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DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
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LETTER NO. (P) 1017.4

JAN 11 1994

Mr. Brian J. J. Choy
Director
Office of Environmental
Quality Control
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

OFFICE OF
QUALITY CONTROL

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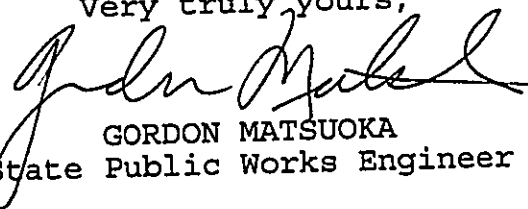
Dear Mr. Choy:

Subject: Negative Declaration for Kauai Economic
Opportunity (KEO) Building and Lihue
Multi-Agency Storage Facility
TMK 3-8-05:1

The Department of Accounting and General Services has received no comments during the 30-day public comment period which began on November 23, 1993. The agency has determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the January 23, 1994 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the final EA. If there are any questions, please have your staff call Mr. Joseph Earing of the Planning Branch at 586-0492.

Very truly yours,


GORDON MATSUOKA
State Public Works Engineer

JE:jy

Attachments

cc: Ms. Mabel Fujiuchi w/o attach.
Ms. Rose Cruz Churma w/o attach.
Mr. Dennis Irie w/o attach.
Mr. Wilfred Kimura w/o attach.
Mr. Clifford Leong w/o attach.

1994-01-23-KA-PEA - Kauai Economic Opportunity
Building & Lihue Multi-Agency Storage Facility ^{JAN 23 1994}

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING
AND LIHUE MULTI-AGENCY STORAGE FACILITY**

This document is prepared in accordance with:
Chapter 343, Hawaii Revised Statutes
Chapter 200, Department of Health Administrative Rules
Act 241, Session Laws of Hawaii

Proposing Agency

Department of Accounting and General Services

Accepting Authority

Governor, State of Hawaii

Final Environmental Assessment

January 1994

*DesignLab
for
INK Architects, Inc.*

PROJECT SUMMARY

Project Name: KEO Building and Lihue Multi-Agency Storage Facility

Applicant: Department of Accounting and General Services

Accepting Authority: Governor, State of Hawaii

Project Location: 2804 Wehe Road, Lihue, Kauai

Tax Map Key: 3 - 8 - 05: 01

Land Area: 1.928 Acres or 83,984 Square Feet

Landowner: Department of Accounting and General Services

Gross Building Area: KEO Building (Phase I) 5,550 sf
Multi-Agency Storage Buildings (Phase II) 15,000 sf

Existing Use: DAGS Kauai District Office Baseyard

State Land Use Designation: Urban

Lihue Development Plan Designation: Public Facility

Kauai Zoning Designation: R-1 / ST P

Flood Zone Designation: Zone X

Project Description: A two-phase project consisting of a 5,550 SF single story office building (Phase I) and two (2)-7,500 SF single story storage buildings, or a total of 15,000 SF (Phase II)

Summary of Impacts: Short term impacts will result from construction related activities, such as dust, noise, and traffic. However, these impacts will only last during the construction phase. Mitigation measures will be taken whenever possible to minimize these impacts. Use of the baseyard can continue during and after the completion of Phase I.

Long term environmental impacts resulting from the project are minimal. The existing air quality, noise, and traffic conditions will remain unchanged. Preliminary indications from the civil engineer show that locating a septic tank and leaching field within 1,000 feet from a county water well will not affect the water quality of the well. The geo-hydrologist's report attached in Appendix D confirms these findings. Excess run-off generated by the development will be contained within the premises by the use of a retention basin, thus avoiding changes in the existing ground drainage patterns.

The County baseyard will be given adequate time to seek alternative sites to park its heavy equipment. The structures which will be built on site are low single story buildings, which will fit with the character and ambience of the area.

**KAUAI ECONOMIC OPPORTUNITY BUILDING (PHASE I)
LIHUE MULTI-AGENCY STORAGE FACILITY (PHASE II)
Draft Environmental Assessment**

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CHAPTER 1

PROJECT DESCRIPTION

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

1.1 TECHNICAL CHARACTERISTICS

1.1.1 Existing Use of Site. The site is currently being used as the DAGS Kauai District Office baseyard. The western portion of the site near the County of Kauai's well site, at the junction of Haleko and Wehe Streets, has been empty since early 1989. (Exhibit 1: Existing Site Plan).

The northeastern part of the site is currently used by Kauai County for parking of heavy equipment for their baseyard, which adjoins the property along the northeastern boundary line. DAGS has permitted the County to use this portion of the site for almost ten years, at no charge. There is no formal agreement which covers this arrangement between DAGS and the County.

The construction of the KEO Building during Phase I will not displace any current site users. The construction of the Multi-Agency Facility during Phase II will displace the DAGS Kauai District Office baseyard as well as operations of the County of Kauai baseyard which uses a strip of land (290 feet by 45 feet or 13,000 square feet) to park the baseyard's heavy equipment.

1.1.2 Phase I: Kauai Economic Opportunity Inc. Building. Phase I of the project will be the construction of a single story 5,500 square foot office building and a 25-stall on-grade parking lot connected by a two-lane driveway to Wehe Road as shown in Exhibit 2: Phase I Site Plan. This building replaces the dilapidated structure which was used by the KEO as office spaces from 1969 to the early part of 1989. The agency had to vacate the old building when a wall collapsed, forcing them to evacuate the premises. Since 1989, the agency has been using leased office spaces.

This new office building will serve as the permanent offices for the administrative and office-related functions of the KEO as shown in Exhibit 3: KEO Building Floor Plan and Elevation. Other services and programs such as the group homes, child care, and others will continue to be provided at their current sites.

KEO Mission. Twenty five years ago Congress enacted the Economic Opportunity Act of 1964 establishing the community Action Program. Kauai Economic Opportunity, Incorporated ("KEO") was founded shortly thereafter as the community action program for the County of Kauai.

KEO, through its many community action programs, has provided and will continue to provide opportunities for the residents of Kauai, as well as private groups, professional organizations, religious entities, and governmental agencies, to work together to eradicate poverty on Kauai and thereby improve the entire community.

KEO Organization and Personnel. KEO has experienced steady growth for the past 25 years. Fifteen (15) full time KEO staff members are expected to be housed in this new KEO Building.

The Chief Executive Officer is the primary administrative officer of the Kauai Economic Opportunity, Inc. and serves at the pleasure of the KEO Board of Directors and has full professional freedom of operation as set by the governing Board. He/she is also responsible for all aspects of the KEO sponsored anti-poverty operations, and governmental relations. The Chief Executive Officer is assisted by the Fiscal Officer and Administrative Officer in the handling of the agency's administrative matters. The agency also has two Program Officers who are responsible for Child and Education Services and Community Services.

KEO Description of Services. Enumerated below are the programs and services provided by KEO which have assisted in the economic improvement of families and individuals in Kauai.

• **Family Development and Case Management.** This program provides a thorough assessment of the families or individuals requesting assistance and helps them attain goals towards independence. The program assists the families in planning towards relief from subsistence, refers and places participants in programs, services and refers them to resources.

• **Energy or the Weatherization Assistance Program** provides energy saving information and installs energy saving devices, such as heat pumps, heater blankets (insulation) and timers at no cost to eligible households.

• **Group Home, Pa'a Hana** is a home for developmentally disabled adults. Services include residential accommodations and a skill building program.

• **Group Home, Komohana** is a residential home for physically challenged adults.

• **Food Distribution** provides food surplus distributions at sites throughout the island approximately six times a year.

• **Aloha Bus** provides transportation for women and children needing obstetrical, gynecological and pediatric services.

• **Head Start** provides comprehensive early childhood program for children with an involved parental concept for eligible families.

• **Child Care** is a comprehensive early childhood program for eligible participants as well as private participants.

• **Family Child Care** provides an intensive training program for potential licensed in-home care givers for infants through school-aged children.

• **Language Arts Multi-Cultural Program** provides academic and social assistance for children experiencing difficulty in language arts.

• **Employment Training and Opportunities** provides information, referrals, education, educational supplies, employment supplies, and support services for those who need education, training, skill building, and supplies to obtain and or obtain employment.

• **Horticulture Program** is a training program for future horticulturists/farmers. The program operates a five acre tropical flowers farm and will be expanding to include vegetable farming.

• **Food Pantry** provides food supplied by the Food Bank of Hawaii for eligible individuals and families.

• **Homeless Services** include a CARE-A-VAN providing a mobile unit visiting many "homeless sites on Kauai providing medical services, food, clothing and other needed supplies. The program also assists eligible participants with security deposits and rent payments to prevent and alleviate homelessness.

• **Food Services** is the KEO Kitchen which provides USDA approved meal services for KEO programs such as Elderly Nutrition, Head Start, Child Care and several other private vendors.

- **Mediation** provides conflict resolution program to assist participants through a process in solving disagreements.
- **Shoppers** provides a shopping service for elderly and or those who are unable to shop for necessities (food, prescriptions, etc)
- **Gwenfread Allen Foundation** provides grants up to \$700 per elderly person for one-time needed items lost through Hurricane Iniki and or its effects.
- **911 Iniki.** In response to the devastation of the Hurricane Iniki, this project provides a multitude of programs which provide relief to the effects of the hurricane.

KEO Hours of Operation. The KEO office is open for business from 7:30 AM to 4:30 PM Monday through Friday. The agency's clients usually start arriving at around 8:30 AM to 3:30 PM, with an hour's average stay within the premises. Of the 25 parking stalls, 15 will be used by the staff and 10 allocated for visitor use.

The KEO 15-member Board of Directors will also be meeting at the KEO Offices once every other month and the meetings will most likely occur at night from 7:00 to 9:00 PM.

1.1.3 Phase II: Lihue Multi-Agency Storage Facility. There is a need to provide new storage facilities for the various agencies on Kauai. Areas at the basement of the State Office Building in Lihue are being used for storage purposes. Once storage space is available elsewhere, these spaces will be converted into much needed office spaces, which is in critical need within the civic center area.

The storage complex will also house a records storage facility which will contain primarily inactive files of several state agencies who have expressed a need for these spaces. The storage space will consist of compartments which will be assigned to the various agencies and will be under the agency's lock and key system. It is expected that all agencies will store those items which are of low frequency use.

The physical plant will consist of two single story structures of 7,500 square feet each, or a total of 15,000 square feet of storage space. (Exhibit 4: Phase II Site Plan).

This storage facility is not a branch of the State Archives Office. The storage spaces will be considered as part of the designated space for the agencies, albeit detached from the main office areas.

The storage requirements prepared by the respective agencies were estimated based on current record keeping policies. Projected storage requirements may change once HRS 92-F-18 (Public Reporting Law) goes into effect. The 1991 Supplement extends implementation from 1992 to 1993. Workshops will be conducted statewide to assure consistency in records retention/destruction policies for all state agencies. The impact on storage needs projections will only be known after 1993. The programmed spaces per agency will likely be refined prior to building design and will incorporate the impact of the Public Reporting Law.

Because of the anticipated changes brought about by HRS 92-F-18, there will be a definitive need for storage spaces for the agencies. Availability of storage spaces is needed to maintain office operations.

The following describes the agencies who have requested for storage spaces at the proposed facility. In fact, the size of the storage facility was based on the quantity if storage spaces

that were projected by each agency. The rationale provided by each agency for the storage space request are also provided.

The storage facility will house paper materials, specifically inactive files which require infrequent access. Except for some cleaning materials which will be used in the maintenance of the premises, the storage facility will not store chemicals and other hazardous or highly flammable materials.

Department of Accounting & General Services (DAGS). DAGS expects to increase their current 2610 cubic feet of inactive storage to 5220 cubic feet in 2005. This is the expected increase based on the agency's retention schedule. The schedule, however, was not provided.

Department of Education (DOE). The DOE District Office is the depository of all DOE files in Kauai which includes records of all schools; all personnel records for all inactive DOE employees; and all unaudited financial records such as purchase orders, financial records, inventory records, special education student files, etc. The DOE expects their current inactive file storage of 100 cubic feet to increase to 800 cubic feet in 2005.

Department of Labor and Industry (DLIR). The agency expects to increase their inactive file storage from the present 180 cubic feet to 1000 cubic feet in 2005. Apparently they generate about 40 cubic feet of case files yearly. Also, their worker's compensation files have a retention schedule of 50 years.

Department of Human Services (DHS), Family & Adult Services. The agency has 1762 cubic feet of storage space. Their storage needs are expected to grow by 326 cubic feet per year added on cumulatively or 6326 cubic feet in 2005. The agency's case records in inactive files consist of automatic shelving and in boxes. Permanent files total 489 cubic feet; regular files total 874 cubic feet; and boxed files total 400 square feet. These figures do not include circulation and access needs. Based on the previous years' rate of expansion of inactive files, the agency needs to store about 230 inactive file cartons per year, or 326 cubic feet annually. The agency's files need to be housed in secure facilities due to the confidential nature of the records. The inactive records need to be retained due to mandatory audit requirements which required storage of these files for several years, and some permanently.

Department of Human Services (DHS), Vocational Rehabilitation for the Blind. The agency requests for a 6' x 8' storage space (48 s.f.) to store excess tools, equipment, old records and supplies.

Department of Health (DOH). The department's District Health Office needs to retain its patient/client files, and the existing 215 cubic feet storage is expected to increase to 456 cubic feet in 2005. The center currently has limited space available for inactive case files, consequently, valuable floor space is used to store inactive files.

Lt. Governor's Office. The storage/work space requirement of Kauai is about 1,500 square feet. This is on the assumption that present voting procedures are still in effect. The office also requests for a covered space to be used intermittently for the inspection and maintenance of their equipment. Space requirements may be reduced if a computerized process proposed by the Lt. Governor's Office is implemented.

Department of Transportation (DOT), Highways Division. With the loss of the Division's 342 square feet of storage space, it will require three storage rooms with the following dimensions:

a) 90 square feet; b) 100 square feet of air conditioned space ; c) 300 square feet. No other data was provided to qualify the space need request.

Department of Taxation. The department requests 280 square feet of storage space, which equals their current storage facilities in Lihue.

The final allocation of storage space will be done when the facilities are completed. DAGS Kauai District Office will be the agency responsible for its maintenance and operation.

1.2 SOCIO-ECONOMIC CHARACTERISTICS

1.2.1 Kauai Economic Opportunity Inc. Over the last twenty five years KEO has worked to combat poverty on Kauai by mobilizing public and private resources and by developing, conducting and administering programs designed to assist the economically disadvantaged become self-sufficient, productive citizens. KEO has initiated many important human services programs in Kauai, and support facilities, such as permanent offices for its staff are critical maintaining these critical services.

As described fully in Chapter 3, agreements have been finalized between KEO and DAGS since 1984 allowing KEO the use of portions of the Wehe property for the agency office building. Funds have also been appropriated since 1987 by the Legislature for the design and construction of the building.

Both the land area and the funds are available to implement this project. Because of the delays, the agency is spending money to lease office space. Money spent on rental fees could be better used on socio-economic programs that would benefit the residents of Kauai

1.2.2 Multi-Agency Storage Facility. Areas at the basement of the State Office Building in Lihue are being used for storage purposes. Once the storage facility is completed, the basement areas will be converted into much needed office spaces, which is in critical need within the civic center area.

1.3 PHASING AND PROJECT COSTS

Phase I is in the architectural design phase at this time. The Construction bid documents will be ready in early 1994, and construction will be initiated once the necessary permits are granted by various government entities. Phase I is expected cost \$1.32 M. Construction time is projected to last eight months or 160 working days.

Phase II currently has no set schedule. The implementation of Phase II is contingent on the relocation of the DAGS District Office baseyard from the premises to a new location.

DAGS intends to request land acquisition, design and construction funding for its new baseyard in Fiscal Biennium 1995-97.

Therefore, the earliest possible time for the DAGS baseyard to relocate to another site and for the storage facility to be constructed on the Wehe site will be in 1997, assuming that the State Legislature appropriates sufficient monies for both projects in a timely manner, and that DAGS is not presented with too many hurdles which may paralyze the whole process. No cost estimates are available for Phase II.

1.4 SOURCES OF FUNDING

Project funding for Phase I has been appropriated by the State Legislature, with DAGS as the expending agency. Phase II will also be funded with monies appropriated by the State Legislature.

CHAPTER 2

PHYSICAL CHARACTERISTICS

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

2.1 PROPERTY DESCRIPTION, OWNERSHIP AND HISTORY

On April 4, 1983, the Hawaii Office of Economic Opportunity requested a lease of the site for the Kauai Economic Opportunity. At the time the request was made, KEO had been using, since 1969, an old building on the site for its offices. The KEO moved out of the premises in early 1989 since the building they were occupying was condemned, and was deemed unfit for occupancy.

Negotiations among DLNR-Kauai, DOH-Kauai, DAGS-Kauai, and KEO resulted in a "Gentleman's Agreement" to have the DAGS Baseyard site designated to DAGS by Executive Order, and have a joint occupancy agreement between DAGS, DOH and KEO. Thus, Executive Order 3258 was issued to DAGS on August 11, 1984. (Exhibits 5 and 6).

In 1986, DAGS conducted a site study whether the site could accommodate DAGS, DOH and KEO facilities. The study concluded that only DAGS and KEO's facilities could fit on the site.

In 1988, DAGS commissioned INK Architects to prepare a Project Development Report and Master Plan for the KEO Building, the DAGS Maintenance Facility (to replace the old baseyard), and a Multi-Agency Storage Facility. It was determined that the three functions can not be accommodated in the 1.928 acre site, and that the DAGS Maintenance Facility should be relocated to another site.

Concurrent to these developments, KEO and DAGS reached an agreement and documented in Exhibits 7 and 8 which allows DAGS to provide office spaces for KEO at the project site. In return, KEO had agreed to turn over to DAGS by October 30, 1989, its appropriations of \$50,000 for design and \$350,000 for construction. To assure KEO's tenure, the State will issue a 20-year lease for the office and appurtenant facilities.

2.2 TOPOGRAPHY

The site is relatively flat at 220 feet above sea level, except for steep slopes at the southeastern boundary running along Haleko Road. (Topographic Survey prepared July 1986).

2.3 SOIL CONDITIONS

The Soil Survey prepared by the U.S. Department of Agriculture, Soil Conservation Service dated August 1972 has categorized the soils in the Lihue area as Lihue-Puhi Association. The Lihue-Puhi Association is made up of well-drained, medium textured soils, having nearly level to steep slopes. The soils were developed from material weathered from basic igneous rock; they make up about 12 percent of the island.

A soil association is a landscape that has a distinctive proportional pattern of soils, and normally consists of one or more major soils and at least one minor soil, but is named for the major soils. The soils in one association may occur in another, but in a different pattern.

The Lihue soils make up about 40 percent of the association and the Puhi soils 35 percent.

The Lihue soils (LhB) have a surface layer of dusky red to dark reddish brown, firm to friable silty clay. The subsoil is dark-red to dark reddish-brown, firm silty clay. The substratum is soft, weathered basic igneous rock.

Puhi (PhB) soils have a surface layer of brown to very dark brown, friable silty clay loam. The sub soil is reddish brown to dark brown, friable silty clay loam and silty clay. The substratum

is soft, weathered basic igneous rock.

Both these soils are characterized to have a moderately rapid permeability, a low runoff, and a slight erosion hazard. They also have a moderate shrink swell potential which is common to many Hawaiian soils. Aside from these characteristics, the soil types have no other unusual conditions that would affect construction.

Soil borings of the site will be conducted to determine soil characteristics for design purposes. The soil tests will be done to determine:

- a) soil bearing capacity for the foundation design of the structure
- b) soil percolation rate for the design of the leaching field
- c) slope stability analysis for the design of the 150,000 gallon retention basin,

2.4 CLIMATE

Kauai may be described as having the ideal climate, with average temperatures near the coast at 69 F in February and March, and 78 F in August and September. Rainfall varies depending on the island location. Records of rainfall in the Lihue area show an annual median of about 50 inches. The rugged mountainous interior of the island has much more rainfall (with 444 inches at the summit of Waialeale) compared to the coastal areas where communities such as Lihue are located.

2.5 FLOOD PLAIN MANAGEMENT

The Federal Flood Insurance Rate Maps dated March 4, 1987 shows the site to be in Zone X. Zone X areas are described as areas being outside of the 500 year flood plain. The site is far from, and well above the Puali (Niumalu) Stream, Huleia Stream, and Nawiliwili Harbor. It is not in the path of any major floodway. (Exhibit 9).

2.6 TSUNAMI INUNDATION

Civil Defense Tsunami Evacuation Maps confirm the project site to be outside of the tsunami inundation area as indicated in the GTE Hawaiian Telephone Directory for Kauai dated June 1993-1994.

2.7 FLORA AND FAUNA

Flora. Most of the native (endemic) flora at the site were probably destroyed during the past decades as a result of intense sugar cane cultivation or human habitation. The flora has been replaced by the more aggressive introduced or non-native species that are known throughout many other tropical areas of the world. Many of these exotic or non-native plant species have since undergone further variations over the years due to the isolation of the islands.

There are no rare or endangered plant species at the site. No adverse effects of flora is anticipated.

Based on the topographical survey conducted on July 1, 1986 the plants/trees found on site were: banyan, java plum, monkey pod, xmas berry, african tulip, sea grape, octopus, monkey tree, plumeria, avocado, mango, norfolk, lemon, and palm. Most of these were destroyed by Hurricane Iniki.

The Landscape Master Plan shown in Exhibit 10 indicates the plants/trees which will be planted on the site.

Fauna. The *Lasiurus cinereus semotus* (Hawaiian bat), an endemic mammal which is listed as endangered on the Federal Register, is found in Kauai. No other known endemic or native mammals are found on the island, but a few apparently have since been introduced.

With the removal of forests near the vicinity of the site, native birds have retreated to remote mountainous native forests. To date, land areas below 2000 feet are void of native fauna because of the introduction of exotic birds, goats, horses, etc.

The site is away from suitable habitats, or forest preserves. There will be no adverse effects on fauna.

Unless stated otherwise, the data presented above were based on studies made of sites within the vicinity of the subject property, specifically the Site Selection Report and Environmental Statement for the Kauai Judiciary Complex dated June 1992.

2.8 HISTORIC BUILDINGS / ARCHAEOLOGICAL REMAINS

A review by the State Historic Preservation Division indicates the absence of known historic sites on the property. The project area has been developed for residential purposes, and it is highly unlikely that historic sites are present in this developed area.

CHAPTER 3

INFRASTRUCTURE AND UTILITIES

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

3.1 ACCESS AND ROADWAYS

The site is accessed off Wehe Road. Wehe Road intersects with Hala Road. The intersection is very close to the intersection of Hala Road and Haleko Road thus, almost forming a five-way intersection. The County of Kauai Department of Public Works (DPW) has expressed a concern that if the traffic load on Wehe Road increases, the intersection will pose some traffic problems.

The proposed KEO Building and the Multi-Agency Storage Facility are expected to generate low-volume traffic for Wehe Road. Therefore, no intersection or roadway improvements are being proposed except for the construction of a new driveway connection from Wehe Road to the proposed parking lot in Phase I.

During the time KEO was using the premises for their offices (1969 to 1989), no traffic-related problems were observed.

3.2 WATER

The Lihue area is served by the Kauai County Department of Water. The 8-inch water line along Wehe Road is adequate to serve the proposed KEO Building. The existing water lines and water meters are planned to be used, and no major changes are expected. Additional charges for water source and storage development may be required.

An additional fire hydrant may be required and will be determined during the design phase of the project.

Phase II improvements are not expected to increase the water demand.

3.3 WASTEWATER

Lihue is served by a municipal sewage treatment plant. However, there are no sewer lines in the immediate vicinity of the site. The closest County line is on Haleko Street near Rice Street. The sewage pumping station that pumps sewage from this line is at capacity and will need to be upgraded to serve any new facility in the vicinity of the proposed facility.

The Lihue waste water treatment plant is also at capacity and is planned to be expanded within a few years. At this time, the project site could be added to the new area to served by the expansion. The newer developments by Grove Farm, such as Ulu Kou and Ulu Mahi have dry sewers or are connected to the Kukui Grove waste water treatment plant, a private plant owned by Grove Farm, with no obligations to connect other users outside of their development.

A septic tank and leaching field is proposed to dispose of the small sewage flows to be generated by both phases of the project. Based on a population of 20 people and a sewage demand of 15 gallons per capita per day, the septic tank should have a minimum capacity of 300 gallons. The area required for a leach field is 1050 square feet based on an estimated percolation rate of 2 inches per hour. A proper soils test will be conducted to verify the actual percolation rate. The area required can be achieved by constructing three 3-foot wide leaching trenches that are 30 feet long spaced at eight feet on center.

However, the site is less than 1000 feet to an existing water well. The State Department of Health (DOH) Sanitary Branch have indicated that they may allow the installation of a septic tank and leaching field on the site. The County's Department of Water and the State's

DOH Clean Water Branch will require a geo-hydrologist's report to certify that the existing water well will not be affected by the leaching field before they approve the use of a leach field within 1000 feet of an existing water well.

The basic well information has been evaluated by a geo-hydrologist and is attached in Appendix D. According to the study, grouting (sealing of the annular space between the outer diameter of the boring and the casing with cement) extends from the surface to depth of 160 feet, followed by rock packing.

The proposed project will be connected to the Lihue WWTP in the future when the County implements the sewerage improvements to this area.

3.4 GROUND DRAINAGE

The proposed Phase I improvements will increase the impervious area of the site from 0.66 acres to 0.95 acre. Improvements for Phase II will increase the impervious area from 0.95 acre to 1.29 acres. It is estimated that this will increase the runoff from the site by a minimum of approximately 0.12 acre-feet or 39,000 gallons in Phase I, and 0.23 acre-feet or 74,000 gallons in Phase II. This will require the site to be graded to drain into a small retention basin. The basin should have a minimum storage of 0.23 acre-feet and an additional 0.23 acre feet for peak flow reduction for Phase II. Therefore, an approximate storage capacity of 0.46 acre-feet or 149,900 gallons is recommended in Phase II.

The site is be able to accommodate a 3-foot deep retention basin with a capacity of more than 150,000 gallons. The retention basin is essentially a 3-foot deep hole in the ground. The intent is to collect run-off in this basin and allow water to maintain existing drainage flows.

3.5 SOLID WASTE

Refuse collection will be undertaken by a privately-owned company. Contracts are solicited on a yearly basis. At the present time, the premises are serviced by the BFI Refuse Company. (Based on a telephone conversation with Stanley Doi of the DAGS Kauai District Office).

3.6 ELECTRICAL SERVICE AND TELEPHONE SYSTEMS

Electric power is expected to be provided by Kauai Electric Company, and telephone services by Hawaiian Telephone Company.

(Note: Except when noted, the data contained in this chapter was based on the "Infrastructure Report" prepared by R.M. Towill which is attached as Appendix C.)

CHAPTER 4

PUBLIC FACILITIES AND PLANNING POLICIES

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

4.1 PUBLIC BUILDINGS

Most of the public buildings are located in the downtown Lihue Area on Umi Street, and is roughly less than a mile from the site. (Exhibit 11: Project Location Map).

4.2 PARKS AND RECREATION

There are many parks in the Lihue area where residents and residents can pursue varied recreational activities. In fact, the parcel of State-owned land across from Wehe Road is parkland suitable for both passive and active recreational pursuits.

The State-run public library, other indoor events held at the Kauai Memorial Stadium and outdoor events at the Lihue Sports Stadium, offer alternatives to outdoor recreation activities.

4.3 POLICE PROTECTION

The project will be served by the main police station located directly across the present courthouse building in downtown Lihue on Umi Street. Uniformed officers working three shifts daily are assigned to patrol Lihue and the surrounding areas.

4.4 SCHOOLS

Schools near the project site include Kauai High School and Wilcox Elementary School. The Kauai Community College is located southwest of Lihue in the nearby town of Puhi.

4.5 EMERGENCY MEDICAL SERVICES

Wilcox Memorial Hospital is a short distance from downtown Lihue. The other hospitals are the Kauai Veterans Hospital and the Samuel Mahelona Hospital. Together they provide 117 acute care beds. In addition Kauai County also has 164 beds in long term or specialty care.

4.6 FIRE PROTECTION

Fire protection for the proposed project will be provided by the Lihue Fire Station located on Rice Street.

4.7 PLANNING POLICIES AND REGULATIONS

Federal Government. No Federal plans or management programs are directly applicable to the proposed project.

State of Hawaii. The State Land Use Plan designates the project for urban use.

County of Kauai. The Lihue Development Plan designates the site for public facilities. The site is zoned R-1/ST-P. An R-1 designation implies that one dwelling unit can be built per acre. ST-P designation describes the site as used for public facilities.

The project site has the tax map key TMK: 3 - 8 - 05 : 01. (Exhibit 12).

CHAPTER 5

SUMMARY OF MAJOR IMPACTS

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

INTRODUCTION. Developing the proposed project will result in two general impact categories, the short term construction related impacts and the long term impacts generated from the operation of the proposed facilities. These impacts are summarized below:

5.1 TRAFFIC

Short term construction related impacts will involve construction vehicle traffic disrupting the existing traffic flow. Mitigation measures will be taken to minimize traffic activity caused during construction phase. Hours devoted to construction activity will comply with existing traffic standards to minimize disruption during peak periods.

No long term traffic impact is expected. Both the KEO Building and the Multi-Agency Storage Facility are low traffic generators. When the KEO was housed at the proposed site between 1969 to 1989, no traffic problems were generated by the agency's presence in this location.

If necessary, appropriate traffic signs will be installed to appraise motorists of simultaneous conflicting turns which may occur due to the formation of a five-way intersection created by Wehe Road, Hala Road and Haleko Road.

5.2 NOISE

During the course of the construction, noise levels will exceed the acceptable noise standards. Mitigation measures to minimize noise will be used wherever possible. Construction hours will conform to existing noise standards to reduce high noise impacts.

The noise level surrounding the project will increase slightly due to the use of air conditioning equipment and increased activity. But the levels of noise generated is not significant to cause problems to the surrounding neighborhood.

5.3 AIR QUALITY

Since both the KEO and the storage facility are low traffic generators, vehicular emissions will be negligible. Also, the functions to be housed on site is not expected to generate particulate or toxic emissions.

5.4 WATER QUALITY

The impact on water quality is described in the geo-hydrologist's study which will be attached as Appendix D of the final report. The study will provide more specifics regarding the water well which is adjacent to the project site and is within 1000 feet from the project's septic tank and leaching field. The data to be provided includes the name of the well, the State well number, well construction details, and site topography.

The study will discuss the impact on the potable water well, due to the presence of a septic tank system near a storm water retention basin on the adjoining site. It will also identify whether it is necessary for the Kauai's Department of Water to require more routine monitoring to insure that the public is adequately protected.

5.5 SURFACE DRAINAGE AND SOIL EROSION

Changes to the existing ground drainage patterns will be minimized by the use of a retention basin which will be designed to accommodate 150,000 gallons of excess run-off. DAGS will try to schedule grubbing and grading activities during the low rainfall months from April to October. Bare areas after construction will be covered by necessary landscaping. The new plantings will be provided with the required soil amendments, fertilizers, and adequately watered to be established. The entire steep slope along Haleko Road will be vegetated to prevent erosion and potential structural failure. The vegetation will reduce erosion of that area and sediment pollution on Nawiliwili Stream.

A slope stability analysis will be conducted as part of the soils studies to ensure that no structural failure will occur.

The retention basin will be maintained regularly by DAGS Kauai District Office. Maintenance of vegetation on the steep slopes along Haleko Road will be coordinated with the Kauai County Department of Public Works

Areas not used for parking or driveways will be planted with vegetation, and if feasible, gravel and porous pavement will be used to minimize the impervious acreage.

5.6 DISRUPTION TO COUNTY BASEYARD FUNCTION

No disruption to the County baseyard functions will occur since the State has given the County adequate time to seek alternative parking sites for its heavy equipment. The County has been informed of the State's plans to develop the strip of land used by the County since early 1993. Development of that strip of land is not expected to occur until 1997 or beyond. Thus, the County will probably have at least five years to seek alternatives. This time frame provides the County ample time to avoid disruption to its baseyard functions.

5.7 VISUAL AND AESTHETIC IMPACTS

The proposed structures are all one-story in height, and will replace the single-story structures which used to be, or are still existing on site. The architects chose architectural features which blend with the ambience of the locality. See Exhibit 3 for KEO Building's front elevation.

5.8 SOCIAL IMPACT

KEO, through its various community programs, has provided and will continue to provide opportunities for the residents of Kauai to work together to alleviate poverty in the County and to improve the entire community. The agency can better serve the community if it has its own permanent headquarters instead of moving from one leased space to another. Resources, both financial as well as staff time, is better used in direct services to the community through its programs, rather than used in paying rent or using staff time to move in and out of rented offices.

The construction of the multi-agency storage facility will provide storage space for inactive files that are now crowding State offices. The spaces vacated could be used more productively as workspaces for employees.

CHAPTER 6

CONCLUSION

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

6.1 ALTERNATIVES CONSIDERED

No Action Alternative. A no action alternative would present unnecessary hardship to KEO. Since land area and funding are available to build the KEO Building, rental fees spent by the agency to lease office spaces could be used to support their various programs to improve the socio-economic well-being of the residents of Kauai.

The Kauai-based State offices also need additional storage spaces in the Lihue area. Constructing a multi-agency storage facility on this state-owned land offers a logical solution to free-up valuable office spaces at the Civic Center area.

Phase I Only Alternative. The functions of the DAGS District Office baseyard is expected to grow in the future, thus creating the need for DAGS to make provisions to replace this baseyard with a larger maintenance facility at another site.

The land area vacated by the baseyard is best utilized by the construction of a multi-agency storage facility as explained above.

Alternative Allowing County to Use Portion of Property. Since the county has expressed the need to retain use of the northeastern portion of the lot to park the county's heavy equipment, alternatives were explored in siting Phase II buildings to allow county use of that strip of land. This is shown in Exhibit 13. This alternative would require DAGS Planning Branch to request DLNR for use of the park area across Wehe Street to site a retention basin to collect some of the excess run-off from the proposed project.

Constructing a retention basin (a 3-foot deep grassed hole in the ground) at the park land may detract from the public's use of this recreational area. Constructing a shallower retention basin may mitigate this problem, but it still requires DAGS to seek permission from another State agency for the use of the park land.

DAGS Planning Branch, the agency responsible for the master planning phase, decided to confine the ground drainage elements of the project within the boundaries of the site. This made it necessary to use the strip of land that is now used by the County to park heavy equipment.

Other Locations for Phase I and Phase II. No other locations were identified to site the proposed structures. No funds were available to conduct a site selection study nor to acquire other properties.

Proposed Action Alternative. The proposed action will involve the use of state-owned property designated for DAGS use and control, thus allowing the timely construction of both phases of the project.

6.2 REASONS FOR NEGATIVE DECLARATION

Mitigation Measures. Mitigation measures will be taken to minimize construction related impacts such as dust, noise and traffic. Dust screens and frequent watering will be used to reduce air-borne particulates. Specific construction hours and construction management plans will be implemented to minimize excessive noise and reduce traffic impacts. Although construction related impacts are generally unavoidable, mitigation measures will be taken whenever possible. All construction will comply with federal, State and County regulations.

Long term impacts resulting from the project primarily involve the location of a septic tank and leaching field within 1,000 feet of a county water well. However, preliminary indications from the civil engineer show that this will not affect the water quality of the well. A geohydrologist's report confirming these findings will be included in the final EA.

Excess ground drainage run-off will be created from the development. This will be mitigated by the use of a 3-foot deep retention basin at the southeastern portion of the site. Existing drainage patterns will be maintained, since excessive run-off will be contained in the retention basin, allowing ground drainage to occur more slowly.

The Kauai County Public Works Department has been informed since early 1993 of the State's intent to use the strip of property currently used by the county to park its heavy equipment. The County is being provided with adequate time to seek alternatives for its parking requirements. (Exhibit 14 and 15)

Reasons for Determination. Under Chapter 343, H.R.S. and Section 11-200-12 Administrative Rules, it has been determined that the KEO Building and Lihue Multi-Agency Storage Facility project will not incur or significantly impact the environment. Therefore it has been determined that a negative declaration will be filed.

The findings and reasons supporting the determination are as follows:

- The proposed project will not involve an irrevocable commitment to loss or destruction to any natural or cultural resource.
- The proposed project will not be located in any environmentally sensitive area, such as flood plain, tsunami zone, erosion prone area, geologically hazardous land, fresh water, or coastal waters.
- The proposed project will not substantially affect rare, threatened or endangered species of flora, fauna or habitat.
- The proposed project will not curtail the range of beneficial uses of the environment.
- The proposed project will not involve a substantial degradation of environmental quality.
- The proposed project will not detrimentally affect air or water quality. Noise from construction will only have short term impact.
- The proposed project will have a positive impact on the delivery of human services in the county. It will not have a negative impact on the economic or social welfare of the community.
- The proposed projects will not involve substantial secondary impacts, such as population changes or effects on public facilities.

APPENDIX A

COMPILATION OF EXHIBITS

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

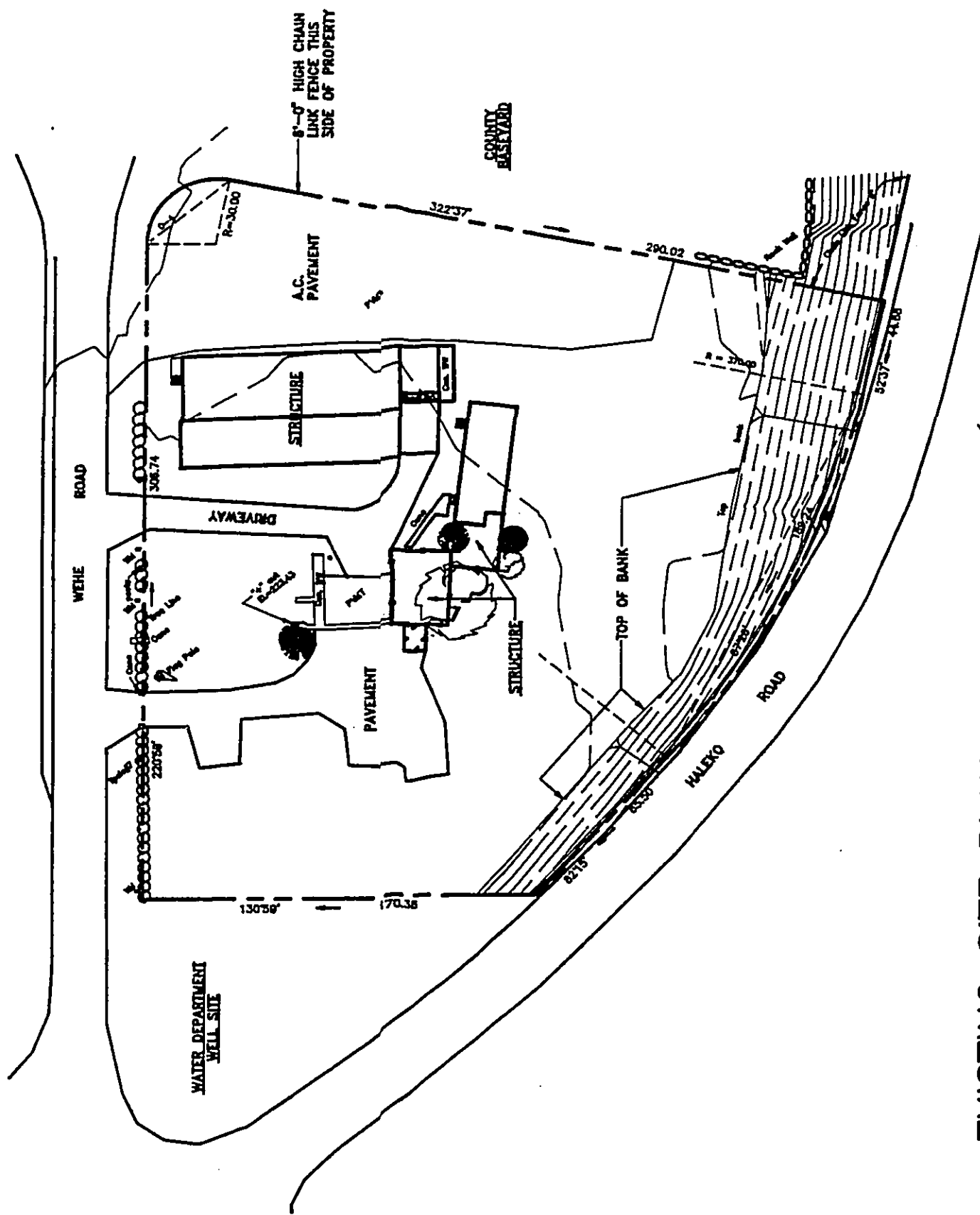
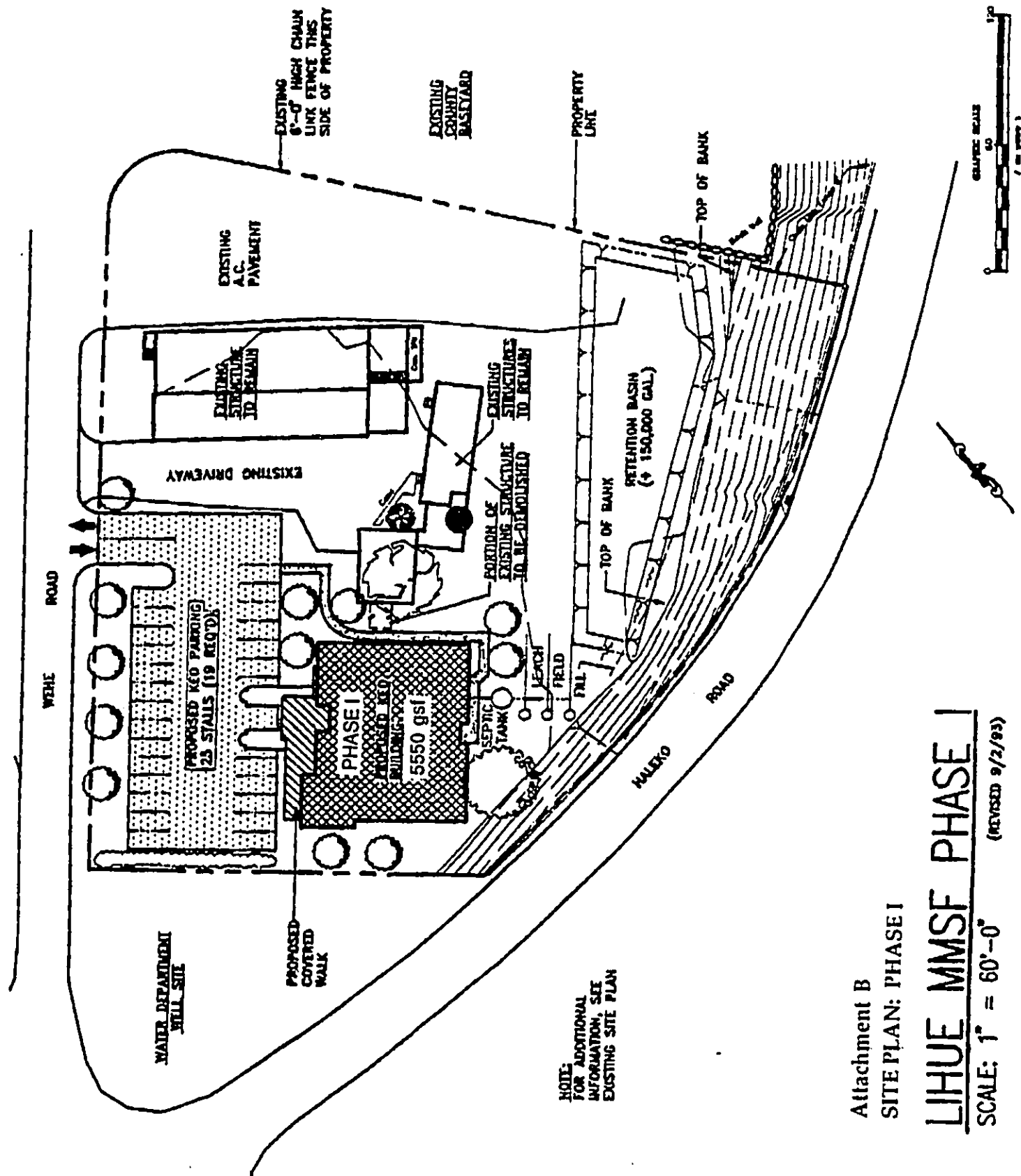


Exhibit 1

Existing Site Plan

EXISTING SITE PLAN
 SCALE: 1" = 60'-0"



NOTE:
FOR ADDITIONAL
INFORMATION, SEE
EXISTING SITE PLAN

Attachment B
SITE PLAN: PHASE I

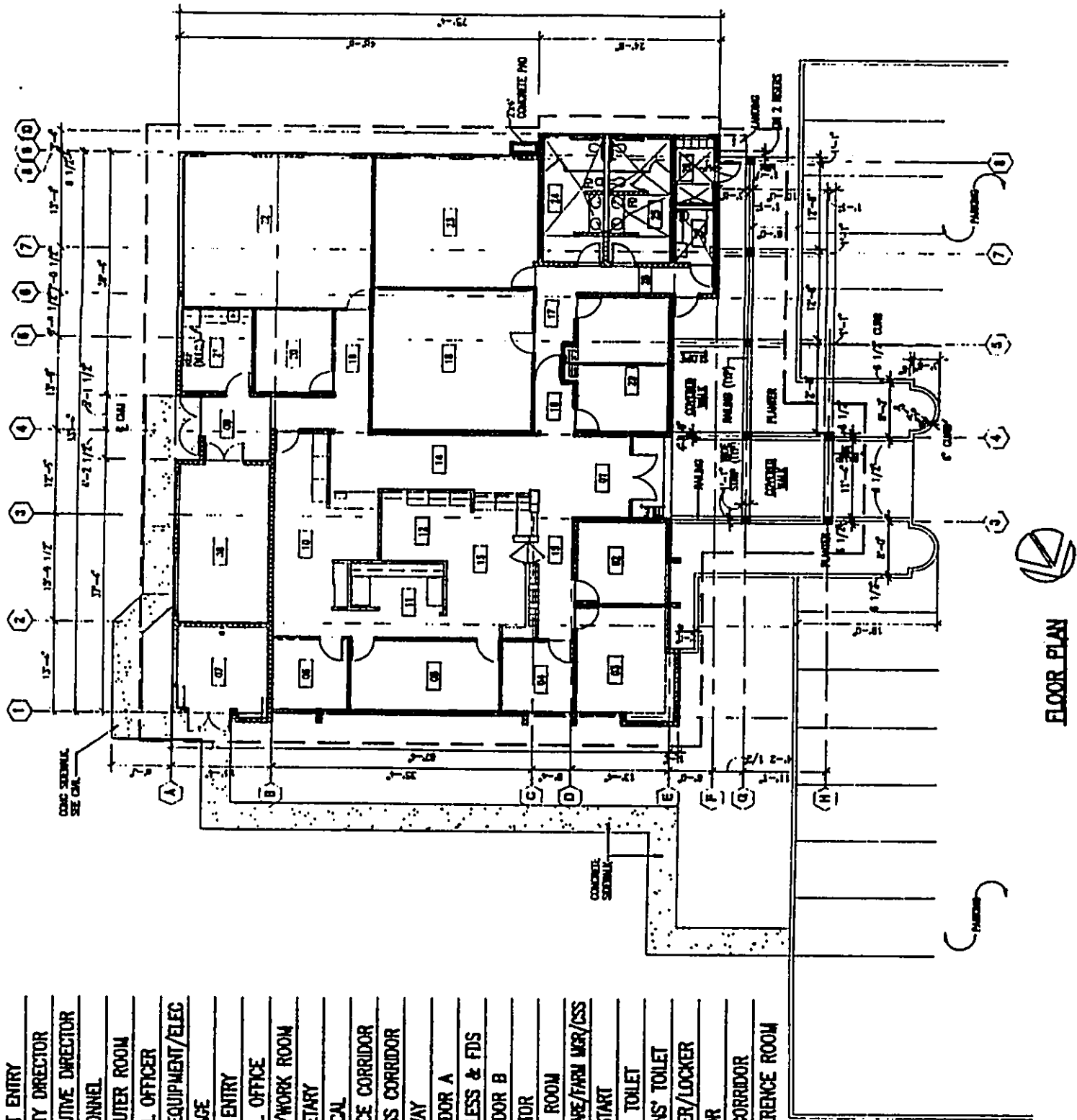
LIHUE MMSF PHASE I

SCALE: 1" = 60'-0" (REVISED 9/2/93)

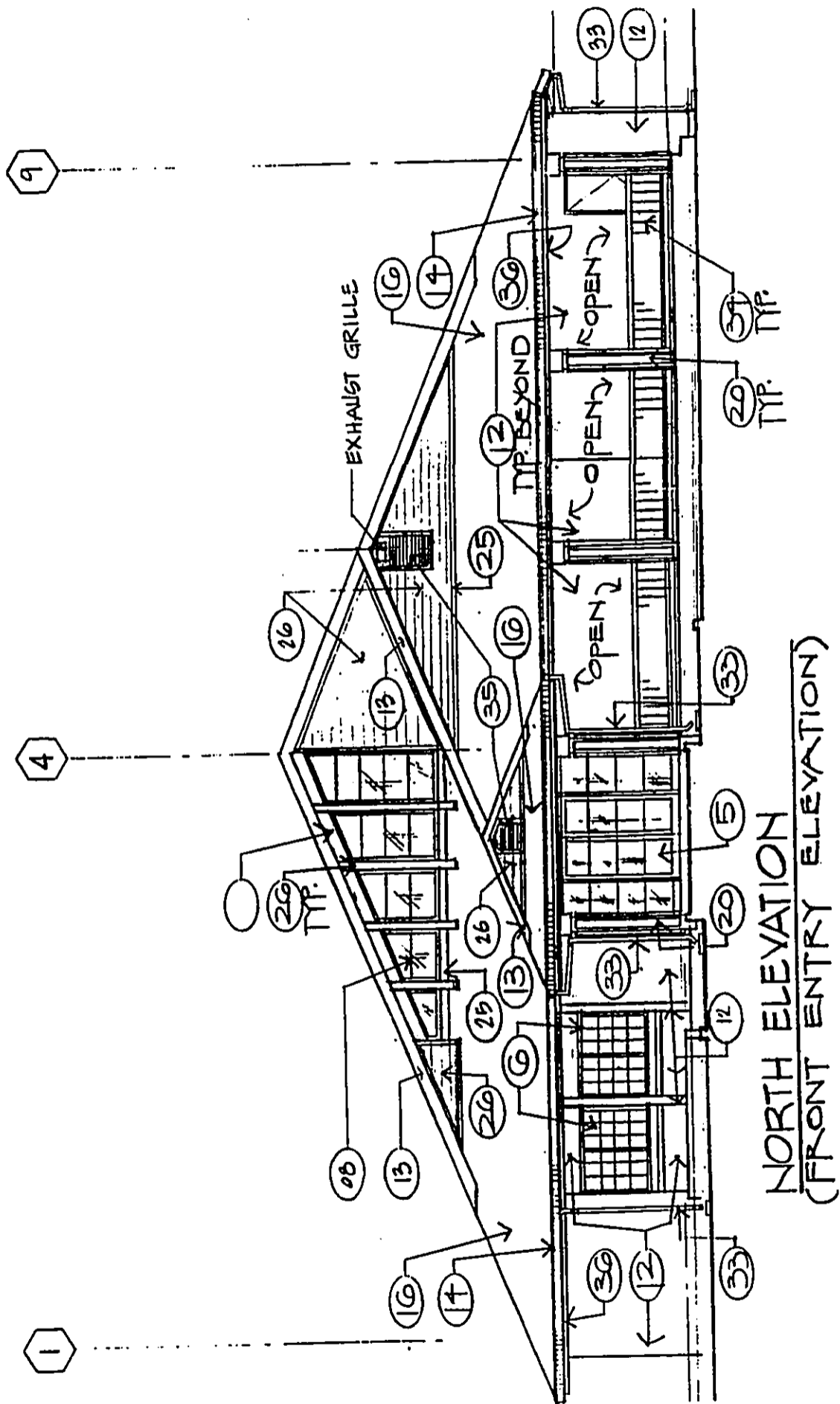


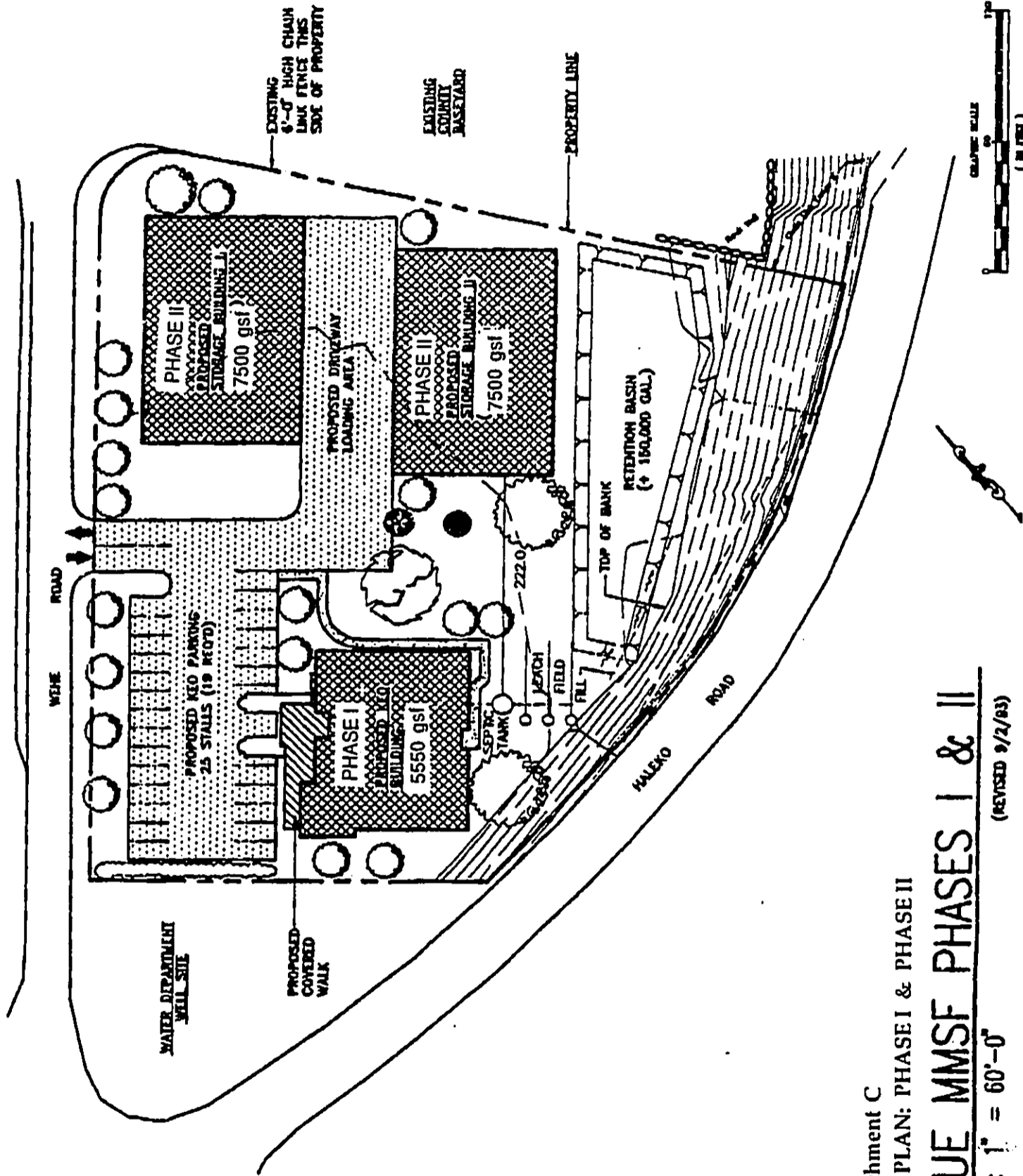
ROOM SCHEDULE

01	FRONT ENTRY
02	DEPUTY DIRECTOR
03	EXECUTIVE DIRECTOR
04	PERSONNEL
05	COMPUTER ROOM
06	FISCAL OFFICER
07	A/C EQUIPMENT/ELEC
08	STORAGE
09	REAR ENTRY
10	FISCAL OFFICE
11	COPY/WORK ROOM
12	SECRETARY
13	CLERICAL
14	SERVICE CORRIDOR
15	ACCESS CORRIDOR
16	HALLWAY
17	CORRIDOR A
18	HOMELESS & FDS
19	CORRIDOR B
20	MEDIATOR
21	STAFF ROOM
22	CHILD CARE/FARM MGR/CSS
23	HEADSTART
24	MENS' TOILET
25	WOMENS' TOILET
26	SHOWER/LOCKER
27	JANITOR
28	EXIT CORRIDOR
29	CONFERENCE ROOM



FLOOR PLAN





Attachment C
 SITE PLAN: PHASE I & PHASE II
LIHUE MMSF PHASES I & II
 SCALE: 1" = 60'-0"
 (REVISED 9/2/83)

04/29/87
Rev. 05/08/87

DAGS LIHUE MULTI-AGENCY
MAINTENANCE AND SERVICE COMPLEX
PROPOSED PLAN

A. Background

During 1975 and 1976, DAGS and DLNR did the masterplanning for the former Lihue Grammar School site. The State Forester agreed to set aside the 1.59 acres outlined in green on the attached map for the DAGS Multi-Agency Facility. Due to the expense and time required to obtain an executive order (E.O.) for the site, it was agreed that a revocable permit (R.P.) would be issued. The effective date for R.P. S-5489 was August 15, 1977. However, it was issued on October 18, 1982.

Facilities on the master plan included:

Plant Industry Field Office and Greenhouse (DOA)
Vector Control Unit (DOH)
Record Storage Facility (DAGS)
Multi-Storage Facility (DAGS)
Building Maintenance Shop (DAGS)

On October 6, 1982, DOH requested land for their Vector Control Facility and DAGS offered DOH a part of R.P. S-5489. DOH thought the site offered was across Wehe Road where the DAGS baseyard is located. In the December 16, 1982 letter to DOH, DAGS explained the mix-up on the sites and offered a part of the baseyard site outlined in red on the attached map if a joint occupancy arrangement could be agreed upon.

On April 4, 1983, the Hawaii Office of Economic Opportunity requested a lease for the Kauai Economic Opportunity (KEO) on the baseyard site where the KEO is currently located. Negotiations among DLNR-Kauai, DOH-Kauai, DAGS-Kauai, and KEO resulted in a "Gentlemen's Agreement" to have the DAGS baseyard site E.O.'d to DAGS with a joint occupancy agreement between DAGS, DOH, and KEO. Thus, E.O. 3258 was issued to DAGS on August 11, 1984. The northeastern part of the E.O. 3258 is currently being used through a permit by Kauai County as parking for their baseyard.

DAGS constructed the DOA Plant Industry Facility on R.P. S-5489 in 1984, requested an E.O. for the R.P. S-5489 site on October 18, 1985 and initiated design in 1986 for

the DOH Vector Control Facility on the R.P. S-5489 site. In September 1986, DLNR denied our request for an E.O. and essentially revoked R.P. S-5489, except for the DOA Plant Industry Facility because the site was required for DLNR's facilities.

In response to this denial, DAGS conducted a site study of the E.O. 3258 site to determine if DAGS, DOH, and KEO facilities would fit on the site. The study concluded that only DAGS and KEO's facilities could fit on the site.

In November 1986, DAGS met with DLNR Land Management and Forestry staff and agreed that DAGS would conduct a site analysis to determine if the DOH Vector Control Facility and DLNR's facilities could be located on the R.P. S-5489 site.

On April 7, 1987, a site master plan which shows that DOH and DLNR can be adequately sited on R.P. S-5489 was sent to DLNR for their review and approval.

B. Current Status:

We are waiting for DLNR's approval to have the DOH Vector Control Facility constructed on the R.P. S-5489 site. If approval is received, we can have our consultant, Roy Sako, commence with the Project Development Report for the Lihue Maintenance and Service Facility at the E.O. 3258 site. Funding for this study is available from Advance Planning Statewide B85-646M-20, 300/85 K-8:

Consultant	\$30,000
Staff	<u>5,000</u>
Total	\$35,000

Preliminary indications from Land Management and Forestry and Wildlife are that approval will be given. However, if DLNR disapproves of siting DOH Vector Control on the R.P. S-5489 site, use and occupancy at E.O. 3258 must be reevaluated.

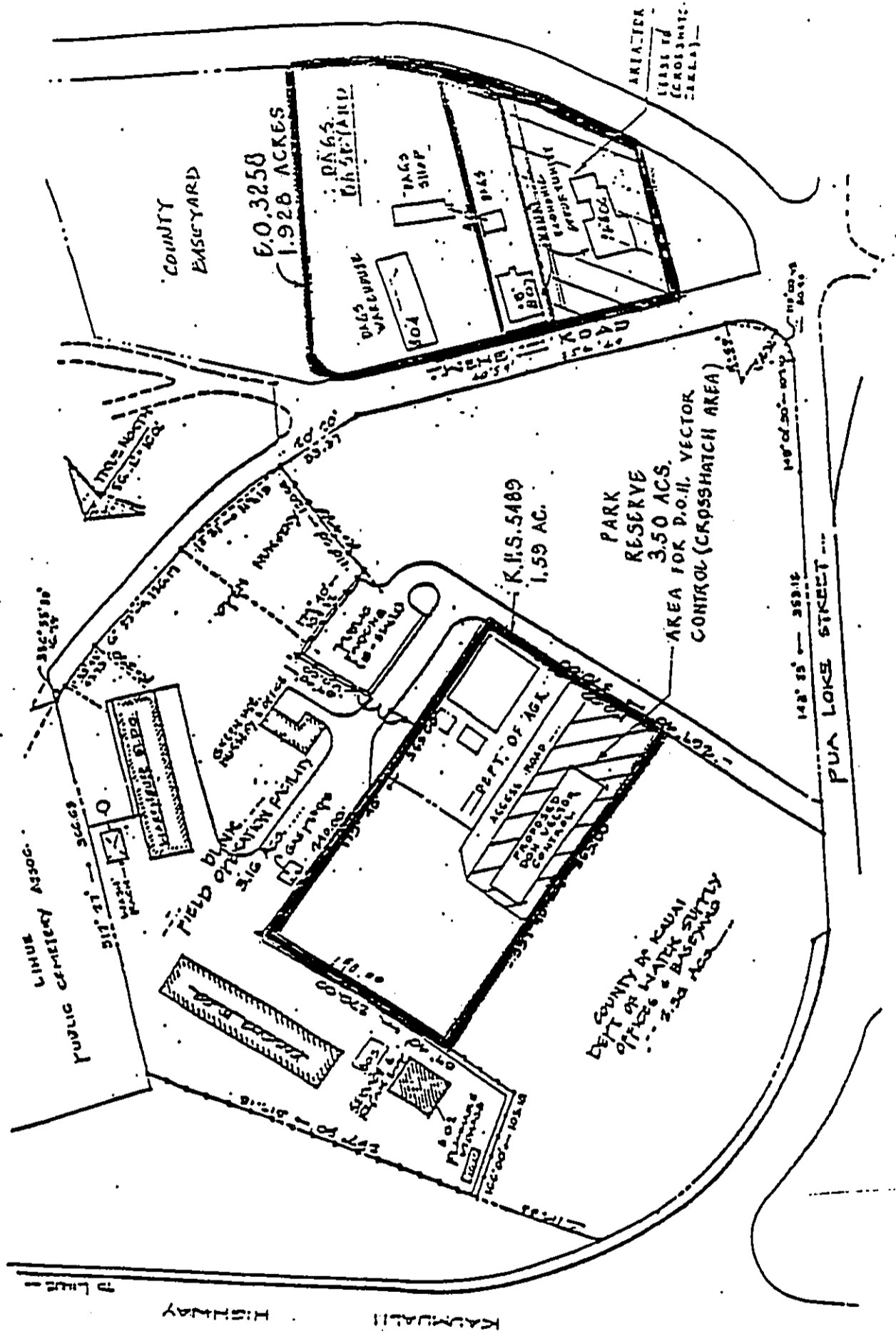
C. Proposed Plans

1. Commence with the PDR for the Lihue Maintenance and Service Facility.
2. Master plan the site after the PDR is prepared and DLNR approves siting of the DOH facility on the R.P. site.

DAGS LIHUE FACILITY
PROPOSED PLAN

Page 3

3. Design the first increment facilities in FY 1987-88 after the master plan is adopted. Design funds of \$142,000 become available on July 1, 1987.
4. Request construction funds in FY 1989-90 for the first increment.



PLAN OF E.O. 3258 AND R.P. S-5489

Executive Order No. 3258

Setting Aside Land for Public Purposes

By this Executive Order, I, the undersigned, Governor of the State of Hawaii, by virtue of the authority in me vested by Section 171-11, Hawaii Revised Statutes, and every other authority me hereunto enabling, do hereby order that the public land hereinafter described be, and the same is, hereby set aside for the following public purposes:

FOR A MULTI-AGENCY COMPLEX SITE, to be under the control and management of the Department of Accounting and General Services, State of Hawaii, containing an area of 1.928 acres, situate at Nawiliwili, Lihue (Puna), Kauai, Hawaii, the real property being more particularly described in Exhibit "A" and delineated on Exhibit "B", both of which are attached hereto and made parts hereof, said exhibits being, respectively, a survey description and a survey map prepared by the Survey Division, Department of Accounting and General Services, State of Hawaii, both being designated C.S.F. No. 20,000 and dated June 21, 1984.

SUBJECT to disapproval by the Legislature by two-thirds vote of either the Senate or the House of Representatives or by majority vote of both, in any regular or special session next following the date of this Executive Order.

In Witness Whereof, I have hereunto set my hand and caused the Great Seal of the State of Hawaii to be affixed.
Done at the Capitol at Honolulu this 11th day of August, Nineteen Hundred and 84.


Governor of the State of Hawaii

Approved as to form:


Deputy Attorney General



STATE OF HAWAII
SURVEY DIVISION
DEPT. OF ACCOUNTING AND GENERAL SERVICES
HONOLULU

C.S.F. No. 20,000

June 21, 1984

MULTI-AGENCY COMPLEX SITE

Nawiliwili, Lihue (Puna), Kauai, Hawaii.

Being a portion of Grant 188, Apana 1 to W. L. Lee (within the Ahupuaa of Nawiliwili covered by R.P. 4478, L.C.Aw. 7713, Apana 2, Part 2 to V. Kamamalu) conveyed by the following deeds:-

- (a) Lihue Plantation Company, Limited to Board of Education dated September 6, 1881 and recorded in Liber 71, Page 229 (Land Office Deed 1450).
- (b) Waiahi Electric Company to the Territory of Hawaii dated September 20, 1920 and recorded in Liber 577, Pages 11-16 (Land Office Deed 1971).
- (c) Lihue Plantation Company, Limited to County of Kauai dated April 15, 1915 and recorded in Liber 410, Page 466 (Land Office Deed 2705).

Being also a portion of the Former Lihue Grammar School Lot.

Beginning at the west corner of this parcel of land, the north corner of County of Kauai Well Site, Governor's Executive Order 2880 and on the southeast side of Waha Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "KILOHANA" being 8257.44 feet South and 19,184.92 feet East, thence running by azimuths measured clockwise from True South:-

1. 220° 59' 306.74 feet along the southeast side of Waha Road;
2. Thence along County of Kauai Baseyard, Governor's Executive Order 2739 on a curve to the right with a radius of 30.00 feet, the chord azimuth and distance being: 271° 48' 46.51 feet;
3. 322° 37' 290.02 feet along County of Kauai Baseyard, Governor's Executive Order 2739;

EXHIBIT "A"

-1-

June 21, 1984

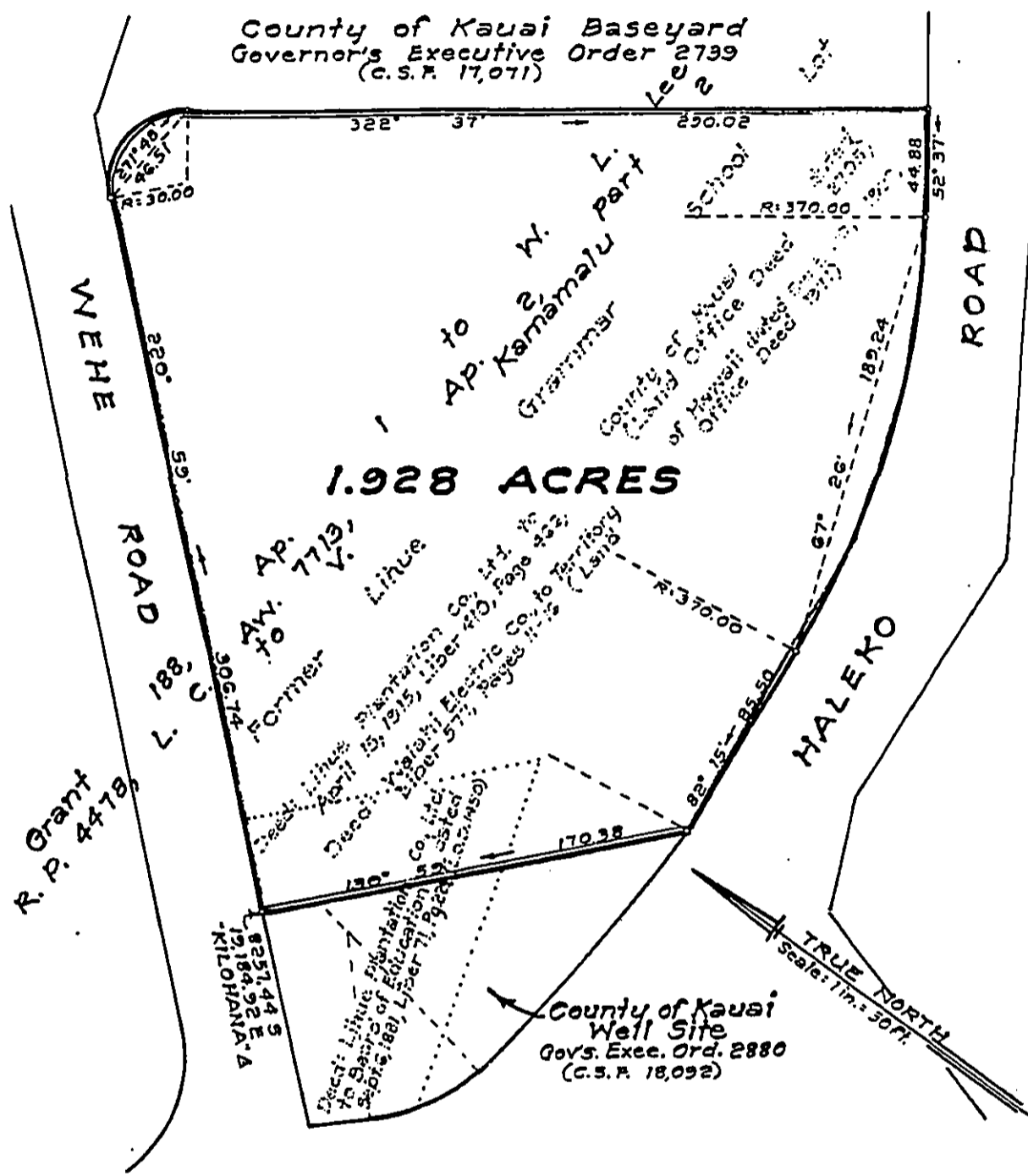
4. 52° 37' 44.88 feet along the northwest side of Haleko Road;
5. Thence along the northwest side of Haleko Road on a curve to the right with a radius of 370.00 feet, the chord azimuth and distance being:
67° 26' 189.24 feet;
6. 82° 15' 85.50 feet along the north side of Haleko Road;
7. 130° 59' 170.38 feet along County of Kauai Well Site, Governor's Executive Order 2880 to the point of beginning and containing an AREA OF 1.928 ACRES.

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

By: Robert T. Hashimoto
Robert T. Hashimoto
Land Surveyor

pt

Compiled from Govt.
Survey Records.



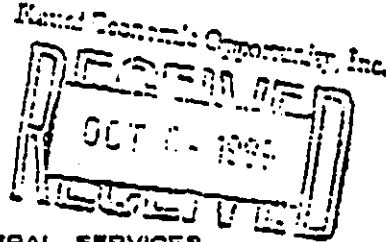
MULTI-AGENCY COMPLEX SITE
Nawiliwili, Lihue (Puna), Kauai, Hawaii
Scale: 1 inch = 50 feet

JOB K-9(84)	EXHIBIT "B"
C.BK 20 (Hashimoto)	
TAX MAP 5-8-05	SURVEY DIVISION
C. S. F. No. 20,000	DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
	STATE OF HAWAII
	R.T.H. June 21, 1984

JOHN WAIHEE
GOVERNOR



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



RUSSEL S. NAGATA
COMPTROLLER

JAMES H. YASUDA
DEPUTY COMPTROLLER

LETTER NO. (P)1975.9

OCT 5 1989

Mr. Roy Nishida
Executive Director
Kauai Economic Opportunity, Inc.
P. O. Box 1027
Lihue, Kauai, Hawaii 96766

Dear Mr. Nishida:

Subject: E.O. No. 3258, Lihue MMSF
DAGS Job No. 14-10-0788

This letter is to confirm the agreement reached in our May 15, 1989 meeting on providing Kauai Economic Opportunity, Inc. (KEO) office space in the subject facility. The following comments cover our discussion:

1. KEO agrees to delegate its appropriations of \$50,000 for design and \$350,000 for construction to DAGS by October 30, 1989.
2. DAGS agrees to provide KEO with 4,000 sf of administrative office space in the Lihue Multi-Agency Maintenance and Service Facility (MMSF).
3. DAGS will provide custodial services for KEO.
4. To assure KEO's tenure, the State will issue a 20-year lease for the office and appurtenant facilities.

The foregoing agreement is based on the following facts:

1. Board of Land and Natural Resources' December 16, 1983 recommendation for E.O. No. 3258 specifies that KEO shall be accommodated on TMK 3-8-05: portion 1.
2. KEO construction funds are not adequate to:
 - a. Construct a 4,000 sf office building and parking lot.

Mr. Roy Nishida
Page 2

Ltr. No. (P)1975.9

- b. Construct the off-site improvements required to support a new facility on the subject site (i.e. sewer force main ~~main~~ and storm drainage system). ~~27~~
3. DAGS has no construction funding to date.
4. Separately, neither DAGS nor KEO has adequate planning and design funding. By combining the funding, the planning (project development report, environmental assessment and drainage study) for the entire site and the design for Phase 1 can be completed.
5. The DAGS and KEO funding to date for the subject project will all lapse on July 30, 1990 unless:
 - a. The funds are encumbered, or
 - b. The funds are reappropriated by the 1990 legislative session.
6. DAGS will request the 1990 Legislature to:
 - a. Reappropriate the existing KEO funding.
 - b. Appropriate the additional funds needed for design and construction of a KEO facility, a phased portion of the DAGS MMSF, and the off-site improvements for the total project.

Very truly yours,


RUSSEL S. NAGATA
State Comptroller

ACCEPTED:

KAUAI ECONOMIC OPPORTUNITY, INC.

By 

Date 10/24/89

Exhibit 7

DAGS Letter of Agreement Dated 10/5/89

page 2 of 2



John

KAUAI ECONOMIC OPPORTUNITY, INCORPORATED
RECEIVED

2670 NIUMALU ROAD
P.O. BOX 1027 • LIHUE, KAUAI, HAWAII 96766

TELEPHONE 245-4077

OCT 25 8 15 AM '89

DIV. OF PUBLIC WORKS
DAGS

October 24, 1989

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

Attention: Allan Sanborn

Dear Mr. Nagata:

Subject: E.O. No. 3258, Lihue MMSF
DAGS Job No. 14-10-0788

Have enclosed acceptance letter to confirm agreement reached
on May 15, 1989 meeting on providing Kauai Economic Opportunity,
Inc., (KEO) office space in the subject facility.

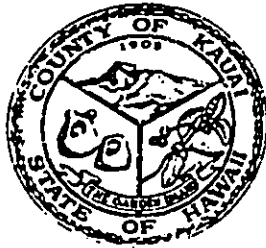
Sincerely,

Roy T. Nishida
President & Chief Executive Officer

1a

enclosure

JOANN A. YUKIMURA VES
 MAYOR
 FEB 1 10 51 AM '93
 DIV. OF PUBLIC WORKS



COUNTY ENGINEER
 TELEPHONE 245-3318
 EDMOND P.K. RENAUD
 DEP. COUNTY ENGINEER
 TELEPHONE 245-3602
 PW1.056

AN EQUAL OPPORTUNITY EMPLOYER
 COUNTY OF KAUAI
 DEPARTMENT OF PUBLIC WORKS
 3021 UMI STREET
 LIHUE, KAUAI, HAWAII 96766

January 28, 1993

Mr. Gordon Matsuoka
 State Public Works Engineer
 Dept. of Accounting & General Serv.
 State of Hawaii
 P.O. Box 119
 Honolulu, Hi 96810

DIVISION OF PUBLIC WORKS	
TO:	INITIAL FOR YOUR:
<input checked="" type="checkbox"/> State P.W. Engr	Approval
<input type="checkbox"/> P.W. Secy	Sign
<input checked="" type="checkbox"/> Staff Serv. Br.	Info
<input checked="" type="checkbox"/> Planning Br.	File
<input type="checkbox"/> Proj. Mgmt. Br.	See me
<input type="checkbox"/> Design Br.	Comments
<input type="checkbox"/> Insp. Br.	Invest %
<input type="checkbox"/> Qual. Cont. Engr	Rept
<input type="checkbox"/> Leasing Serv. Br.	

Dear Mr. Matsuoka:

RE: KAUAI ECONOMIC OPPORTUNITY FACILITY
 AND MULTI-AGENCY STORAGE BUILDING
 INFRASTRUCTURE STUDY

The proposed plan per the infrastructure study for subject development calls for the prohibition of County equipment parking in the strip of land abutting our maintenance shop and currently used for the purpose. We wish to restate our dire need for a storage area for County equipment awaiting repair. Therefore, we request that the County be apportioned a part of the strip for use as a storage area. A relocation of the fence line could delineate the limit of the area.

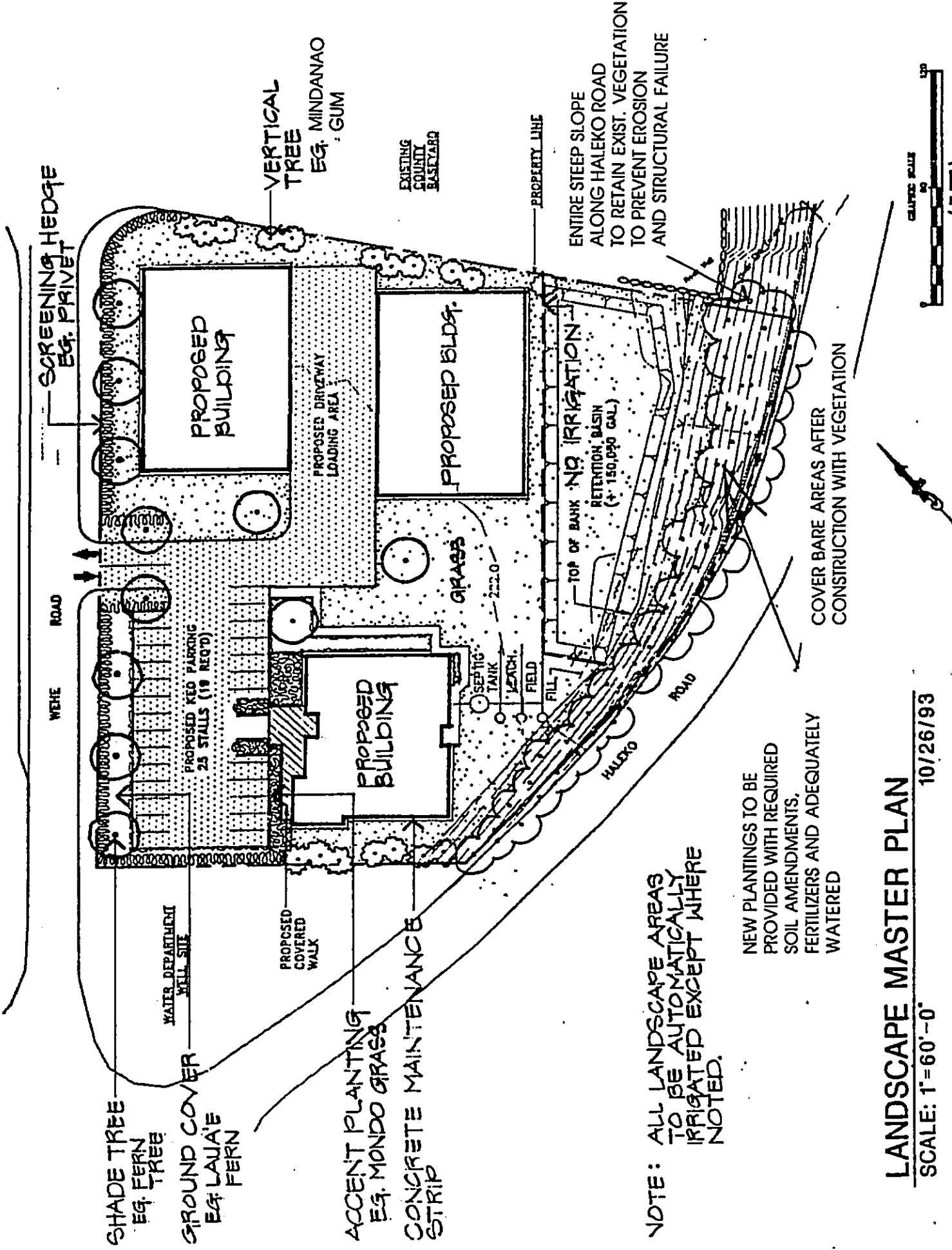
If apportioning the strip cannot or will not be considered, there is not need for keeping the land open for County vehicular access. We are able to enter the baseyard area from the main gate.

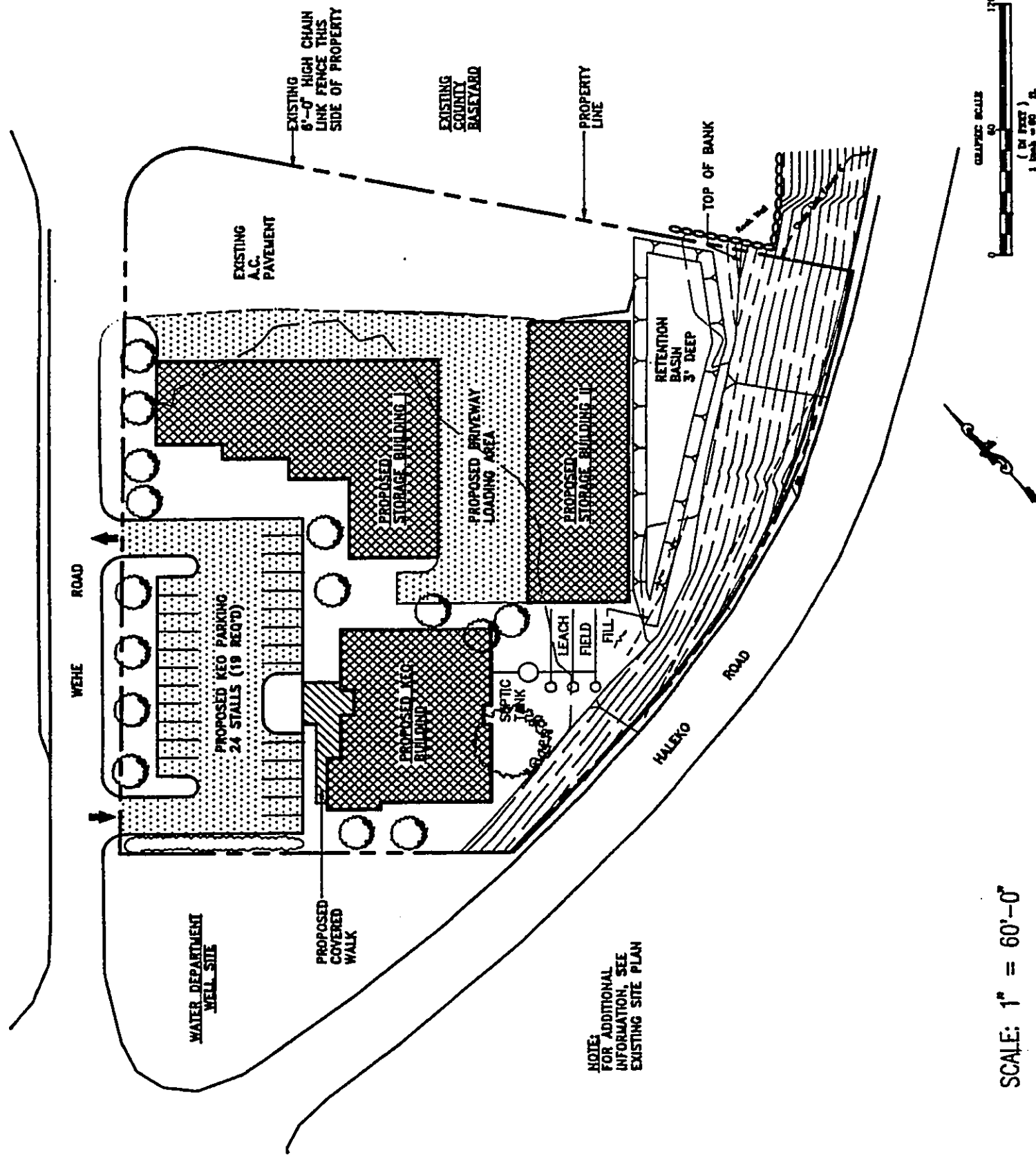
Thank you for the opportunity to review the study and to offer comments. Please call Kiyoji Masaki at 241-6616 if you have any question regarding the comments.

Very truly yours,

ED RENAUD
 Deputy County Engineer

KM/cu





JOANN A. YUKIMURA VE
 MAYOR
 FEB 1 10 51 AM '93



Alan
 COUNTY ENGINEER
 TELEPHONE 245-3316
 EDMOND P.K. RENAUD
 DEP COUNTY ENGINEER
 TELEPHONE 245-3802
 PW1.056

AN EQUAL OPPORTUNITY EMPLOYER
 COUNTY OF KAUAI
 DEPARTMENT OF PUBLIC WORKS
 3021 UMI STREET
 LIHUE, KAUAI, HAWAII 96766

January 28, 1993

Mr. Gordon Matsuoka
 State Public Works Engineer
 Dept. of Accounting & General Serv.
 State of Hawaii
 P.O. Box 119
 Honolulu, HI 96810

DIVISION OF PUBLIC WORKS	
INITIAL FOR YCL:	
TO: State P.W. Engr	Approval -
P.W. Svcy	Sign -
Staff Serv. Br	Info -
Planning Br.	File -
Proj. Mgmt. Br.	See me -
Design Br	Comments -
Insp. Br	Invest % -
Qual. Cont. Engr	Rpt -
Leasing Serv. Br.	

Dear Mr. Matsuoka:

RE: KAUAI ECONOMIC OPPORTUNITY FACILITY
 AND MULTI-AGENCY STORAGE BUILDING
 INFRASTRUCTURE STUDY

The proposed plan per the infrastructure study for subject development calls for the prohibition of County equipment parking in the strip of land abutting our maintenance shop and currently used for the purpose. We wish to restate our dire need for a storage area for County equipment awaiting repair. Therefore, we request that the County be apportioned a part of the strip for use as a storage area. A relocation of the fence line could delineate the limit of the area.

If apportioning the strip cannot or will not be considered, there is not need for keeping the land open for County vehicular access. We are able to enter the baseyard area from the main gate.

Thank you for the opportunity to review the study and to offer comments. Please call Kiyoji Masaki at 241-6616 if you have any question regarding the comments.

Very truly yours,

 ED RENAUD
 Deputy County Engineer

KM/cu

FEB 10 1993

Mr. Edmond Renaud
Deputy County Engineer
Department of Public Works
County of Kauai
3021 Umi Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Renaud:

Subject: Kauai Economic Opportunity (KEO) Facility
and Multi-Agency Storage Building

This is to confirm the February 8, 1993 telephone conversation between Mr. Kiyoji Masaki of your staff and Mr. Joseph Earing of my staff. The following items were discussed:

1. The County has no comments on the infrastructure study for the subject project. The County's only comment in its January 28, 1993 letter was about its desire to continue using the strip of land abutting the County's baseyard for its heavy equipment storage.
2. The Department of Accounting and General Services (DAGS) currently has no funds for either the relocation of the DAGS baseyard or the construction of the Multi-Agency Storage Building (Phase II) on the existing DAGS baseyard site. Additionally, there are no funds for these projects in the Executive Budget for Fiscal Biennium 1993-95.
3. DAGS is only proceeding with the KEO Facility (Phase I) at this time. Therefore, the County may continue to use the strip of State land abutting the County's baseyard for at least another two years.

Mr. Edmond Renaud
Page 2

Ltr. No. (P)1081.3

Should there be any questions, please have your staff
contact Mr. Joseph Earing of the Planning Branch at 586-0492.

Very truly yours,


GORDON MATSUOKA
State Public Works Engineer

JE:jy

cc: Mr. Wilfred Kimura, Kauai District Engineer
Mr. Roy Nishida, Kauai Economic Opportunity, Inc.
Mr. Clifford Leong, Project Management Branch
Mr. Dennis Irie, INK Architects

APPENDIX B

PARTIES CONSULTED

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

Consultation letters were sent to the ff:

Mr. Robert Takushi, Comptroller
Department of Accounting and General
Services
1151 Punchbowl Street
Honolulu, Hawaii 96813

Mr. Yukio Kitagawa, Chairman
Department of Agriculture
1428 S. King Street
Honolulu, Hawaii 96814-2512

Mr. Mufi Hannemman, Director
Dept. of Business, Economic Development &
Tourism
220 South King Street, 11th Floor
Honolulu, Hawaii 96813-4541

Major General Edward V. Richardson
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816

Mr. Charles Toguchi, Superintendent
Department of Education
1390 Miller Street
Honolulu, Hawaii 96813

Ms. Hoaliku Drake, Director
Department of Hawaiian Home Lands
335 Merchant Street
Honolulu, Hawaii 96813

Mr. Keith Ahue, Chair
Department of Land & Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813

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

Dr. John Lewin
Department of Health
1251 Punchbowl Street
Honolulu, Hawaii 96813

Mr. Bruce Anderson
Environmental Management Division
Department of Health
500 Ala Moana Boulevard
Five Waterfront Plaza, Suite 250
Honolulu, Hawaii 96813

Mr. Harold Masumoto
Office of State Planning
250 South Hotel Street, 4th Floor
Honolulu, Hawaii 96813

Mr. Richard Paglinawan
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dr. Roger Fujioka
University of Hawaii
Water Resources Research Center
2540 Dole Street, Holmes Hall 283
Honolulu, Hawaii 96822

Mr. John Harrison
University of Hawaii
Environmental Center
2550 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Mr. Larry Yamamoto
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 50004
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Mr. Michael Lee
Chief Operations Division
U.S. Army Corps of Engineers
Pacific Ocean Division, Building 230
Fort Shafter, Hawaii 96858

Mr. Jerry Leinecki
U.S. Department of the Interior
Fish and Wildlife Services
P.O. Box 50156
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Mr. John Naughton
U.S. Department of Commerce
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822

Ms. Edwina Tanaka, President
American Lung Association
245 North Kukui Street
Honolulu, Hawaii 96817

Mr. Jeff Lacey, Chief Planner
County of Kauai, Planning Department
4280 Rice Street
Lihue, Hawaii 96766

Mr. Edward Renaud, Acting Director
County of Kauai, Department of Public
Works
3021 Umi Street
Lihue, Hawaii 96766

Mr. Jeremiah Kaluna, Acting Director
County of Kauai, Department of Water
Supply
3021 Umi Street
Lihue, Hawaii 96766

Mr. Glenn Sato, Director
County of Kauai, Office of Economic
Development
4444 Rice Street
Lihue, Hawaii 96766

Mr. Ed Kawamura Jr.
Kawamura Farm Enterprises, Inc.
2824C Wehe Road
Lihue, Hawaii 96766

Mr. Clyde Takekuma, Head Sanitarian
DOH Environmental Health Services
3040 Umi Street
Lihue, Hawaii 96766

Mr. Ed Pettys, Kauai District Forester
Department of Land & Natural Resources
3060 Eiwa Street Room 306
Lihue, Hawaii 96766

Mr. Boyd Townsley
Kauai Electric
4473 Pahee Street, Suite M
Lihue, Hawaii 96766

Mr. John Yokoyama
Major Account Executive
GTE Hawaiian Telephone
P.O. Box 2200
Honolulu, Hawaii 96841

Mr. David W. Pratt
Grove Farm Co. Inc.
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Mr. Roy Nishida, President
Kauai Economic Opportunity, Incorporated
2670 Niunalu Road
Lihue, Hawaii 96766

Mr. Wilfred Kimura
District Engineer
DAGS Kauai District Office
3059 Umi Street
Lihue, Hawaii 96766

JOHN WAIKEE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:

October 5, 1993

93-267/epo

Ms. Rose Cruz Churma AIA
DesignLab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace
Honolulu, Hawaii 96822

Dear Ms. Churma:

Subject: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
Lihue, Kauai
TMK: 3-8-05: 1 & portion of 2

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

Wastewater Disposal

1. The project site is immediately adjacent to a drinking water well site owned and operated by the County Department of Water. The proposed individual wastewater system (septic tank with leaching field) will be located within a 1000 foot radius from the drinking water well and may impact the water quality of that well. The Department of Health's (DOH) Chapter 11-62, "Wastewater Systems", Section 11-62-32 states that no Individual Wastewater System shall be located at any point having less than 1000 feet from any drinking water well, unless otherwise approved by the director.
2. The existing public wastewater treatment plant serving the Lihue area does not extend out to the project site.
3. We will withhold detailed comments on the wastewater system until such time that we are able to review the geohydrologist's report. However, the information provided is too brief to allow for an adequate review. We will expect the Environmental Assessment (EA) to provide greater detail on the specific water well in question, including, but not limited to, the name of the well, the state well number, well construction details (well log), site topography, planned uses of the proposed and existing facilities (i.e., what will be stored at the site?) and identify the means of wastewater disposal utilized by existing facilities within the area.

Ms. Rose Cruz Churma AIA
October 5, 1993
Page 2

4. Also, the possible installation of a septic tank system and a stormwater retention basin near the potable water well creates the distinct possibility that the Safe Drinking Water Branch may require more routine monitoring by the Department of Water Supply to insure that the public is adequately protected. Such monitoring would be in addition to that already required by Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems," and would be the sole responsibility of the Department of Water.

If you should have any questions on this matter, please contact Mr. Clyde Takekuma, Chief Sanitarian, Kauai District Health Office at 241-3323.

Nonpoint Source Pollution Concerns

Proper planning, design and use of erosion control measures substantially reduces the total volume of runoff generated, thereby decreasing sediment load. Suggested measures that should be considered are:

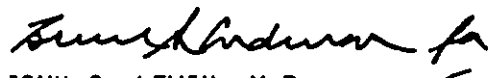
- a. Conduct grubbing and grading activities during the low rainfall months (April - October).
- b. Replant or cover bare areas soon as grading or construction is completed. New plantings will require soil amendments, fertilizers, and temporary irrigation to become established.
- c. Use vegetation, mulch, gravel and porous pavement wherever feasible to minimize the acreage of impervious areas.
- d. Retention basins require maintenance to remain effective.

Further Nonpoint Source comments on this project will be withheld until detailed drainage and retention basin plans are provided.

If you should have any questions on the Nonpoint Source Pollution comments, please contact Ms. Shirley Nakamura of the Environmental Planning Office at 586-4337.

Due to the general nature of the information submitted, we reserve the right to impose further environmental health restrictions on this project when more detailed information is provided.

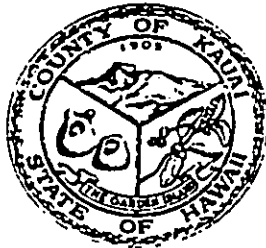
Very truly yours,



JOHN C. LEWIN, M.D.
Director of Health

c: Environmental Planning Office
Wastewater Branch
Safe Drinking Water Branch
Kauai District Health Office

JOANN A. YUKIMURA
MAYOR



COUNTY ENGINEER
TELEPHONE 241-6600

EDMOND P.K. RENAUD
DEP. COUNTY ENGINEER
TELEPHONE 241-6600

PW9.152

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
3021 UMI STREET
LIHUE, KAUAI, HAWAII 96766

October 1, 1993

Ms. Rose Cruz Churma AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace
Honolulu, Hawaii 96822

Dear Ms. Churma:

RE: DRAFT ENVIRONMENTAL ASSESSMENT
KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING (PHASE I)
LIHUE MULTI-AGENCY STORAGE FACILITY (PHASE II)
TMK 3-8-05:1 & POR OF 2, LIHUE, KAUAI, HAWAII

Your letter dated September 9, 1993 which summarizes some of the issues associated with the proposed KEO Building (Phase I) and Lihue Multi Agency Storage Facility (Phase II) points out the eventual loss of a strip of land abutting the County's baseyard currently used by the County for heavy equipment storage.

The loss of the above area for heavy equipment storage will cause serious problems on the County's auto and heavy equipment repair and maintenance program. The County baseyard site by itself lacks the space to accommodate the fleet of vehicles and equipment which is now twice the fleet used in the sizing of the existing baseyard.

Alternatives to retain the strip of land in whole or in part should be investigated.

Please feel free to call George Ishibashi, Auto Maintenance Shop Superintendent at 241-6625 if you have any question regarding the above.

Very truly yours,

ED RENAUD
Deputy County Engineer

KM

JOHN WAIHEE
GOVERNOR



Robert P. Takushi
COMPTROLLER

Lloyd I. Unebasami
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
KAUAI DISTRICT OFFICE
3059 UMI STREET
LIHUE, HAWAII 96766 - 1308

LETTER NO. K-577.3

September 28, 1993

MEMORANDUM

TO: Ms. Rose Cruz Churma
FROM: D.A.G.S. District Engineer, Kauai
SUBJECT: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
TMK:3-8-05:1 & por. of 2; Lihue, Kauai, State of Hawaii

We have reviewed the Draft Environmental Assessment for subject project and have no comments to offer.

W. N. Kimura
for WILFRED N. KIMURA

JOHN WAIHEE
GOVERNOR

CHARLES T. TOGUCHI
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2380
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

September 27, 1993

Ms. Rose Cruz Churma, AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

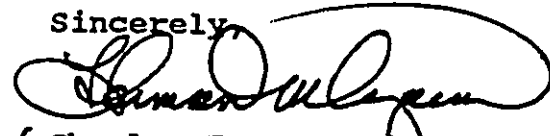
Dear Ms. Churma:

SUBJECT: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
TMK: 3-8-05: 1 & por. of 2

We have reviewed the synopsis of the subject assessment and have determined that the proposed development will have no impact on the public schools in the area.

Thank you for the opportunity to comment.

Sincerely,


Charles T. Toguchi
Superintendent

CTT:hy

cc: A. Suga, OBS
S. Akita, KDO

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



KAUAI ECONOMIC OPPORTUNITY, INCORPORATED

P.O. BOX 1027 • LIHUE, KAUAI, HAWAII 96766

TELEPHONE 245-4077

September 23, 1993

Rose Cruz Churma
Designlab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace, HI 96822

Dear Ms. Churma:

We have reviewed your Environmental Assessment Synopsis for Kauai Economic Opportunity's new facility and have no comment at this time.

Please call me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roy T. Nishida', written in a cursive style.

Roy T. Nishida
Chief Executive Officer

JOHN WAIHEE
GOVERNOR
STATE OF HAWAII



HOALJKU L. DRAKE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

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

September 23, 1993

Ms. Rose Cruz Churma, AIA
DESIGN LAB, Manoa Marketplace
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

Dear Ms. Churma:

Subject: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
TMK: 3-8-05: 1 & por. of 2, Lihue, Kauai, Hawaii

Thank you for providing a copy of your synopsis of the above proposed project for our review and comment.

While we anticipate no impacts upon the programs and projects of the Department of Hawaiian Home Lands, I would like to share the following observations of my staff.

1. **Roadways and Access:** It appears that vehicles will be entering and exiting the property from two nearly adjoining driveways after construction of the new driveway serving the Phase I parking lot. Appropriate signs may be needed to warn against simultaneous conflicting turns.
2. **Drainage:** The proposed drainage retention basin should be carefully designed and constructed to avoid water saturation of the embankment and a mudslide onto Haleko Road.
3. **Sewage Disposal:** The assessment should discuss the impacts upon the community and environment if the leaching field proposed within 1,000 feet of the existing well does contaminate the water in that well. What would be the water service alternatives?

Ms. Rose Cruz Churma, AIA
September 23, 1993
Page 2

If you have any questions regarding our comments, please feel
free to call Ben Henderson of our Planning Office at 586-3836.

Warmest aloha,


Honolulu L. Drake, Chairman
Hawaiian Homes Commission

HLD:BH:JC:asy/3039L



REPLY TO
ATTENTION OF

Operations Division

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

September 22, 1993



Ms. Rose Cruz Churma
DesignLab
2752 Woodlawn Drive
Suite 5-211
Manoa Marketplace
Honolulu, Hawaii 96822

Dear Ms. Churma:

This is in response to your September 9, 1993 letter regarding the Kauai Economic Opportunity (KEO) Building (Phase I), and Lihue Multi-Agency Storage Facility (Phase II), Lihue, Kauai, Hawaii, TMK: 3-8-05: 1 & por of 2.

Based on the information provided, the projects do not involve any work in waters of the United States; therefore, a Department of the Army permit is not required for the work. File No. NP 93-159 has been assigned to this project. Please refer to this number in future correspondence.

Sincerely,

Warren S. Kanai
Regulatory-Operations Team Leader

United States
Department of
Agriculture

Soil
Conservation
Service

P. O. Box 50004
Honolulu, HI
96850-0001

September 21, 1993

Ms. Rose Cruz Charma AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace
Honolulu, Hawaii 96822

Dear Ms. Charma:

Subject: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
TMK: 3:8:05:1 & por. of 2; Lihue, Kauai, Hawaii

We have completed our review of the Draft Environmental Assessment and have the following comments to offer:

The drainage component appears adequate for the project, however the retention basin's embankment along Haleko Road should be vegetated to prevent erosion and potential structural failure. We recommend vegetating the entire steep slope along Haleko Road with a suitable cover. A maintenance program should be established.

Maintenance of vegetation on those steep slopes should be coordinated with the Kauai County Department of Public Works. The vegetation will reduce erosion of that area and sediment pollution of Nawiliwili Stream.

Location of the septic tank and leach field appears to be within 200 feet of the Kauai Department of Water Supply Well Site. Other options should be considered to preclude contamination of the well.

We appreciate the opportunity to provide comment, should you have any questions, please contact Michael C. Tulang at 541-2606.

Sincerely,



NATHANIEL R. CONNER
State Conservationist

cc: Laurie Ho, District Conservationist, Lihue Field Office.

DEPARTMENT OF WATER
COUNTY OF KAUAI
P.O. BOX 1706
LIHUE, HAWAII 96766-5706
PHONE NO: (808) 245-6986 FAX NO. 245-5813

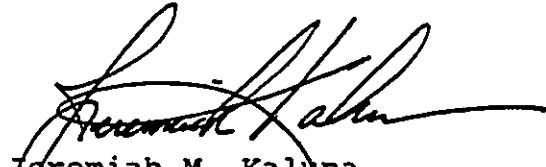
September 20, 1993

Ms. Rose Cruz Churma AIA
Design Lab
2752 Woodlawn Drive
Suite 5-211
Manoa Marketplace
Honolulu, HI 96822

Re: Draft Environmental Assessment, Kauai Economic Opportunity
(KEO) Building (Phase I), Lihue Multi-Agency Storage Facility
(Phase II), TMK: 3-8-05:1 & por. of 2, Lihue, Kauai

We reviewed the Draft Environmental Assessment for the subject
project and have no comments to offer.

Thank you for the opportunity to comment.



Jeremiah M. Kaluna
Acting Manager and Chief Engineer

WH:et

JOHN WAIHEE
GOVERNOR OF HAWAII



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

KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II
DONA L. HANA'IKE

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

REF:OCEA:SKK

File No.: 94-170
DOC. NO.: 3644

Ms. Rose Cruz Churma, AIA
DesignLab
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

OCT 27 1993

Dear Ms. Churma:

SUBJECT: Draft Environmental Assessment (DEA): Kauai Economic
Opportunity Building (Phase I), Lihue Multi-Agency Storage
Facility (Phase II), Lihue, Kauai, TMK: 3-8-05: 1, por. 2

We have reviewed the DEA preparation information for the subject project transmitted by your letter dated September 9, 1993, and have the following comments:

Historic Preservation Division

The Historic Preservation Division (HPD) comments that a review of their records indicates the absence of known historic sites on this property. The project area has been developed for residential purposes. It is highly unlikely that historic sites are present in this disturbed area because of the previous development. Thus, HPD believes that this project will have a "no effect" on significant historic sites.

Thank you for the opportunity to comment on this matter.

Please feel free to call Steve Tagawa at the Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Keith W. Ahue".

KEITH W. AHUE

JOHN WAHKEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

KERITH ABUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCE

DEPUTIES

JOHN P. KEPPELER II
DONA L. HANAHE

AQUACULTURE DEVELOPMENT
PROGRAM

AQUATIC RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT

CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
DIVISION

LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

September 20, 1993

Ms. Rose Cruz Churma
Design Labs
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

LOG NO: 9493
DOC NO: 9309NM28

Dear Ms. Churma:

**SUBJECT: Historic Preservation Review -- Draft EA for Kauai Economic Opportunity
(KEO) Phase I and Lihue Multi-Agency Storage Facility (Phase II)
TMK: 3-8-05: 1 & por. 2
Kalapaki, Lihue, Kauai**

Thank you for your letter of September 9, 1993. A review of our records indicates the absence of known historic sites on this property. The project area has been developed for residential purposes. It is highly unlikely that historic sites are present in this disturbed area because of the previous development. Thus, we believe that this project will have a "no effect" on significant historic sites.

If you have any questions, please contact Ms. McMahon, our staff archaeologist for the County of Kaua'i, at 587-0006.

Sincerely,

A handwritten signature in black ink, appearing to read "Don Hibbard".

DON HIBBARD, Administrator
State Historic Preservation Division

NM:amk



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
KAUAI DISTRICT

3060 EIWA STREET, ROOM 306
LIHUE, KAUAI, HAWAII 96766-1875

September 22, 1993

IN REPLY REFER TO

Ms. Rose Cruz Churma
DesignLab
2752 Woodlawn Dr., Suite 5-211
Manoa Marketplace
Honolulu, HI 96822

Dear Ms. Churma:

This responds to your Draft Environmental Assessment for the KEO Building and Multi-Agency Storage Facility.

We have no comments on your Assessment.

Sincerely,

A handwritten signature in black ink, appearing to read "Edwin Q.P. Petteys".

Edwin Q.P. Petteys
District Manager

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
KAUAI DISTRICT HEALTH OFFICE
3040 UMI STREET
LIHUE, HAWAII 96766

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

RON METLER, M.D.
DISTRICT HEALTH SERVICES ADMINISTRATOR

September 20, 1993

Ms. Rose Cruz Churma AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

Dear Ms. Churma:

SUBJECT: Draft Environmental Assessment
Kauai Economic Opportunity (KEO) Building (Phase I)
Lihue Multi-Agency Storage Facility (Phase II)
TMK: 3-8-05:1 & por. of 2
Lihue, Kauai, Hawaii

Thank you for providing the opportunity to review and comment on the subject project. Our comments will be submitted to you through the Office of the Director of the Department of Health.

Please call me at 241-3323 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Clyde Takekuma".

Clyde Takekuma
Registered Sanitarian VI, Kauai

CT/plo

JOHN WAIHEE
GOVERNOR



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

EDWARD V. RICHARDSON
MAJOR GENERAL
ADJUTANT GENERAL

MYLES M. NAKATSU
BRIGADIER GENERAL (M)
DEPUTY ADJUTANT GENERAL

September 20, 1993

Engineering Office

Ms. Rose Cruz Churma, AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace
Honolulu, Hawaii 96822

Dear Ms. Churma:

Subject: Draft Environmental Assessment, Kauai Economic
Opportunity (KEO) Building (Phase II) TMK: 3-8-05:1
& por. of 2; Lihue, Kauai, State of Hawaii

Thank you for providing us the opportunity to review the above
mentioned environmental assessment.

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

Sincerely,

Jerry M. Matsuda, P.E.
Lieutenant Colonel
Hawaii Air National Guard
Contacting and Engineering Officer

c: Joe Earing, DAGS Planning Branch
Dennis Irie, INK Architects Inc.





**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

Central Pacific Plaza, 220 South King Street, 11th Floor, Honolulu, Hawaii
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804 Telephone: (808) 586-2406 Fax: (808) 586-2377

JOHN WAHNE
Governor
MUFU HANNEMANN
Director
BARBARA KIM STANTO
Deputy Director
RICK EGGE
Deputy Director
TAKESHI YOSHIHAR
Deputy Director

September 21, 1993

Ms. Rose Cruz Churma
Design Lab
2752 Woodlawn Drive, Suite 5-211
Honolulu, Hawaii 96822

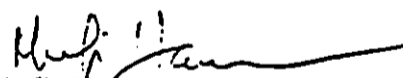
Dear Ms. Churma:

The Department of Business, Economic Development & Tourism is pleased to submit the enclosed comments on the Draft Environmental Assessment for the Kauai Economic Opportunity (KEO) Building (Phase I) and the Lihue Multi-Agency Storage Facility (Phase II).

The comments were provided by the Land Use Commission. Questions regarding these comments may be directed to Esther Ueda, LUC Executive Officer, at 587-3826.

Thank you for the opportunity to comment.

Sincerely,


Mufu Hannemann

Enclosure

JOHN WAIHEE
GOVERNOR



ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

September 17, 1993

SUBJECT: Director's Referral 93-267-J
Preparation of Draft Environmental Assessment (EA)
for the Kauai Economic Opportunity (KEO) Building
(Phase I) and the Lihue Multi-Agency Storage Facility
(Phase II)

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

- 1) The project site as shown on attachments A, B & C of the subject document is located within the State Land Use Urban District.
- 2) According to attachments B and C, TMK 3-8-05: por. 2 does not appear to be part of the proposed project. A clarification of the TMKs involved in the proposed project should be provided.

We have no other comments to offer at this time.

EU:KM:th

JOANN A. YUKIMURA
MAYOR



GLENN H. SATO
DIRECTOR

COUNTY OF KAUAI
OFFICE OF ECONOMIC DEVELOPMENT
4444 RICE ST. - RM 204
LIHUE, KAUAI, HAWAII 96786
TELEPHONE (808) 245-7305

September 14, 1993

Ms. Rose Cruz Churma, AIA
Design Lab
2752 Woodlawn Drive, Suite 5-211
Manoa Marketplace
Honolulu, HI 96822

Dear Ms. Cruz Churma:

Thank you for the opportunity to review the plans for the KEO Building and Multi-agency Storage Facility. Unfortunately, there does not seem to be sufficient information provided in your synopsis of the proposed action to provide adequate comments.

However, I have the following questions and comments to the information that has been provided:

1. Although I am familiar with some of KEO's programs, there should be a more detailed description of all of their activities, especially those that will be based in this facility. This would determine any comments in relation to the adjacent operations and the nearby Pua Loke subdivision across Haleko Road.
2. There should be more discussion on traffic impacts, if any are anticipated. Depending on the type of programs, the 25 parking stalls could produce a flurry of traffic activity in the area.
3. Will there be followup monitoring of the existing well after the project is completed? I'm sure that certification by a geohydrologist should not be the end all to any concern regarding any impacts by the leaching field.
4. I would also be concerned as to the drainage pattern of the site in general, especially the parking lot. Does the drainage pattern take any parking lot flows away from the well site?
5. The discussion should also include a socio-economic description of the benefits of the project to the island.
6. Although Phase II has no timetable, the discussion

Page 2
Ms. Rose Cruz Churma
KEO EA
September 14, 1993

should include a discussion of this phase to give the reader a clear picture of the project as a whole.

7. There should also be some discussion on the part of the property used by the County. Does the County hold some type of lease that will expire? You use the term "may be used by the County for at least another two years, since implementation of Phase II will only be possible at the end of that time frame." Can you explain this?

8. What will happen to the overall project if Phase II is delayed for more than two years due to the lack of funds for a site for the DAGS district baseyard? Is there a master plan that addresses this?

9. What is the source of funds for the KEO project? The synopsis seems to point to state funds. This should be clarified to the reader.

I hope that my comments help you in producing a much more comprehensive environmental assessment. My experience with EA's has taught me to address any and all concerns to avoid any unnecessary delays in the process from lack of adequate information. Good luck in the EA process. I'm sure that the community will benefit from KEO's move to better quarters.

Sincerely,

Glenn Sato

Glenn Sato
Director

APPENDIX C

INFRASTRUCTURE REPORT

By R.M. Towill Corporation

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

LIHUE MMSF
PRELIMINARY INFRASTRUCTURE STUDY

KAUAI ECONOMIC OPPORTUNITY FACILITY
AND MULTI-AGENCY STORAGE BUILDING

Lihue, Kauai, Hawaii

PREPARED BY:

R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

MARCH 1993

LIHUE MMSF PRELIMINARY INFRASTRUCTURE STUDY - MARCH 1993
Kauai Economic Opportunity Facility and Multi-Agency Storage Building
TMK: 3-8-05:1 & por. of 2
Lihue, Kauai, Hawaii

1. GENERAL

The site has an area of 1.93 acres with existing buildings and paved parking areas. The proposed Kauai Economic Opportunity Inc. (KEO) facility (Phase 1) will occupy the southwestern portion of the site. The remainder of this site will house two multi-agency storage facilities and a driveway/loading area for State agencies on Kauai (Phase 2). The attached Figures show the proposed utility improvements.

2. ROADWAYS

The site is accessed off of Wehe Road. Wehe Road intersects with Hala Road. The intersection is very close to the intersection of Hala Road and Haleko Road thus, almost forming a five-way intersection. The County of Kauai Department of Public Works (DPW) has expressed a concern that should the traffic load on Wehe Road increase, the intersection would become a problem.

The proposed KEO facility, and the multi-agency storage building are low traffic volume generators and are not expected to significantly alter the existing traffic load. Therefore, no intersection or roadway improvements are being proposed. The only improvement to the roads will be the new driveway connections to Wehe Road from the proposed parking lot.

The existing paved area along the northeastern area of the site is presently used by the County of Kauai for equipment parking and to allow their vehicles to turn into the maintenance bays at the adjacent County Baseyard. The County has stated that this strip of land is essential to the operation of their Baseyard and the maintenance of the County's access to this strip is a high priority to the County. The proposed plan has kept this strip of land open for County vehicular access. However, the parking of the County equipment

will no longer be permitted in this area.

3. DRAINAGE

The proposed Phase 1 and Phase 2 improvements will increase the impervious area of the site from 0.66 acres to 0.95 acres in Phase 1, and 1.29 acres in Phase 2. It is estimated that this will increase the runoff from the site by a minimum of approximately 0.12 acre-feet or 39,100 gallons in Phase 1, and 0.23 acre-feet or 74,940 gallons in Phase 2. This will require the site to be graded to drain into a small retention basin. The basin should have a minimum storage of 0.23 acre-feet and an additional 0.23 acre-feet for peak flow reduction for Phase 2. An approximate storage capacity of 0.46 acre-feet or 149,900 gallons is recommended in Phase 2. The site can accommodate a 3-foot deep 88,640 gallon basin which is acceptable for Phase 1 and will be built in Phase 1. A retention basin with 61,260 gallons of storage is needed for Phase 2. This basin can be built on the site by utilizing the existing vehicle parking area adjacent to the County Baseyard or the park adjacent to the KEO facilities. This will allow construction of the project without increasing the runoff volume to Halekō Road and Nawiliwili Stream.

4. WATER

An 8-inch water line is along the mauka side of Wehe Road. This line is adequate to serve the proposed KEO Facility. If possible, the existing water lines and water meters are planned to be used. No major changes are expected. Irrigation requirements are not included in this analysis at this time.

The County Department of Water (DOW) will inform the State on the status of the existing water capacity of the Lihue area. There may be additional charges for water source and storage development. An additional fire hydrant may be required and will be determined during the design phase. The Phase 2 improvements are not expected to increase the water demand.

5. SEWER

The sewer system in the area is not included in the Lihue Wastewater Treatment Plant (WWTP) service area. There are no sewer lines in the immediate vicinity of the site. The closest County line is on Haleko Road near Rice Street. The sewage pumping station that pumps sewage from the Haleko shops to Rice Street is at capacity and will need to be upgraded to serve any new facility in the vicinity of this proposed facility. The Lihue WWTP is also at capacity and is planned to be expanded within a few years. At this time the project site could be added to the service area. The newer developments by Grove Farm, such as Ulu Kou and Ulu Mahi have dry sewers or are connected to the Kukui Grove WWTP, a private plant owned by Grove Farm, with no obligation to connect other users outside of their development.

A septic tank and leaching field is proposed to dispose of the small sewage flows generated by the proposed project. The Phase 2 portion will not add any new sewage flows. Due to the prohibitive costs associated with any connection to an existing sewer system, the Department of Health (DOH) Sanitary Branch has indicated that they will probably allow the installation of a septic tank and leaching field on the site, even though it is located near an existing well, for the proposed KEO Facility. The DOW and State DOH Clean Water Branch will require a geohydrologist report to certify that the existing well will not be affected by the leaching field before they approve the use of a leach field within 1,000 feet of an existing well.

The basic well information is presently being evaluated by a geohydrologist to determine the feasibility of gaining approval from the DOW and DOH. The well is a deep well with concrete casing to a depth of 160 feet and solid casing to a depth of 206 feet.

Based on a population of 20 people and a sewage demand of 15 gallons per capita per day, the septic tank should have a minimum capacity of 300 gallons. The area required for a leach field is 1,050 square feet based on an estimated percolation rate of 2 inches per hour. A proper soils test will be required to verify the actual percolation rate. The area required

can be achieved by constructing three 3-foot wide leaching trenches that are 30 feet long spaced at 8 feet on center.

The proposed project could still be connected to the Lihue WWTP in the future if sewage improvements to the system in the area such as a new sewer line on Haleko Road and a new or upgraded pump station on Haleko Road, are constructed. This would be a prohibitive cost for this small project.

KEO Facility (Phase 1) and Multi-Agency Storage Facility (Phase 2)
TMK: 3-8-05:1 & por. of 2

Infrastructure Calculations

Drainage

Rainfall	14 inches in 24-hours - 100 year rainfall
Soil Type	LhB - SCS Type B
SCS Curve Number	75
Area	1.93 acres
Impervious area	0.66 acres
Impervious area Phase 1	0.29 acres additional
SCS Curve Number Phase 1	80
Impervious area Phase 2	0.34 acres additional
SCS Curve Number Phase 2	85
Existing runoff	1.71 acre feet
Phase 1 runoff	1.83 acre feet
Phase 2 runoff	1.94 acre feet
Required storage Phase 1	0.12 acre feet
Required storage Phase 2	0.23 acre feet

Vol of 3-foot deep basin
side lengths 165', 24', 38', 127' 11,850.00 cubic feet

required storage for off site basin 8,190.00 cubic feet

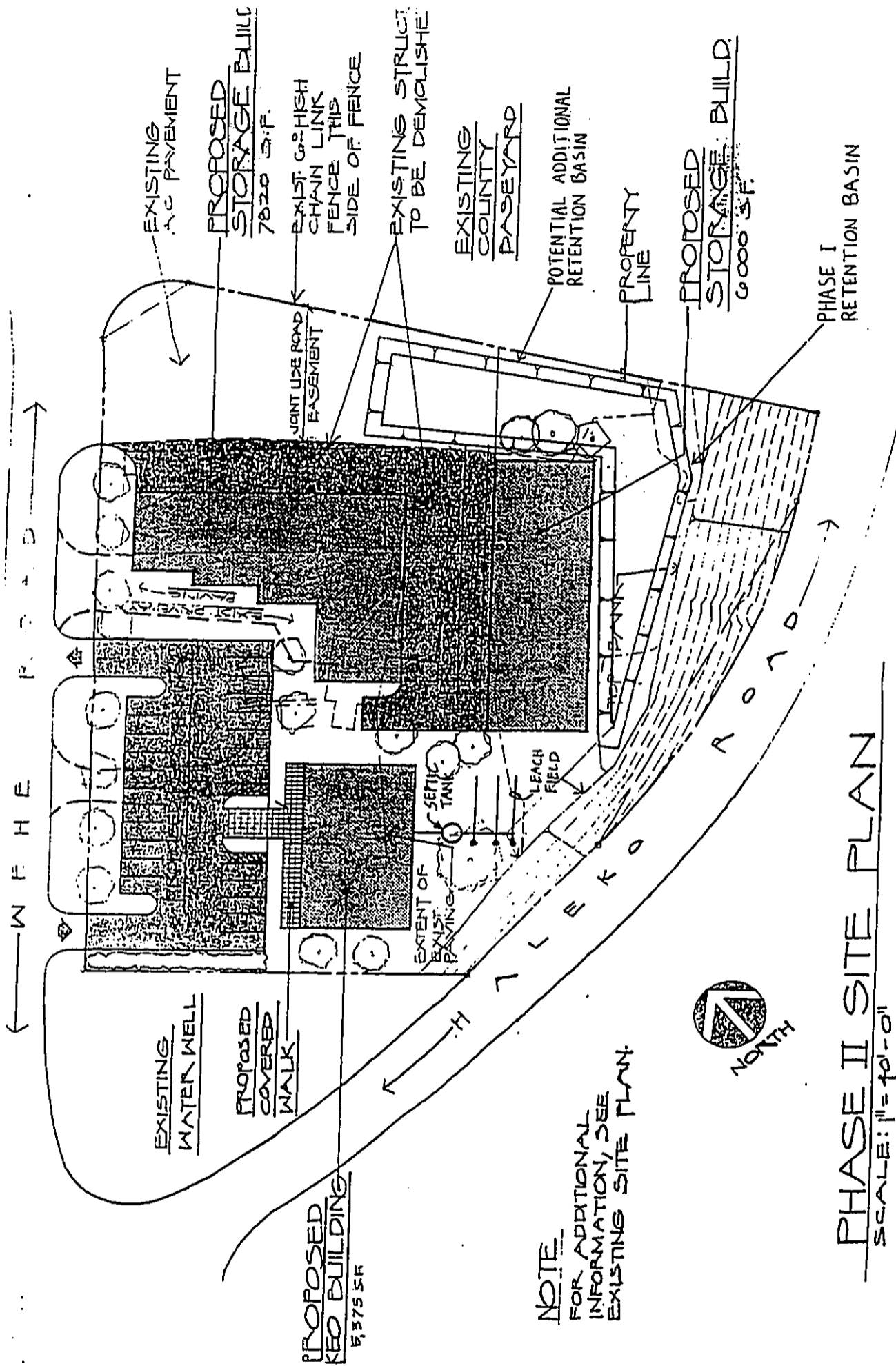
*In Phase 2, 100% of required storage should be added to reduce peak flow.
Recommended storage is 0.46 acre feet (= 20,040 cubic feet).

Sewage

Phase 1 & 2 occupancy	20 people
Assume 1 - 8-hour shift	15 gallons per capita per day for workers/clients
Minimum septic tank size	300 gallon septic tank
Assumed soil percolation	2 inches/hour
Maximum rate of application	3.5 gallons per square foot - Institution type flow
Using a 3-foot trench	85.71 lineal feet of trench - use 3 - 30-foot trenches

Water

Utilize Department of Water's 8-inch line	
Required water demand	576 gallons per day
	0.4 gallons per minute
Water Meter size	5/8"
Irrigation requirements not known	



NOTE
 FOR ADDITIONAL
 INFORMATION, SEE
 EXISTING SITE PLAN



PHASE II SITE PLAN
 SCALE: 1" = 10'-0"

APPENDIX D

GEO-HYDROLOGIST'S STUDY

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

APPENDIX D

GEO-HYDROLOGIST'S STUDY

By Mink & Yuen, Inc.

**KAUAI ECONOMIC OPPORTUNITY (KEO) BUILDING &
LIHUE MULTI-AGENCY STORAGE FACILITY**

EVALUATION OF CONTAMINATION POTENTIAL
of Well 5822-02 by Proposed Sewage Effluent
Drain Field

Prepared by Mink & Yuen, Inc.
100 N. Beretania St.
Honolulu, Hawaii

January 4, 1994

Multi-Agency Storage Building Complex, Lihue, Kauai

Evaluation of Contamination Potential
Well 5822-02 by Proposed Septic Tank Drain Field

Mink and Yuen, Inc.
January 4, 1994

Statement of Problem

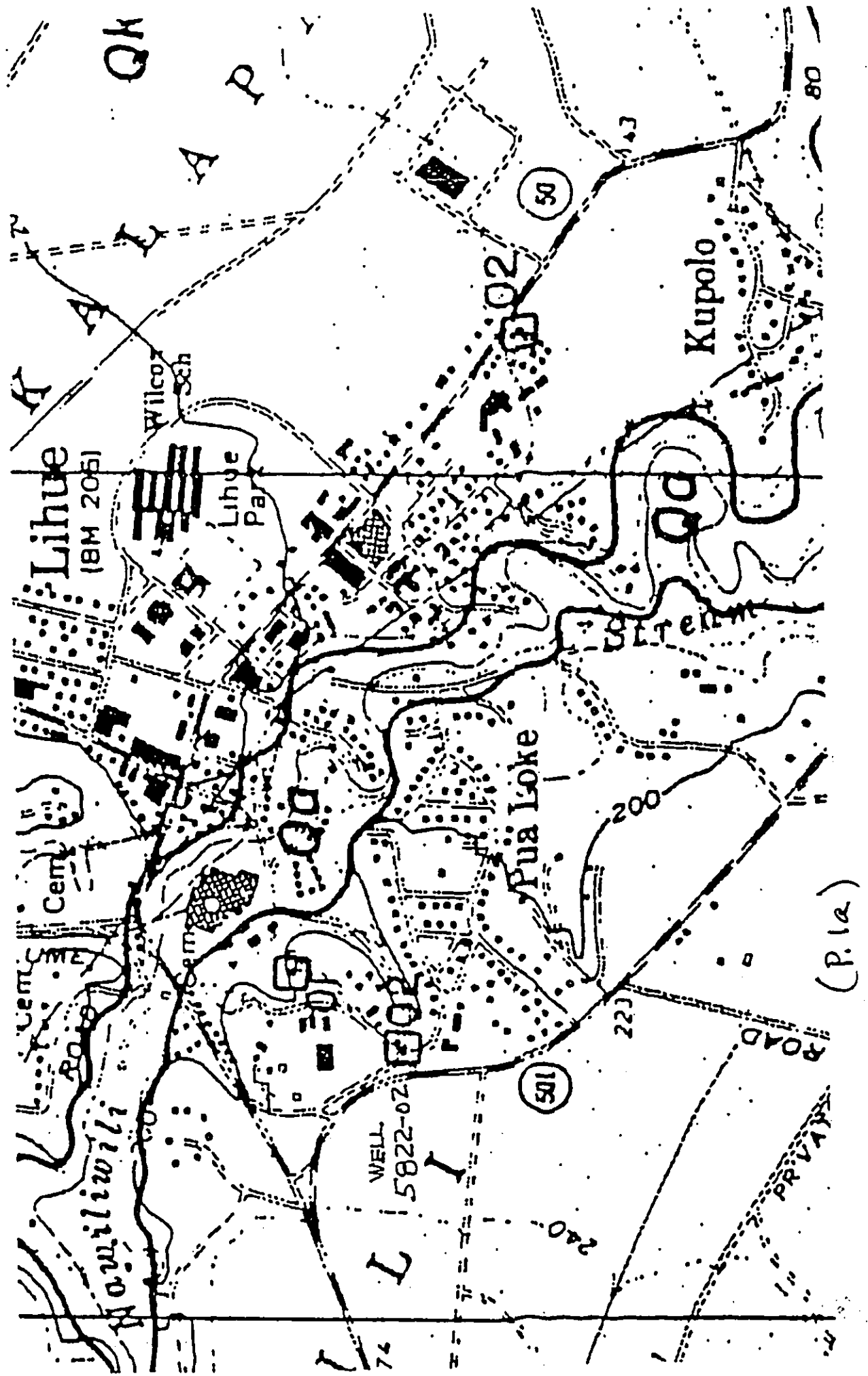
The proposed location of a drain field for a septic tank serving a State multi-agency building lies about 100 to 150 feet distant from the Lihue Grammar School well (5822-02), an active municipal well producing 80,000 gpd (1990) at a pump rate of 150 gpm (see accompanying map for location). The drain field will dispose of an average of 300 gpd septic tank effluent. Will the seepage affect the quality of the water pumped from the well?

The evaluation that follows is largely inferential because virtually no local aquifer or groundwater occurrence and behavior data exist. However, similar hydrogeological conditions are found elsewhere in eastern Kauai for which some relevant information has accrued. Extrapolation of this knowledge combined with general principles of geology and groundwater hydraulics is the basis for the inferences.

Scope of Evaluation

In order to arrive at conclusions concerning possible effects, if any, of leachate in groundwater pumped at the

WELLS: [Symbol]
 SCALE: 1 INCH = 1000 FT.
 GEOLOGY: Qa = ALLUVIUM
 Qk = Koloa BASALT



(P. 1a)

well, the evaluation must consider the local hydrogeology and how it controls groundwater occurrence and movement. The well configuration is known, and a log of lithology encountered during drilling is available (see accompanying illustration). Conditions fundamental to the evaluation include:

1. location of the well and the drain field
2. vertical geological section, which includes layering as follows: soil-subsoil/saprolite/unconfined Koloa basalt interrupted by unconformities/confined Koloa basalt
3. position of the water table in the saprolite and that of the confined aquifer
4. estimate of aquifer parameters
5. probable ambient groundwater direction of flow and gradient
6. constructional features of the well.

Hydrogeological Environment

Where the well and proposed leach field are located, the level terrain is underlain by soil, subsoil and the weathered zone (saprolite) of the Koloa basalt in place. The Koloa is an eruptive series that accumulated long after the original Kauai volcano was emplaced, then eroded. The Koloa mantles the deeply eroded surface of the parent volcano, having

filled ancient valleys and covered interfluvial ridges. Recent alluvium derived from the Koloa constitutes the fill in the modern valleys. The nearest alluvium is in Nawiliwili valley (see map).

An excellent exposure of the top 50 feet of the residuum overlying parent Koloa occurs approximately 400 feet down Haleko Road from the well. The exposure exhibits the following section:

- 10 feet soil-subsoil
- 10 feet undifferentiated residuum
- 30 feet (exposed) saprolite.

The drilling log identifies geological formations over the entire depth of drilling (745 feet). The driller's log, along with interpretations, is as follows (see illustration):

<u>Depth (ft)</u>	<u>Description</u>	<u>Interpretation</u>
0-293	Medium hard to very hard rock	Includes saprolite
293-324	Soft yellow clay	First unconformity in Koloa sequence
324-376	Medium hard to very hard rock	Upper part probably weathered
376-420	Coral and sand	Second unconformity, an old sea level
420-720	Medium hard to very hard rock	Confined water at depth 472

720-745

Coral and sand

Third unconformity, an old sea level.

Groundwater Hydrology

A perched water table lies at depth 32 feet below the surface. This water table is controlled by flow dynamics in the unconfined, low permeability saprolite, which is a separate aquifer from that of the confined Koloa. The saprolite groundwater is continuous with groundwater in the unconfined Koloa to a depth of at least 293 feet (the first unconformity), and perhaps to depth 376 feet (the second unconformity). The saturated confined aquifer starts at depth 472 feet, but its potentiometric surface (water table) is 28 feet above sea level. The confining layers are probably "leaky", allowing limited exchange of water between the aquifers.

Saprolite has a very low hydraulic conductivity, on the order of 0.1 to 1.0 ft/day, and an effective porosity of .15 to .30. Its thickness is normally about 100 feet. Koloa basalt, on the other hand, has moderate hydraulic conductivity, 100 ft/day or so. The gradient in saprolite is likely to be near .01, while that in Koloa is probably .001.

The saprolite aquifer is of primary interest because it will receive the drain field seepage. The deeper confined

aquifer under undisturbed conditions is not affectable by local surface seepage because it is protected by low permeability unconformities.

The direction of flow in the saprolite is probably toward the small tributary of Nawiliwili Stream parallel to Haleko Road. On Kauai, streams crossing the Koloa formation often have small surface drainage areas yet are perennial because they are fed by seepage from the saprolite. These streams deepen as the surface drainage area increases. The deepening also induces greater contributions from the saprolite and unconfined Koloa aquifers. The Haleko tributary is a typical example of this phenomenon. In the absence of a perturbation, such as an open well, the drain field leachate would eventually reach the tributary mixed with other saprolite water.

As seepage from the drain field is added to the saprolite water table; a mound will form, increasing the gradient from below the drain toward the discharge front. Assuming a drain field with dimensions 20 x 40 feet, the seepage rate of 300 gpd distributed equally amounts to .375 gpd/sq.ft, or .05 ft/day. Assigning a transmissivity to the saprolite of 50 sq.ft/day (based on hydraulic conductivity of 0.5 ft/day, depth of flow 100 ft) and an effective porosity of .15, mounding above the original water table at steady

state will be 0.65 feet directly below the center of the drain field and 0.36 feet a distance 100 feet away (calculated by Amer. Hydr. Inst. program, CSUPAWE). The gradient toward the stream and other possible discharge points, including the well, will be about 0.29 ft/100 ft.

This gradient combined with the assumed transmissivity of 50 sq.ft/day gives a minimum flow rate of 1 to 2 gpd per one foot wide strip of aquifer. If the mound gradient is greater than the ambient gradient, flow will radiate in all directions from the mound. On the other hand, if the natural gradient toward the small stream is steep, mounding will have little effect on the ambient flow direction.

The undisturbed natural gradient toward the stream is probably steep. Between the leach field and the stream the vertical drop is about 35 feet over a distance of 150 feet, as estimated by field observation. The perched water table at the well, and likely also below the proposed leach field, is 32 feet below ground. Thus the groundwater gradient toward the stream is 3 ft/150 ft, about seven times steeper than the gradient created by mounding. From this perspective, the mound would not induce cross-gradient flow toward the well.

Well Construction and Operation

Well 5822-02 was drilled in 1961 from ground elevation

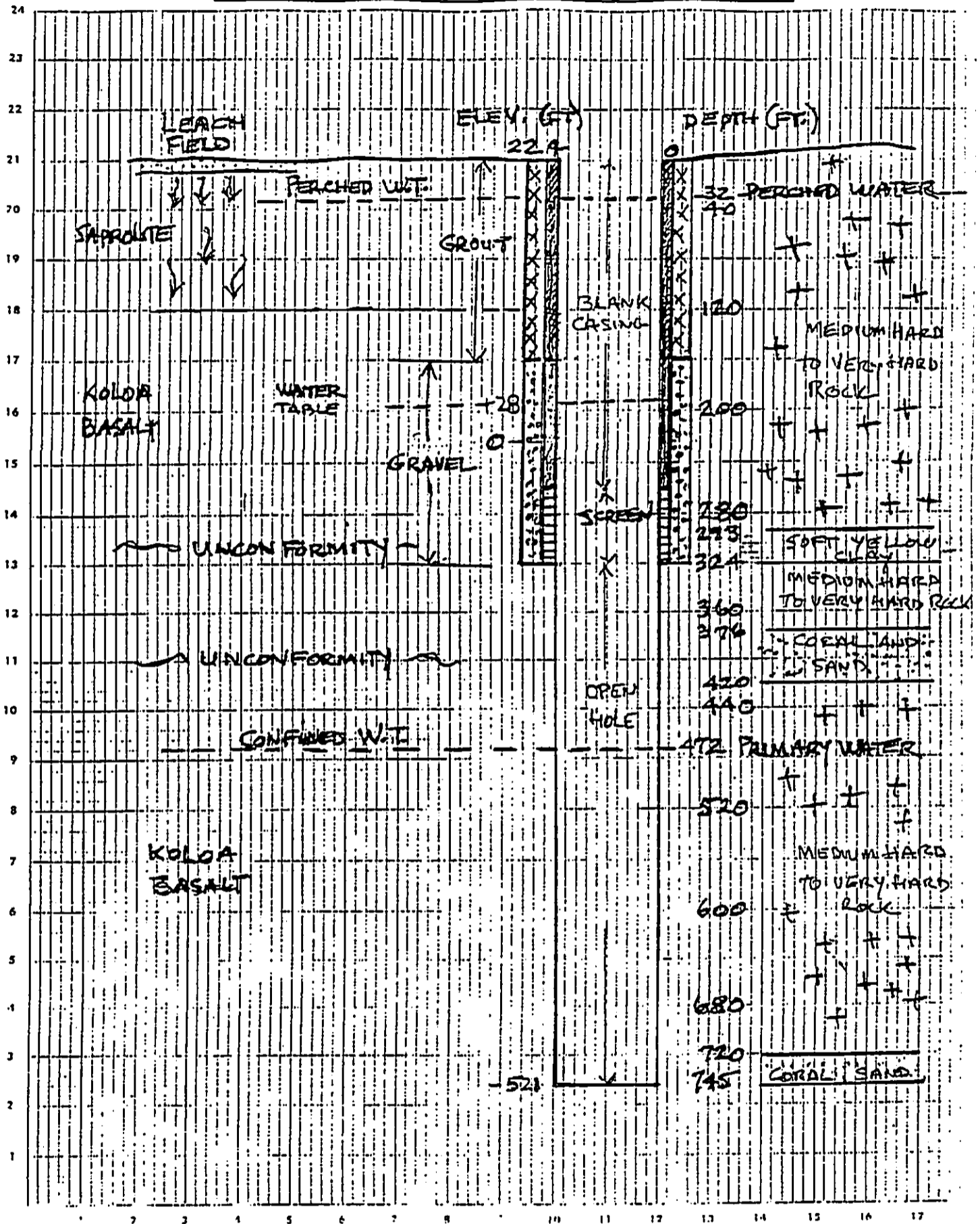
224 feet to depth 521 feet below sea level, a total drill depth of 745 feet. These depth measurements are taken from the driller log but do not agree with those listed in the Commission on Water Resources Management Groundwater Index and Survey, which gives drilling depth of 593 feet and the hole bottom at 369 feet below sea level. The driller log is assumed to be correct.

The accompanying figure illustrates the well construction and the formations encountered as noted in the driller log. The boring is fitted with an 8 inch diameter blank casing to elevation -36 feet, followed by the same diameter perforated casing over 60 feet to elevation -96 feet. From -96 to the bottom of the hole at elevation -521 feet the boring is open.

Grouting (sealing of the annular space between the outer diameter of the boring and the casing with cement) extends from the surface to depth 160 feet (elevation +64 feet), followed by rock packing. The original driller sketch suggests that much of the annular space between the start of the open hole and the bottom of the blank casing is without a rock pack.

While properly emplaced grout prevents seepage from finding an open and rapid path to the aquifer at depth, a rock pack and an open annulus allow this short circuit to

KAUAI W. V. WELL No. 5822-02 (LIHUE, KAUAI)



P. 7a

take place. As a result, the well is protected from shallow groundwater only to depth 160 feet.

Starting at depth 160 feet, the well is available to seepage from the saprolite-unconfined Koloa aquifer above the first unconformity, which is at depth 293 feet (elevation -69 feet) to depth 324 feet (-100 feet). A portion of the percolate originating on or below the surface will travel to the annulus of the well and trickle through the rock pack and into the open annulus along the 33 feet length of perforated casing extending above the first unconformity. This section of screen provides an entrance into the column of water being pumped.

Virtually all of the water pumped originates in the confined Koloa aquifer beneath the second unconformity, but a small volume of saprolite water combines with the main pumpage. During drilling the artesian water was encountered at depth 472 feet (elevation -248 feet). This Koloa aquifer may also be confined from below by the third unconformity at depth 720 feet, giving an aquifer depth of 248 feet.

The confined aquifer is probably 'leaky', which means that under natural, unperturbed conditions it can receive seepage from the overlying unconformity, providing the unconformity groundwater has a higher head. Head in the saprolite-unconfined Koloa aquifer is 192 feet while that in

the confined aquifer is 28 feet.

The chief route of seepage from the saprolite aquifer into the well is by way of the screen set above the first unconformity. The probability of seepage penetrating the unconformities and semi-confining layers to reach the main aquifer is poor. No evidence exists that seepage from cesspools and septic tanks in Koloa terrain of eastern Kauai has contaminated Koloa aquifers.

The well is fitted with a pump capable of yielding 150 gpm against the system head. The highest average annual production took place in 1990 (for records 1981 through 1991) when yield averaged 80,000 gpd.

Contamination Potential

Drainage from a shallow septic tank leach field will seep to the saprolite water table which lies 32 feet below ground surface. The saprolite aquifer is continuous with the unconfined Koloa basalt lying above the first unconformity. Because 33 feet of well screen is exposed above the unconformity, groundwater of the saprolite aquifer has an opportunity to pass into the well bore to mix with the confined Koloa groundwater.

How much saprolite seepage and from over what radius it flows to the well is problematic. The ambient direction of

flow is toward the small stream about 150 feet from the proposed leach field, but the well itself acts as a drain, even when at rest, because of the difference in head between the saprolite groundwater (head = 192 feet) and the groundwater of the confined Koloa aquifer (head = 28 feet). When the well is pumping, the head difference increases.

It is prudent to assume that at least some of the leachate from the proposed drain field will migrate to the well where it will be mixed with the Koloa groundwater in the pumpage. The composition of the leachate after traveling over a horizontal distance of about 100 feet from the drain field to the well will be very different from the original leachate. Conservative dissolved constituents will be retained, but particulate matter, including microorganisms, will be filtered. The soil-subsoil and saprolite through which the leachate must pass is an efficient filter.

The main dissolved constituent of concern will be nitrogen (N), which occurs in leachate in a concentration of 25 to 50 mg/l. Some of the nitrogen compounds will denitrify, releasing N as a gas that will escape, but most will be added to the saprolite groundwater. A fraction of the saprolite water-leachate mixture may move to the open portion of the well bore where it will combine with the water drawn from the confined aquifer.

Because the volume of confined aquifer groundwater in the mixture is very large compared to the small volume of leachate, the concentrations of leachate dissolved constituents will be less by three orders of magnitude in the pumpage than in the original leachate. Assuming that all 300 gpd of leachate reaches the well to combine with daily average output of 80,000 gpd, the mixing equation is:

$$C = (QC' + LC'') / (Q + L)$$

in which,

C = concentration in the pumped water

Q = pumpage (80,000 gpd)

L = leachate (300 gpd)

C' = concentration in confined aquifer groundwater

C'' = concentration in leachate.

For C' = 0, the relationship reduces to,

$$C/C'' = L / (Q + L).$$

Assuming that the leachate contains 40 mg/l N, and the ambient confined groundwater contains no N (although it is likely to carry up to 1 mg/l N), the C/C'' ratio is .0037. Thus a leachate concentration of 40 mg/l N would result in a concentration of .15 mg/l in the mixture. This same ratio would apply to any other dissolved constituent in the leachate. For example, if a constituent was present as 1 ppb, the concentration in the pumpage would be 3.7 ppt.

Another conservative dissolved constituent in the effluent is detergent. Concentrations are likely to fall between 5 and 50 mg/l. At the high end (50 mg/l), concentration in the pumpage would be 0.19 mg/l.

The mixing process will reduce dissolved constituents in the pumpage to negligible concentrations, leaving particulate matter as the remaining threat. Movement of particulate matter is constrained by the composition and structure of the medium. Effluent from the drain field must pass through a soil-subsoil layer about 10 feet thick, then a minimum distance of 279 feet in saprolite (based on vertical dimension of 260 feet and horizontal of 100 feet) to reach the open screen of the well. The survival of particulate matter during this tortuous migration is highly unlikely, if not impossible.

An extensive literature exists concerning the movement of septic tank drain field effluent and the survival of both dissolved and particulate constituents as a function of residence time and distance travelled. Two reviews are especially noteworthy and have been extensively employed in this evaluation: 1) D.K. Todd and D.E. McNulty, 1976, Polluted Groundwater: Water Information Center, Inc.; and 2) L.W. Canter and R.C. Knox, 1985, Septic Tank System Effects on Ground Water Quality: Lewis Publishers, Inc.

In the Todd-McNulty work, many references are made to studies conducted at the University of Hawaii Water Resources Research Center. These studies, both laboratory and field, conclude that the soil-subsoil matrix in Hawaii is an efficient filter. The saprolite, which resembles the subsoil, expectably is an excellent filter also.

Canter and Knox provide the results of many septic tank drain field investigations. Typically fecal coliform are filtered within the top 4 feet of a soil (page 63). The maximum distance traveled in fine loamy sand and gravel is 30 feet (page 64) and in fine sandy loam is 13 feet. Saprolite is a coherent mixture of clays and hydrated minerals that likely is at least as efficient in removal as fine sandy loam.

Canter and Knox also point out that the movement of viruses and bacteria is controlled by the pH of the receiving medium and the flow rate. A low pH, typical of Hawaiian soils, inhibits virus travel. Also, the lower the flow rate, the more effective is removal of particulate matter. Assuming aquifer conditions most favorable to a high flow rate, the groundwater velocity in saprolite is on the order of 1 ft/day, derived as follows,

$$v = (k/S) (dh/dx)$$

in which k, the hydraulic conductivity, is assigned a value

of 0.1 ft/day; S , the effective porosity, is taken as .15; and dh/dx , the gradient, is $(192 - 28)/100$. At this maximum velocity the time required for leachate to reach the well would be about 279 days. Over that time period complete removal of particulate matter could be expected.

Conclusions

The construction of the well allows seepage from the saprolite-unconfined Koloa aquifer to enter the well bore where it mixes with the primary pumpage obtained from the confined Koloa aquifer. Leachate from the septic tank drain field will percolate to the saturated zone of the saprolite aquifer and become part of the unconfined groundwater. The volume of leachate (300 gpd) is very small compared to the volume of saprolite groundwater and to the pumpage at the well (well capacity 150 gpm; average production 80,000 gpd for the maximum year).

The natural gradient of the saprolite groundwater is toward the small gully parallel to Haleko Road. However, the open portion of the well bore acts as a drain into which a portion of the shallow groundwater is drawn. Some, but not all, of the leachate mixed with the saprolite groundwater may drain to the well bore.

Even if all of the leachate were to combine with the

well pumpage, the mixing ratio of dissolved constituents would be very small, a magnitude closer to .001 than to .01. The concentration of a dissolved constituent in the pumpage would be reduced by a factor of 100 to 1000 from the concentration in the septic tank leachate. The reduction factor would be greater if only a portion of the leachate reached the well bore. A real possibility exists that virtually none of the leachate would migrate to the well.

The shortest subsurface distance from the leach field to the open well screen is 279 feet. Particulate matter would have to survive passage through highly tortuous pathways in the soil-subsoil and saprolite to get to the open screen. There is virtually no likelihood that particles entrained in groundwater could survive over this distance in such a poorly permeable medium as saprolite.