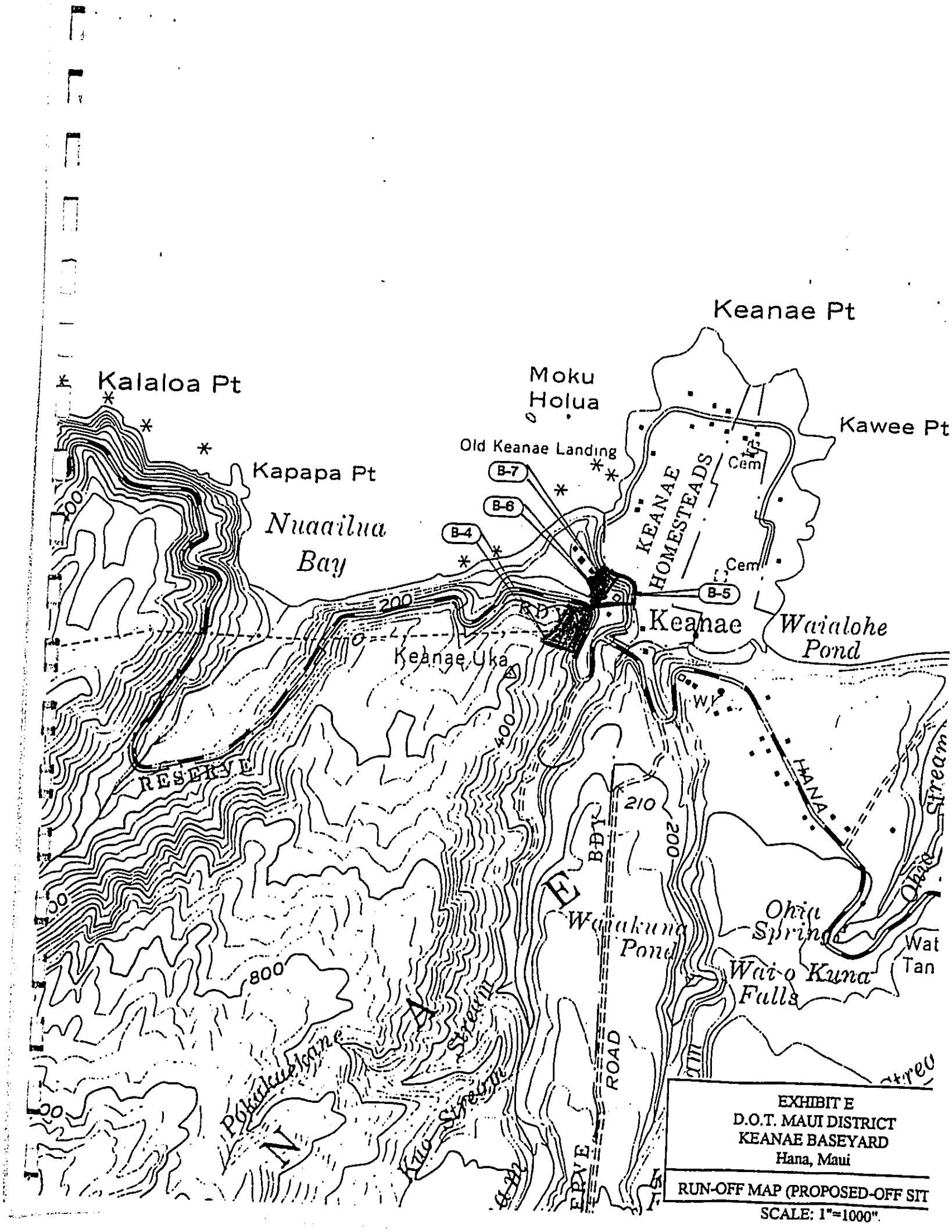


EXHIBIT E
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

RUN-OFF MAP (PROPOSED-OFF SIT

SCALE: 1"=1000'.

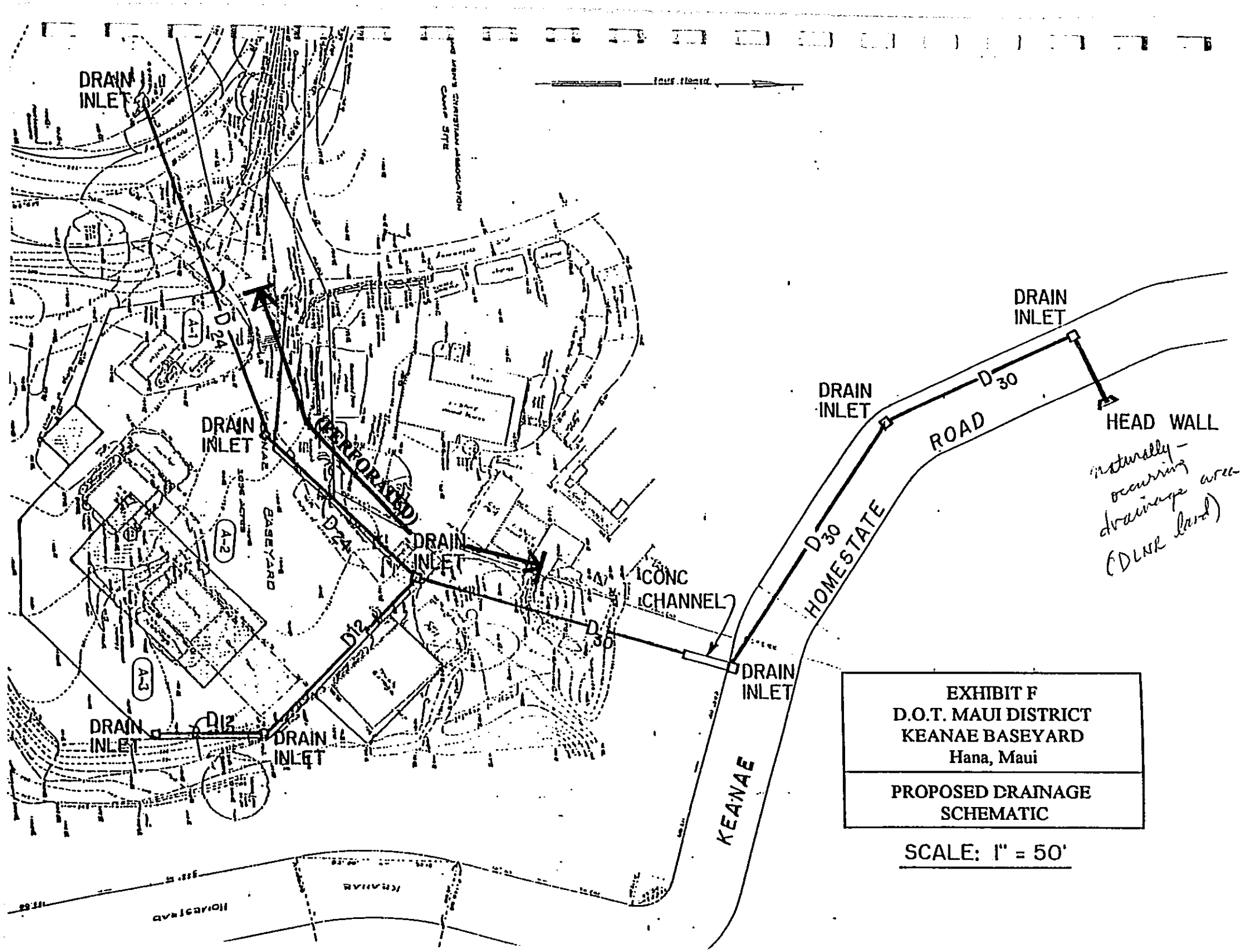


EXHIBIT F
D.O.T. MAUI DISTRICT
KEANAE BASEYARD
Hana, Maui

PROPOSED DRAINAGE SCHEMATIC

SCALE: 1" = 50'

RUN-OFF CALCULATIONS

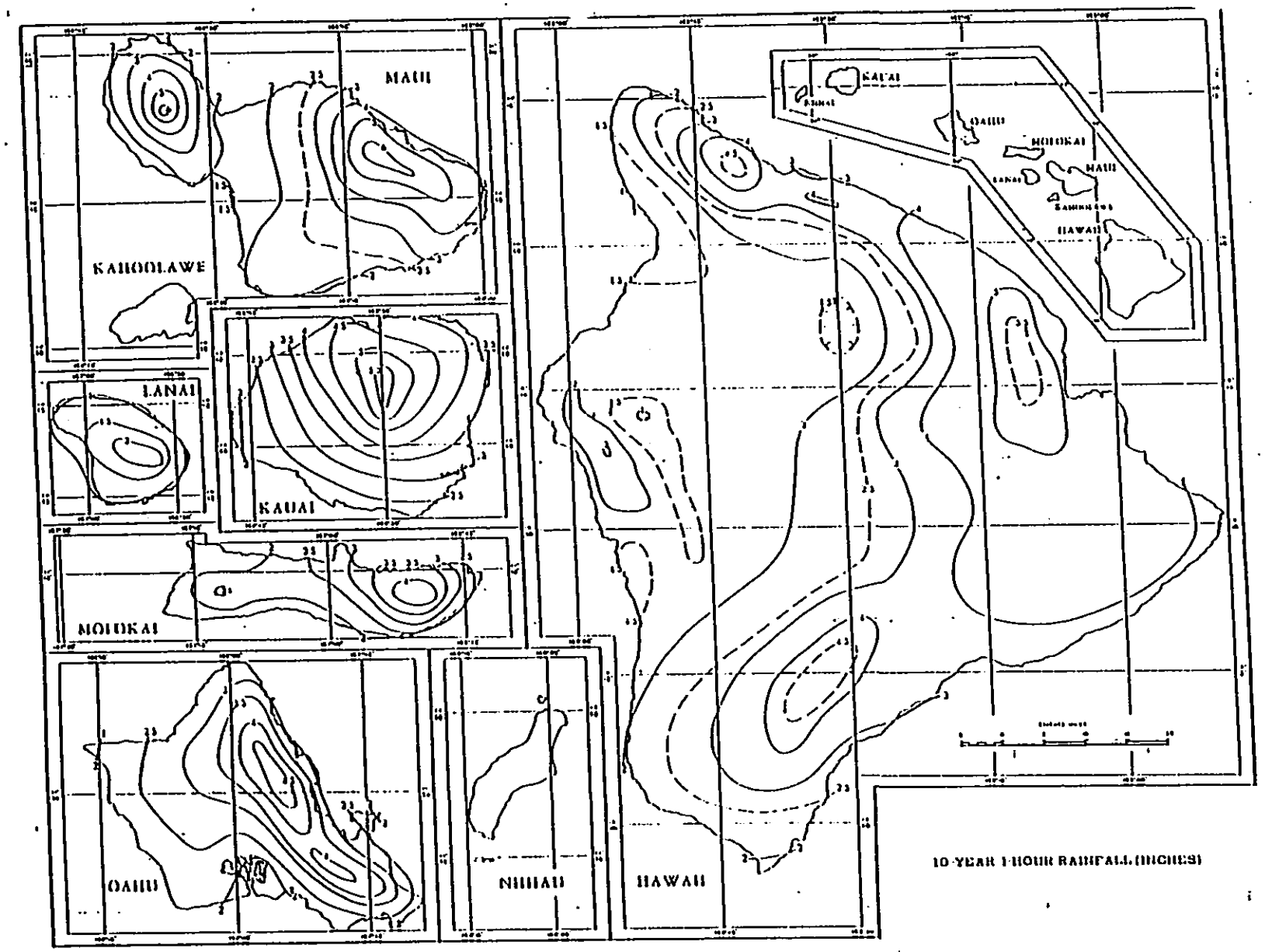


FIGURE 18.—10-yr. 1-hr. rainfall (in.)

HIDA, OKAMOTO & ASSOCIATES, INC.

Project: D.O.T. MAUI DISTRICT - KEANAE BASE YARD
Hana, Maui
Tax Map Key:1-1-02:10

Date: 3/5/97
By: HKH/CYO

INLETS DESIGN WORKSHEET EXISTING

Tm = 10 Years — One-Hour 4.7 Inches — Q=RCIA

DRAINAGE AREA		Ground Character	Overland Flow Time: Length (Feet)	Slope (Ft/Ft)	Tc (Min)	R Corr Factor	C	I	A (Acres)	Q (CFS)
A-1		Landscape/Trailer	40	0.050	7.5	2.55	0.44	4.70	0.067	0.35
A-2		Gravel/Roof/Conc.Pad	175	0.020	10.5	2.25	0.60	4.70	0.337	2.14
A-3		Lawn	140	0.029	10.2	2.30	0.40	4.70	0.170	0.74
A-4		Misc. Vegitation	500	0.320	10.5	2.25	0.50	4.70	2.530	13.38
A-5*		Misc. Vegitation	400	0.200	10.5	2.25	0.50	4.70	1.826	9.66
								Total	4.930	26.27

* Tributary area A-5 = 2.4 acres (which includes areas A-1, A-2, A-3)
Effective area of A-5 = 1.826 acres (2.4 acre - (A-1) - (A-2) - (A-3))

HIDA, OKAMOTO & ASSOCIATES, INC.

Project: D.O.T. MAUI DISTRICT - KEANAE BASE YARD
Hana, Maui
Tax Map Key:1-1-02:10

Date: 3/5/97
By: HKH/CYO

INLETS DESIGN WORKSHEET PROPOSED

Tm = 10 Years — One-Hour 4.7 Inches — Q=RCIA

DRAINAGE AREA		Ground Character	Overland Flow Time: Length (Feet)	Slope (Ft/Ft)	Tc (Min)	R Corr Factor	C	I	A (Acres)	Q (CFS)
B-1		AC Pavement/Roof	185	0.030	4.5	2.80	0.91	4.70	0.401	4.80
B-2		AC Pavement/Roof	130	0.027	5.0	2.70	0.91	4.70	0.154	1.78
B-3		Roof	18	0.200	3.0	2.80	0.95	4.70	0.019	0.24
B-4		Misc. Vegetation	500	0.320	10.5	2.25	0.50	4.70	2.530	13.38
B-5*		Misc. Vegetation	400	0.200	10.5	2.25	0.50	4.70	0.913	4.83
B-6*		Misc. Vegetation	400	0.200	10.5	2.25	0.50	4.70	0.548	2.90
B-7*		Misc. Vegetation	400	0.200	10.5	2.25	0.50	4.70	0.365	1.93
								Total	4.930	29.86

* Tributary areas B-5, B-6, & B-7 includes areas B-1, B-2, & B-3 (project areas)
The areas shown for areas B-5, B-6, & B-7 are the effective areas, exclusive of areas B-1, B-2, & B-3.

Appendix C

Letter from Department of Public Works and Waste Management Dated November 7, 1996

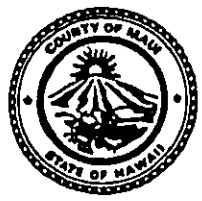
NOV 12 1996

LINDA CROCKETT LINGLE
Mayor

CHARLES JENCKS
Director

DAVID C. GOODE
Deputy Director

AARON SHINMOTO, P.E.
Chief Staff Engineer



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

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

EASSIE MILLER, P.E.
Wastewater Reclamation Division

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

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

November 7, 1996

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

Dear Mr. Munekiyo:

SUBJECT: KEANAE BASEYARD RENOVATION (TMK: 1-1-02:10)

The subject property is in the County Interim District. As you note in your November 1, 1996 letter, Chapter 19.02.030(5) allows "publicly owned buildings" as a permitted use.

As the proposed use is the same as the current use, a construction baseyard for the State Department of Transportation, this use is consistent with Maui County Code 19.02.030(5) and a use variance is not required.

If you have any questions, please call me at 243-7845.

Sincerely,

DAVID GOODE
Deputy Director of Public Works
and Waste Management

DG:mt