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HONOLULU, HAWAII 96813
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98:DEV/1979

December 15, 1998

TO: The Honorable Gary Gill, Director
Office of Environmental Quality Control (OEQC)

FROM: Donald K. W. Lau, Executive Director *Donald K. W. Lau*

SUBJECT: Final Environmental Assessment (FEA)
Finding of No Significant Impact (FONSI)
Kapolei High School
Tax Map Key: (1)9-1-16:74 and por. 75
Ewa, Oahu, Hawaii

The State of Hawaii, Housing and Community Development Corporation of Hawaii (HCDCH), has reviewed the comments received during the thirty-day public comment period which began on "September 8, 1998." The HCDCH has determined that this project will not have any significant environmental impacts and has issued a FONSI. Please publish this notice in the January 8, 1999, OEQC Bulletin.

We have enclosed a completed OEQC Environmental Notice Publication Form, four copies of the Final Environmental Assessment, and a computer disk with project summary.

Should you have any questions, please contact Sandy Pfund, Project Coordinator at 587-0550.

Enclosures

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

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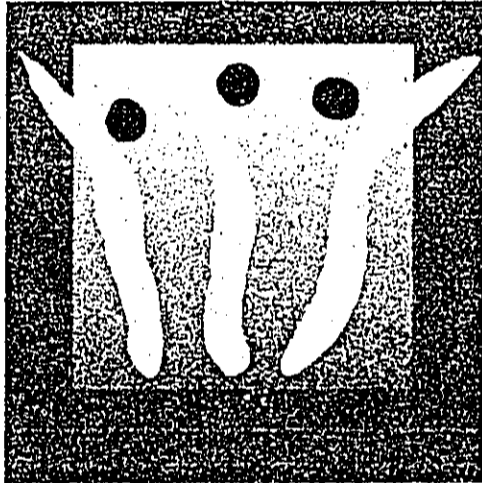
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FINAL ENVIRONMENTAL ASSESSMENT^{'98} DEC 23 A9:22

FOR THE

(HONOLULU) DEPT. OF
QUALITY CONTROL

*** KAPOLEI HIGH SCHOOL ***



Prepared for:

**STATE OF HAWAII
HOUSING AND COMMUNITY DEVELOPMENT
CORPORATION OF HAWAII**

December 1998

RECEIVED

'98 DEC 23 A9:22

FINAL ENVIRONMENTAL ASSESSMENT OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

FOR THE

KAPOLEI HIGH SCHOOL

Prepared for:

**STATE OF HAWAII
HOUSING AND AND COMMUNITY DEVELOPMENT
CORPORATION OF HAWAII (HCDCH)**

Prepared by:

MITSUNAGA & ASSOCIATES, INC.
747 Amana Street Suite 216
Honolulu, Hawaii 96814

December 1998

BENJAMIN J. CAYETANO
GOVERNOR



DONALD K.W. LAU
EXECUTIVE DIRECTOR


SHARYN L. MIYASHIRO
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STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
HOUSING AND COMMUNITY DEVELOPMENT CORPORATION OF HAWAII
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Should you have any questions, please contact Sandy Pfund, Project Coordinator at 587-0550.

Enclosures

OEQC BULLETIN PUBLICATION FORM
(Follow instructions on other side)

- 1 Project Name: KAPOLEI HIGH SCHOOL
- Type of Document (*circle one*): Draft EA (Final EA) EIS prep notice draft EIS final EIS
Legal Authority: Chapter 343, HRS
Agency determination: FONSI
- 2 Island: Oahu
District: Ewa
Tax Map Key Number: 9-1-16: 74 and 75 por.
- 3 Applicant: Housing and Community Development Corporation of Hawaii
Address: 677 Queen Street, Suite 300
Honolulu, Hawaii 96813
Contact: Sandy Pfund Phone: 587-0550
- 4 Approving Agency/
Accepting Authority: Governor, State of Hawaii
Address: c/o Office of Environmental Quality Control
235 S. Beretania St., Suite 702
Honolulu, Hawaii 96813
Contact: _____ Phone: _____
- 5 Consultant: Mitsunaga and Associates, Inc.
Address: 747 Amana Street, Suite 216
Honolulu, Hawaii 96814
Contact: Byung S. Lee, AICP Phone: 945-7882, #132
- 6 Public Comment Deadline: Feb. 8, 1999
- 7 Permits required prior to implementation: Building,
LUO Waiver, Grading, NPDES
- 8 Project Summary (*name of file on disk*): Summary.wpd
- 9 Public Library Copy: Ewa Beach Public Library
- 10 This form was prepared by: Byung S. Lee, AICP Phone: 945-7882, #132
Signature: BYUNG S. LEE Date: 12/18/98

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CORRECTION

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

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Preface

The State of Hawaii, Housing and Community Development Corporation of Hawaii (HCDCH) in partnership with a private developer and in consultation with the State Department of Education (DOE) and the State Department of Accounting and General Services (DAGS), proposes to develop the Kapolei High School in Kapolei, Hawaii. (TMK 9-1-16:74 and por. 75). Pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Administrative Rules, Environmental Impact Statement Rules, this Environmental Assessment (EA) documents the project's technical characteristics and environmental impacts, and advances findings and conclusions relative to the significance of the project.

Summary

Proposing Agency and Landowner

The proposing agency for the proposed project is the State of Hawaii, Housing and Community Development Corporation of Hawaii (HCDCH) as the successor of the Housing Finance and Development Corporation (HFDC) pursuant to Act 350, Session Laws of Hawaii 1997. The landowner for the property is the HCDCH.

Property Location and Description

The proposed Kapolei High School project is located on the southwest side of the Island of Oahu, approximately 22 miles west of the primary urban center of Honolulu. The site is located near the center of the Ewa Plain, north of Naval Air Station Barbers Point (NASBP), south of the Makakilo residential community and directly east of the proposed Kapolei Town Center. Further to the west lie the Campbell Industrial Park, Deep Draft Harbor, Ko'Olina resort/residential community, and the existing community of Honokai Hale. Major roadways providing general access to the site area include the H-1 Freeway and Farrington Highway, while Kapolei Parkway and Fort Barrette Road (aka Barbers Point Access Road) provide the direct access to the site. For taxation purposes, the project site is identified as TMK 9-1-16:74 and por. 75.

The site has been designated Urban for purposes of State Land Use. The site is zoned AG-1 Restricted Agricultural District by the City and County of Honolulu. The site is also zoned R3.5 Residential District under Act 15, Session Laws of Hawaii 1988. A public school can exist over such zoning. The project site area encompasses approximately 45 acres for the Kapolei High School and is located adjacent to a proposed residential neighborhood to the east and NASBP to the south. The north border of the project site fronts Kapolei Parkway, while the west border fronts Barbers Point Access Road.

The Kapolei High School project site is presently owned by the State of Hawaii, HCDCH but the school will be developed by Makai Village Partnership, a private developer. The land was previously leased to Oahu Sugar Company (OSCo) by the former owner, Campbell Estate, for sugar cane cultivation. All sugar cane cultivation in this area was terminated by OSCo. The State of Hawaii owns the railway and roadway rights-of-way makai of the project site and bordering NASBP. There is a small strip of land between the railroad right-of-way and NASBP owned by Campbell Estate. Barbers Point Access Road and Makakilo Interchange are also owned by the State of Hawaii. Kapolei Parkway, along the mauka frontage of the project site, is presently owned by State of Hawaii but will eventually be dedicated to the City and County of Honolulu. Farrington Highway is under disputed ownership. City and County of Honolulu shall acknowledge ownership and jurisdiction of all disputed highways under Act 288, SLH 1993. Fort Barrette Park (Puu Kapolei) is owned by the City and County of Honolulu. NASBP is owned by the Federal Government, but it is in the process of being transferred to various State, City and County, and Federal agencies. The proposed project is to be developed near the southwestern corner of the Villages of Kapolei.

Proposed Action

The proposed action involves the development of the High School on approximately 45 acres of land in the southwestern corner of the Villages of Kapolei development. In preparing for the 21st century, the Kapolei High School will be the fourth public school in Hawaii to incorporate utilization of a design charette process that provided for significant input by the community that the school will serve as well as educators and students. The charette process consisted of a series of intense brainstorming, project design sessions, in which all appropriate groups came together for periods of concentrated time. The process facilitated and accelerated communication and decision-making, and provided the opportunity for significant input by more people than the traditional design process allows.

The design charette for Kapolei High School was scheduled in three sessions and, held over a four-month period, from November 1997 through February 1998. During this time, a Steering Committee and State/Community Task Force helped to translate the ideas and themes for Kapolei High School into the physical design of the school. For further details of the design charette process see Kapolei High School: Creating a Dynamic Learning Community (Design Charette and Master Plan Report) (May 1998), prepared for Makai Villages Partnership by Mitsunaga and Associates, Inc.

The school campus will include one- or two-story buildings consisting of four classroom buildings (also called Neighborhoods), a Music Building, an Adult Education Center, a Forum (multipurpose gathering place with cafeteria function), a Library/Media Center, an Administration Center, and a P.E. Locker/Gymnasium Building. The total net space for all buildings will be approximately 198,000 sf and 302,000 sf gross floor space. The design charette process kept the total square footage of building spaces for Kapolei High School within the DOE guidelines for a comparable high school facility. (See Appendix E, Kapolei High School FADS.) The school campus will also include a football field, a baseball field, a softball field, play courts, staff and visitor parking with access to Kapolei Parkway, and a parent pick-up and drop-off area.

The school buildings will be designed in a manner to encourage the efficient use of energy resources. For natural ventilation and shade from the sun, the buildings will have high-pitched roofs, overhangs and large windows. Plumbing fixtures such will be selected to meet ultra-low flow requirements. Energy efficient, high-pressure sodium luminaires will be provided around the exterior of the buildings. General interior illumination will be provided by energy-efficient fluorescent luminaires.

The school will be designed as a year-round, four-track school to accommodate large enrollments, provide flexibility in the use of classroom spaces, and use financial and facility resources cost-effectively.

Alternatives

A. No Action Alternative

A no action alternative would, in the short-term, simply produce no development on the subject project site; the land would remain in its vacant state; and there would be no increased demands on infrastructure support. However, in the longer term, if no school is built on the site, residential development would eventually take its place in accordance with the proposed use in the 1993 Kapolei Master Plan. This alternative would not produce any educational facilities or create any additional job markets in Kapolei. Moreover, this alternative would leave the soaring number of high school age students in Kapolei with no high school in their immediate community; thus, forcing these school age residents to attend already overflowing Campbell High school. For all the foregoing reasons, the applicant has rejected this alternative.

B. Alternate Sites

Several alternate sites were considered before the final decision to place the school at the proposed site location. These alternate sites are covered in detail in the FEIS for Kapolei Village submitted by HCDCH in February 1988. Another site located in East Kapolei was also considered. Subsequently, after careful consideration of all available sites over several years of the planning process, HCDCH decided that the site of the High School should be at the existing proposed site for the best use of the available land and financial resources.

C. Alternate Facility Configurations

Several alternate site and building configurations were considered before the final decision for the Kapolei High School Master Plan was made. These alternate configurations are covered in detail in the Kapolei High School: Creating a Dynamic Learning Community (May 1998). Through series of brainstorming design charette process with significant community inputs, the master plan for the school was decided.

Findings and Determination

The proposed project will involve earthwork and construction activities. In the short-term, these activities may create temporary nuisances normally associated with construction activities. However, dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. It should also be noted that HCDCH also requires: preparation of a Dust Mitigation Plan, dust screens and notification to the Villages of Kapolei Association, or others, prior to commencement of site work. All construction activities are anticipated to be limited to normal daylight working hours. Impacts generated from construction activities are not considered adverse.

From a long-term perspective, the proposed project is not anticipated to result in adverse environmental impacts. There are no known significant habitats or rare, endangered or threatened species of flora or fauna or archaeological sites located on the project site. The proposed project conforms with area-wide improvements. Appropriate erosion control measures will be incorporated during the construction phase to minimize soil loss associated with construction activities. With regard to other infrastructure systems and public services, the proposed project should have no adverse environmental impact.

In light of the foregoing findings and based upon an analysis of project impacts in relation to the significance criteria (Section V), it is concluded that the proposed action will not result in any significant adverse environmental impacts. Therefore, HCDCH declares a Finding Of No Significant Impact (FONSI).

Development Summary

<i>Property Owner:</i>	State of Hawaii, Housing and Community Development Corporation of Hawaii (HCDCH)
<i>Property Location:</i>	Approximately 22 miles west of the primary urban center of Honolulu, near the center of the Ewa Plain, north of the Naval Air Station Barbers Point (NASBP), in the southwestern corner of the Villages of Kapolei.
<i>Proposing Agency:</i>	Housing and Community Development Corporation of Hawaii
<i>Tax Map Key:</i>	Zone 9, Section 1, Plat 16: Parcels 74 and portion of 75.
<i>Area:</i>	45 acres
<i>State Land Use District:</i>	Urban
<i>City and County Ewa Development Plan Designation:</i>	Urban
<i>City and County Public Facilities Map Designation:</i>	Future high school site
<i>City and County Zoning:</i>	AG-1 Restricted Agricultural District
<i>Act 15 Zoning:</i>	R3.5 Residential District
<i>Existing Uses:</i>	Underdeveloped lots
<i>Proposed Use:</i>	School (Note: A public school can exist over AG-1 and R3.5.)
<i>Proposed Action:</i>	The applicant HCDCH proposes to develop the Kapolei High School on approximately 45 acres of land in the southwestern corner of the Villages of Kapolei as part of the Kapolei master planned community in partnership with a private developer and in consultation with the State DOE and DAGS.
<i>EA Accepting Authority:</i>	Governor, State of Hawaii

Necessary Permits and Approval

- A. State of Hawaii
 - 1. Department of Health
 - a) *Best Management Practices
(Approved for the Kapolei Village Master Plan)*
 - b) *National Pollutant Discharge Elimination System*
 - 2. Department of Transportation
 - a) *New Access to State Highway*
- B. City and County of Honolulu
 - 1. Department of Planning Permitting
 - a) *Waiver Application
(LUO Requirement: Building Height Restriction & Off-street
Parking Requirement)*
 - b) *Building Permit
(Incl. Traffic Review Branch's Approval)*
 - 2. Department of Wastewater Management
 - a) *Sewer Connection Application*
 - b) *Industrial Wastewater Certificate*
 - 3. Department of Public Works
 - a) *Grading Permit*
 - b) *Erosion Control Report*
 - c) *Drain Connection Application*

**1.0
PROJECT OVERVIEW**

I. PROJECT OVERVIEW**A. PROJECT LOCATION, EXISTING USE, AND LAND OWNERSHIP**

The proposed Kapolei High School project is located on the southwest side of the Island of Oahu, approximately 22 miles west of the primary urban center of Honolulu. (See Location and Service Area Map, Figure 1.) The site is located within the Villages of Kapolei near the center of the Ewa Plain, north of Naval Air Station Barbers Point (NASBP), south of the Makakilo residential community and directly east of the proposed Kapolei Town Center. Further to the west lie the Campbell Industrial Park, Deep Draft Harbor, Ko'Olina resort/residential community, and the existing community of Honokai Hale. Major roadways providing general access to the site area include the H-1 Freeway and Farrington Highway, while Fort Barrette Road (aka Barbers Point Access Road) and Kapolei Parkway provide the direct access to the site. (See Vicinity Map, Figure 2.) For taxation purposes, the project site is identified as TMK 9-1-16:74 and por. 75. (See Tax Map, Figure 3.)

The site has been designated Urban for purposes of State Land Use. The site is zoned AG-1 Restricted Agricultural District by the City and County of Honolulu. The site is also zoned R3.5 Residential District under Act 15, Session Laws of Hawaii 1988. A public school can exist over such zoning. Designated use in the revised Kapolei Development Master Plan of 1993 by the State Housing and Community Development Corporation of Hawaii (HCDCH) shows the 45 acres encompassing the proposed project site as a high school. The Kapolei High School site is adjacent to proposed residential neighborhoods (Makai Villages 7 and 8) to the east. (See Villages of Kapolei Master Plan, Figure 4.) The north border of the project site fronts Kapolei Parkway while the west border fronts Fort Barrette Road. (See Appendix D, Photos of Project Site.)

The Kapolei High School project site is presently owned by the State of Hawaii and was previously leased to Oahu Sugar Company (OSCo) by the

former owner, Campbell Estate, for sugar cane cultivation. All sugar cane cultivation in this area was terminated by OSCo. Such former sugar cane fields located east of the project site across a drainage channel and south of the Kapolei Golf Course are owned by the State of Hawaii, but these fields have been allowed to lay fallow pending future development of the area.

The State of Hawaii owns the railway and roadway rights-of-way makai of the project site and bordering NASBP. There is a small strip of land between the railroad right-of-way and NASBP owned by Campbell Estate. The State of Hawaii owns Barbers Point Access Road and Makakilo Interchange. Kapolei Parkway, along the mauka frontage of the project site, is presently owned by the State of Hawaii but will eventually be dedicated to the City and County of Honolulu. Farrington Highway has been under disputed ownership. City and County of Honolulu shall acknowledge ownership and jurisdiction of all disputed highways including Farrington Highway under Act 288, SLH 1993.

The City and County of Honolulu owns Fort Barrette Park (Puu Kapolei). Naval Air Station Barbers Point (NASBP) is owned by the Federal Government. NASBP is in the process of being transferred to various State, City and County, and Federal agencies. The proposed project is to be constructed in the southwestern corner of the Villages of Kapolei and just west of the proposed Village 7 of the Villages of Kapolei.

B. PROJECT NEED

The City's 1995 First Biennial Report predicts that with public school enrollment projected to rise 10,000 in the next seven years (i.e. 1996-2003) a dire need for new schools is anticipated in the high-growth areas of Ewa and Central Oahu. (See First Biennial Report: On the Condition of the City and County General Plan and Development Plans, Planning Department, City and County of Honolulu, June 1995.)

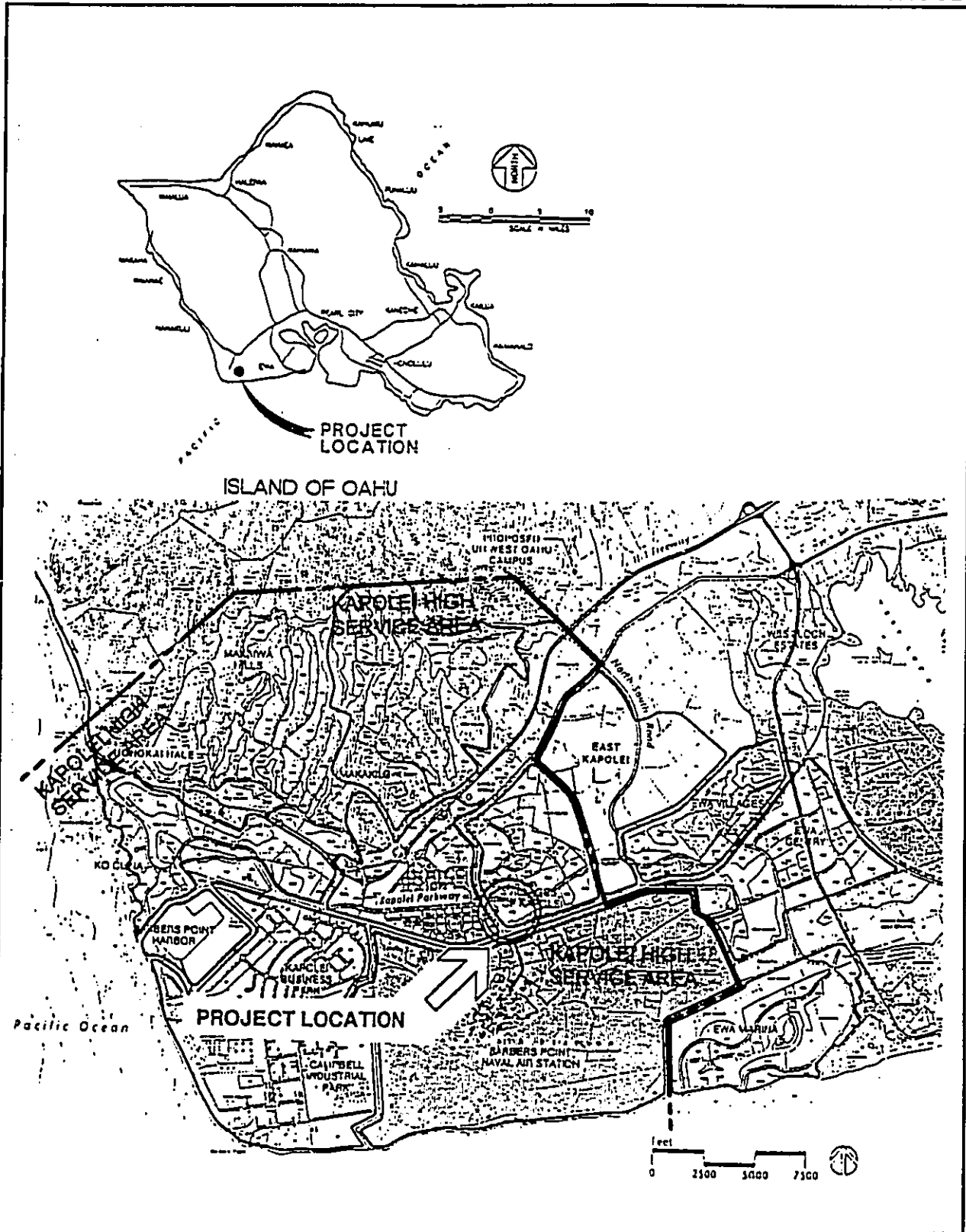


Figure 1: LOCATION and SERVICE AREA MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

Final Supplemental Environmental Impact Statement (FSEIS) for Ewa by Gentry (1993) reported that based on anticipated residential growth, additional schools would be required at the Villages of Kapolei, West Loch and Ewa Gentry. One elementary school was proposed for the Villages of Kapolei and one each at West Loch and Ewa Gentry. An intermediate school and a high school were also proposed for the Villages of Kapolei.

In 1993, the school enrollment in the Leeward District was 31,449 students and increased to a 1997 enrollment of 37,071 students (according to DOE's Sanford Beppu, August 1998). The Ewa area is one of the fast growing area in the Leeward District. The Ewa area is currently served by ten elementary schools, one intermediate school, and one high school: Barber Point Elementary, Ewa Elementary, Ewa Beach Elementary, Holomua Elementary, Iroquois Point Elementary, Kaimiloa Elementary, Kapolei Elementary, Makakilo Elementary, Mauka Lani Elementary, Pohakea Elementary, Ilima Intermediate, and Campbell High (according to DOE's Nick Nichols, August 1998).

Kapolei High School will serve 1,800 to 2,400 students from the surrounding residential communities: Nanakai Gardens to the west, Makakilo to the north, Villages of Kapolei to the east, and Barbers Point to the south. (See Location and Service Area Map, Figure 1; and Proposed Feeder Complex, Table 1.) If no new school construction occurred, enrollments at Campbell High School would soar far above capacity. In June of 1997, Ray Minami (CIP Planner and Planning Section Head of the DOE Facilities and Support Services Branch) indicated that both Ilima Intermediate and Campbell High School will be overburdened by 25 to 30 percent until Kapolei Middle and Kapolei High Schools are completed. According to Ray Minami, there is a dire need for the Kapolei High School to be completed as soon as possible to meet the present and future demand. The earliest completion date available for the Kapolei High School (Phase 1) will be the 2000 - 2001 school year. The target completion date is, however, subject to the timing and availability of adequate State funding.

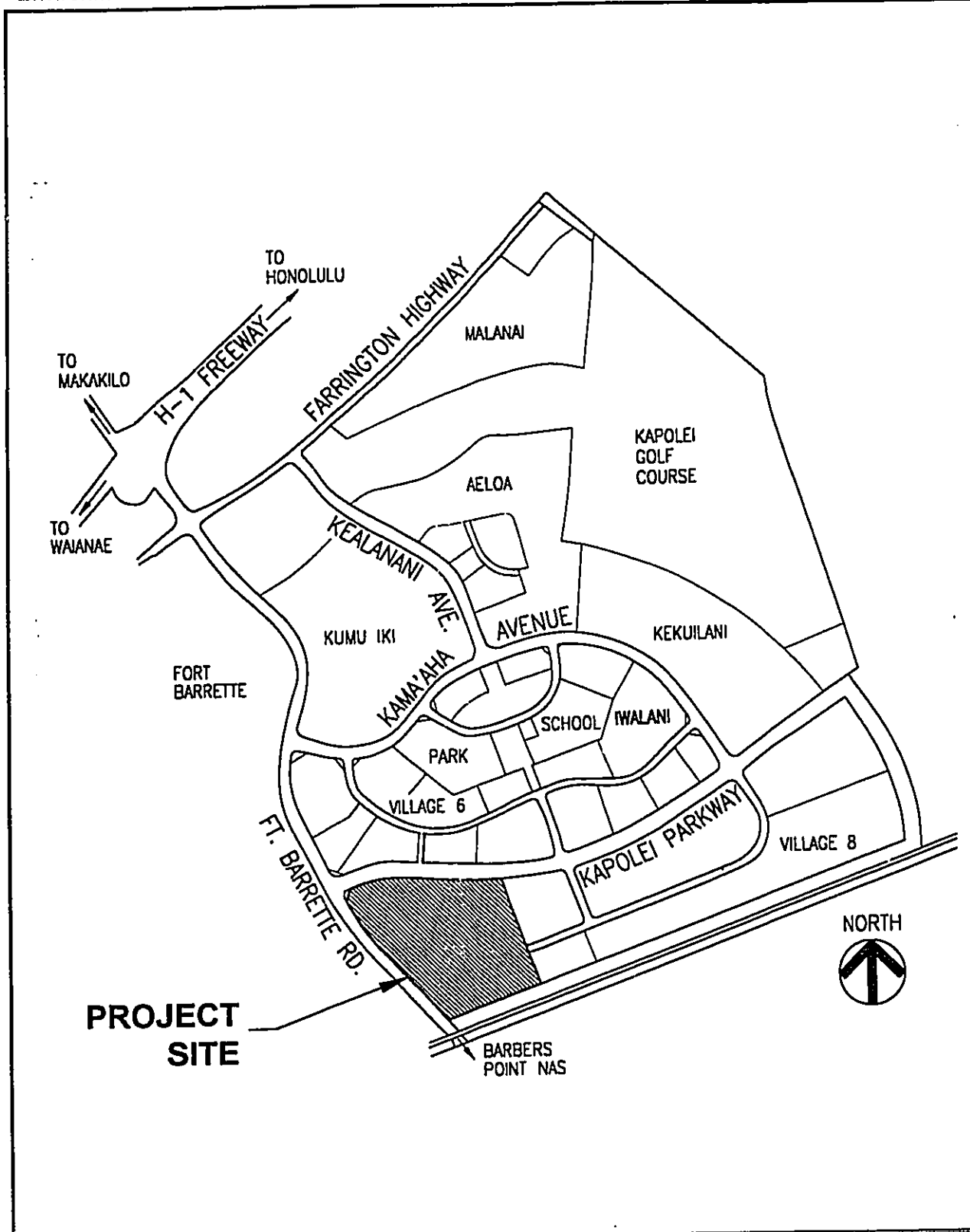


Figure 2: VICINITY MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

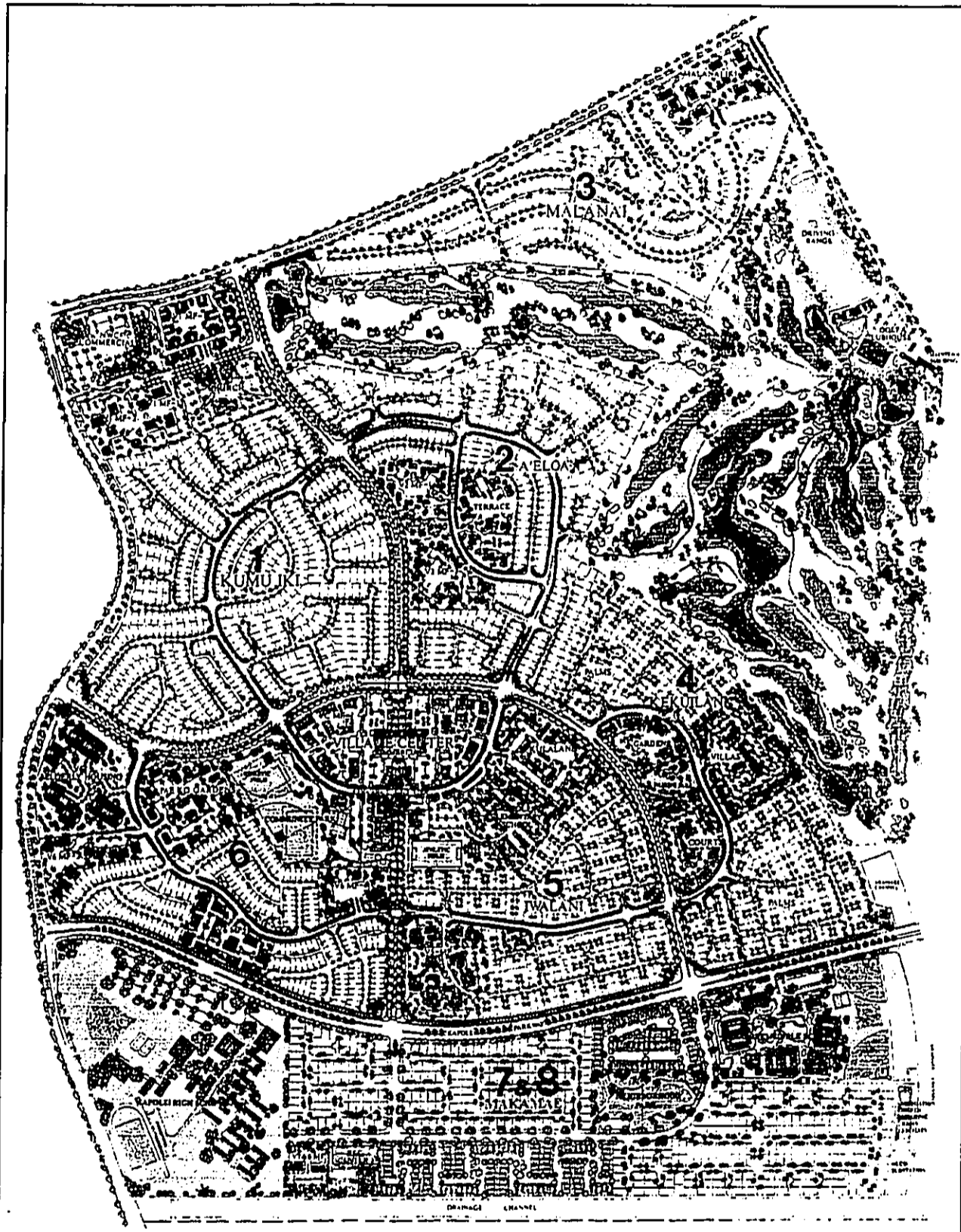


Figure 4: VILLAGES OF KAPOLEI MASTER PLAN

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

C. PROPOSED ACTION

The proposed action involves the construction of a High School on approximately 45 acres of land in the southwest corner of the Villages of Kapolei development. In preparing for the 21st century, the Kapolei High School will be the fourth public school in Hawaii to incorporate utilization of a design charette process that provided for significant input by the community that the school will serve as well as educators and students. The charette process consisted of a series of intense, brainstorming, project design sessions, in which all appropriate groups came together for periods of concentrated time. The process facilitated and accelerated communication and decision-making, and provided the opportunity for significant input by more people than the traditional design process allows.

The design charette for Kapolei High School was scheduled in three sessions and held over a four-month period, from November 1997 through February 1998. During this time, a Steering Committee and State/Community Task Force helped to translate the ideas and themes for Kapolei High School into the physical design of the school. This progressive approach has resulted in a new kind of school design—one that is humanistic as well as future-oriented, infused with local culture as well as advanced technologies. For further details on the design charette process see Kapolei High School: Creating a Dynamic Learning Community (Design Charette and Master Plan Final Report) (May 1998), prepared for Makai Villages Partnership by Mitsunaga and Associates, Inc.

The buildings which house classrooms are called neighborhoods with some 450 students in each of the four neighborhoods. Neighborhoods also include the science/technology labs as well.

The administration building/forum/music building complex will be close to the school entrance. The administration building is easily identified and welcomes students, parents and guests to the school. The forum will have convenient access from both school entrances, because it will function as a multipurpose gathering place for the community as well as the students. Furthermore, use of the forum for indoor performances will establish a natural relationship with the music building, which is adjacent to it. The combination of these functions into the three-building complex near the entry will give form to the village plaza just in front of it. A separate building for the media center will serve as the technological/ communications/resource hub of the school, with multi-purpose uses for students, adult education and the community-at-large.

Athletic facilities include a separate gym with athletic locker/shower facilities, offices and physical education (P.E.) classrooms. Outdoor facilities include a soccer/football field, one softball diamond, one baseball diamond, tennis courts, and play courts that can be used for basketball. Spaces are reserved for the possibility of an auditorium and a swimming pool in the future.

D. PROJECT SCHEDULE AND COST

Kapolei High School will be built in two increments. Construction of the first increment is targeted to be started in February 1999 and finished in August 2000. Building construction of the second increment is anticipated to be started in February 2000 and completed August 2001. The target completion date is, however, subject to the timing and availability of adequate State funding.

Total estimated cost for the proposed school construction is approximately \$75,000,000. The total cost includes approximately \$57,500,000 for building construction and \$17,500,000 for site works. This does not include design fees, permit fees, furniture and equipment costs, or any other costs not directly related to the school construction.

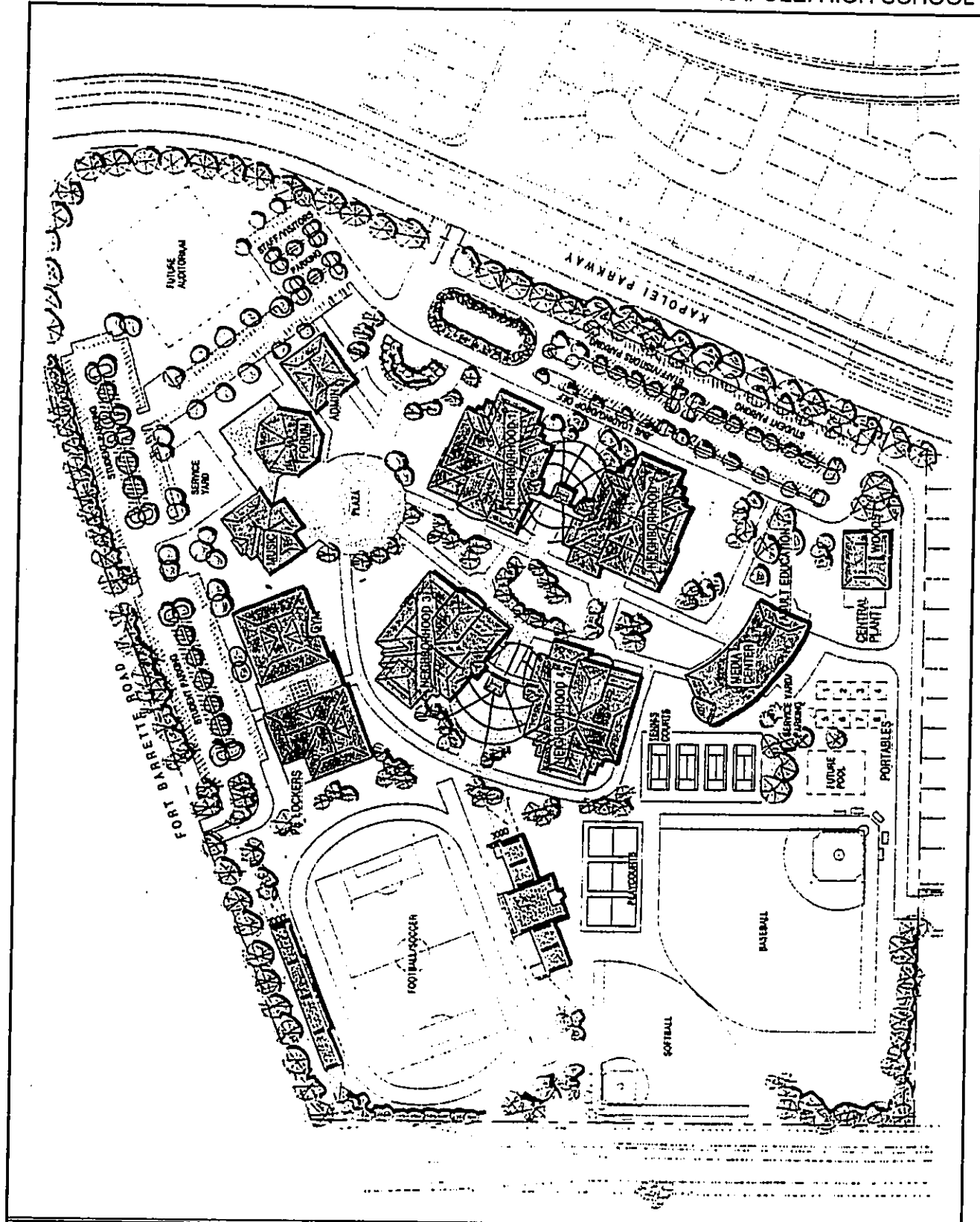


Figure 5: KAPOLEI HIGH SCHOOL MASTER PLAN

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

**2.0
DESCRIPTION OF THE
EXISTING ENVIRONMENT**

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Regional Context

The socioeconomic structure of the Ewa area has evolved from one that was primarily agricultural to one that is now principally oriented towards urbanization, including housing, commercial development, and tourism. With this evolution, the demand and need for educational facilities have become more acute. The Kapolei High School will service 1,800 to 2,400 ninth to twelfth grade students from surrounding communities including Nanakai Gardens to the west, Makakilo to the north, Villages of Kapolei to the east, and Barbers Point to the south. (See Location and Service Area Map, Figure 1.) It is designed as a year-round, four-track school to accommodate large enrollments, provide flexibility in the use of classroom spaces, use financial and facility resources cost-effectively, and provide a nurturing and exciting academic environment.

The project site and surrounding areas had been planted in sugar cane since the late 1800's and the entire Villages of Kapolei site was under lease to OSCo. Sugar cane fields still exist east of the Villages of Kapolei. This area, often described as East Kapolei, is owned by the State of Hawaii and managed by the Department of Land and Natural Resources (DLNR), however there are no plans to cultivate the fields and they will remain fallow pending future planned development in this area.

The Ewa-Kapolei area is comprised of many different and distinct communities, both old and new. Existing residential development in the vicinity of the project includes the older Honouliuli residential area, the West Loch residential development and golf course to the east, and the plantation-era Ewa Villages to the southeast. The City of Kapolei, NASBP

and proposed Ewa Marina project are also within a one mile radius of the site. To the northeast lies Waipahu town, and to the northwest, the residential community of Makakilo.

2. Climate

The climate in the project area is generally dry with northeast tradewinds providing the predominant wind direction, blowing 85 percent of the time with an average velocity of 9 knots. The Ewa Plain experiences light rainfall of approximately 20 inches per year.

Temperatures in the area range from 69-91 degrees Fahrenheit. The warmest average monthly temperature is 80.7 degrees Fahrenheit and the coolest month average temperature is 72.3 degrees Fahrenheit. The highest temperature of record is 93 degrees Fahrenheit, and the lowest temperature recorded is 53 degrees Fahrenheit.

3. Topography and Soil Characteristics

The major topographic feature in the area is the Waianae Range forming the major backdrop of the project area. Intermediate features in the area include: Puu Makakilo (972 feet elevation above mean sea level) (MSL), Puu Kapuai (1,047 feet MSL), Puu Palailai (492 feet MSL), all located directly north of the site; and two intermittent streams (Makakilo Gulch and Makalapa Gulch). The site is relatively flat. Average slope is less than one percent. Geologic formations of the site are coral outcrop (CR) for the most part which is generally hard and may require rippling for excavation. The remainder of the site is made up of alluvial deposition. The excavated coral material can provide a good source of low expansive structural fill. Cavities of varying sizes are often found in the coral formation. If encountered, backfilling of the cavities with grout or compacted fill may be required. (See Geological Soil Types Map, Figure 6.)

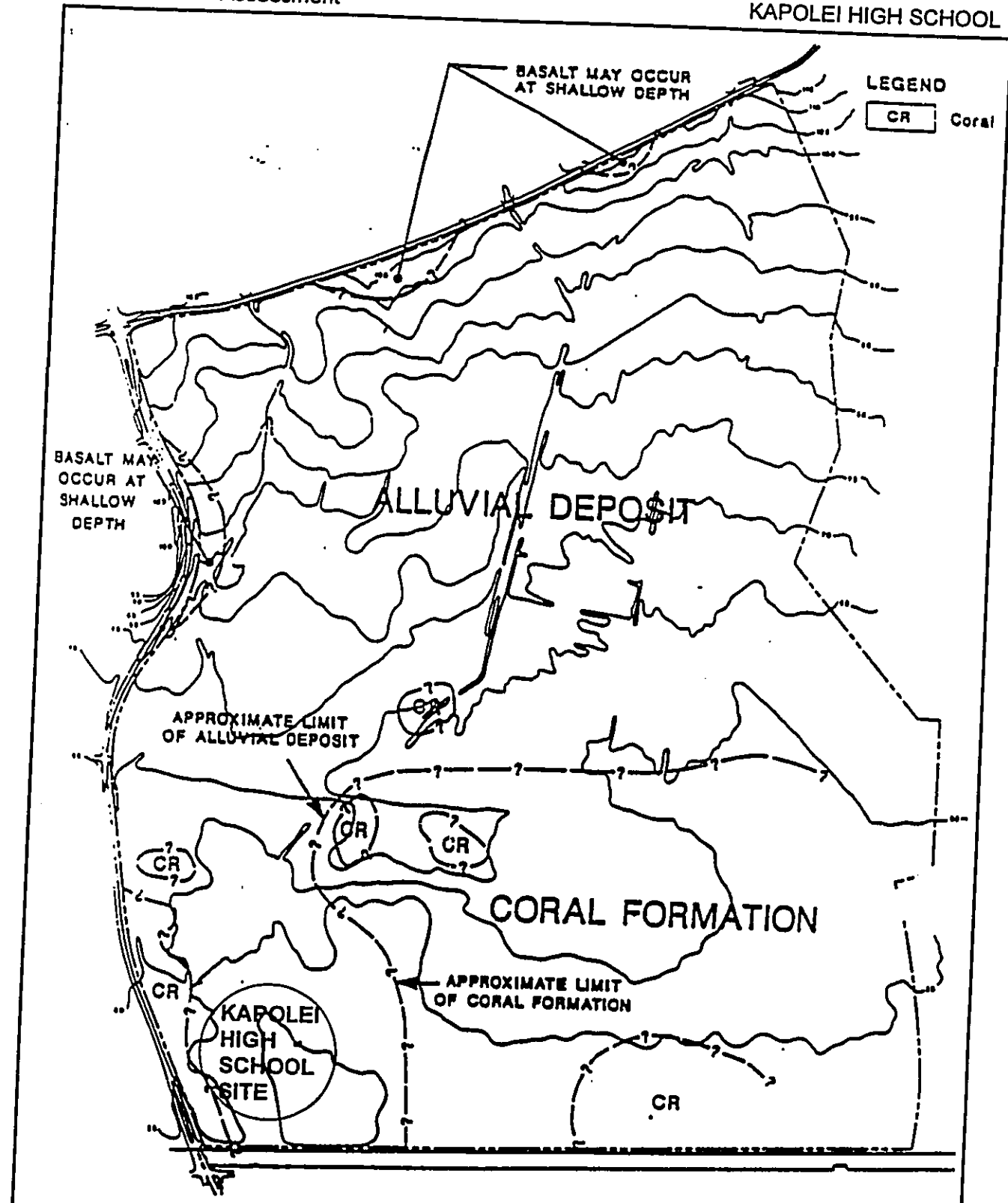



Figure 6: GEOLOGIC SOIL TYPES MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

4. Flood and Tsunami Hazard

According to the Flood Insurance Rate Maps (Federal Emergency Management Agency 1990) shown in Figure 7, the project area is designated Zone D, areas in which flood hazard is undetermined. However, according to Kapolei High School: Creating a Dynamic Learning Community (Design Charette and Master Plan Report), (May 1998), the Kapolei High School was designed to be outside of the 100-year flood plain as determined by the Federal Emergency Management Agency. Retention and detention basins have been provided by the Housing and Community Development Corporation of Hawaii for the entire Villages of Kapolei.

5. Flora and Fauna

The project site was under sugar cane (*saccharum officinarum*) cultivation prior to initial grading for the Villages of Kapolei in the late 1980's. Agricultural lands are dynamic systems, changing with the different stages of cultivation practices. Cane fields may vary from newly harvested, bare field to shore stature, open stands to tall stature, very dense stands. The fast-growing sugar cane tends to shade out and out-compete other plants to form large monodominant stands. The weedy species associated with sugar cane cultivation include nutgrass (*Cyperus rotundus*), swollen fingergrass (*Chloris inflata*), red pualele (*Emilia fosbergii*), snowthistle (*Sonchus oleraceus*), and hairy spurge (*Euphorbia hirta*). Presently, wild bitter melon (*Momordica charantia var. pavel*) and little bell (*Ipomoea triloba*) are locally common vines now found along the margins of the fields on the project site which is predominantly covered by common scrub vegetation. According to a biological study conducted by Char & Associates in 1987, which included the project site area, no threatened or endangered floras occur at the project site.

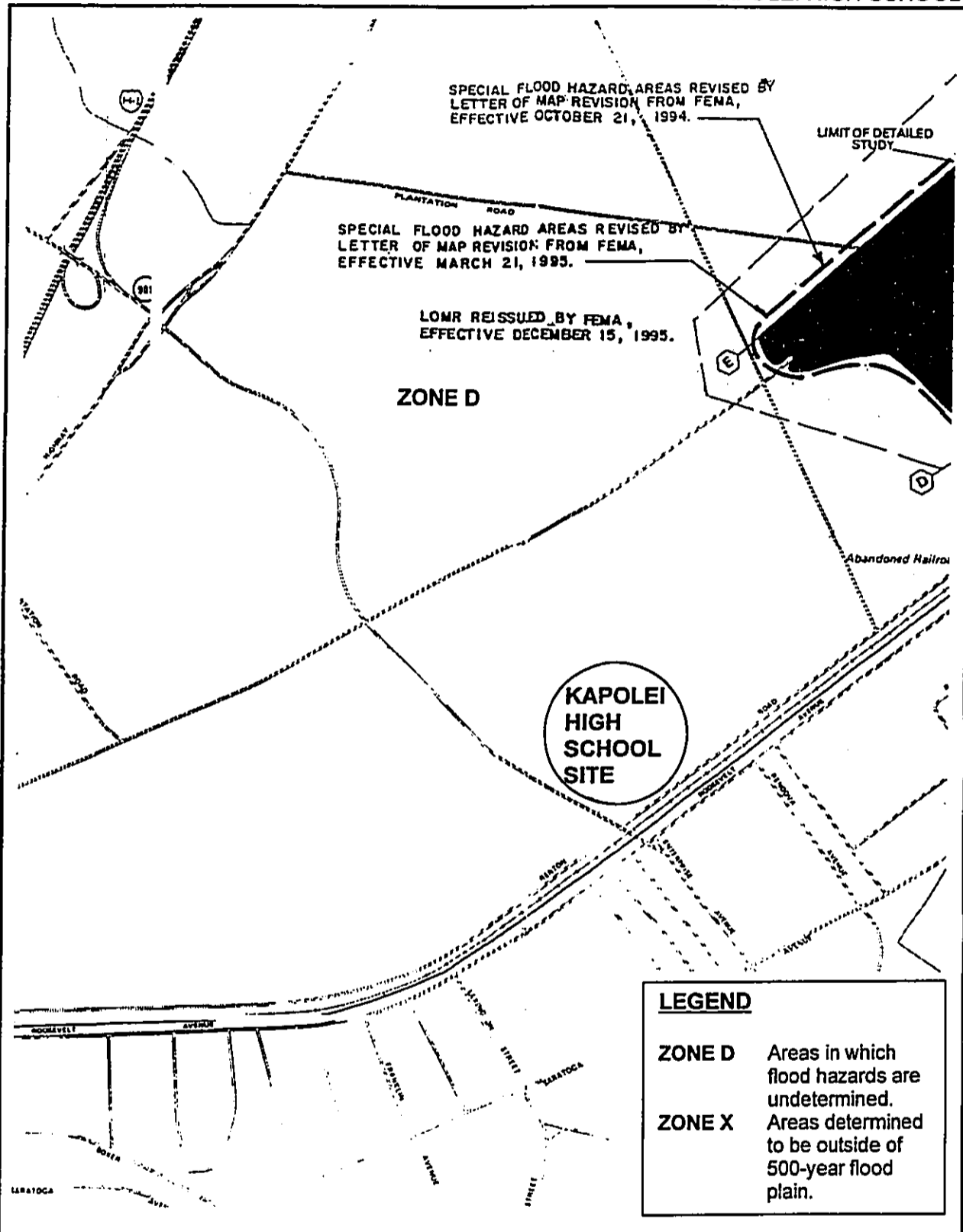


Figure 7: FLOOD INSURANCE RATE MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

Because of the many years the project site has been under sugar cane cultivation, the area is not a suitable habitat for native birds. Various surveys of the Ewa area conclude that the entire region has been disturbed for over a hundred years, resulting in severe alteration of the native ecosystem. The only mammals known to inhabit this altered ecosystem are introduced species such as feral cats, dogs, rats, mice, and mongoose.

6. **Archaeological Resources**

Based on a September 1987 comprehensive study of the entire Villages of Kapolei area (i.e. EIS Kapolei Master Plan Project) conducted by Paul Rosendahl, Ph.D., Inc., consulting archaeologist of the Kapolei area, which included the 45 acre site designated for the Kapolei High School, it was determined that:

" no potentially significant archaeological sites or features of any kind were encountered during the reconnaissance survey of the Kapolei Project area."

Also, the 1992 Environmental Impact Statement for the Kapolei Sports and Recreation Center involves a 475-acre site of which 150 acres borders the eastern side of the Villages of Kapolei. Based on the comprehensive document research and consultations with the Chief State Archaeologist, Ross Cordy during the completion of this EIS, it was determined that:

" the presence of any archaeological sites of any significance on the surface or subsurface of any of the alternate sites is unlikely because of the continuous cane cultivation for nearly 70 years."

7. Air Quality

There are no State Department of Health air monitoring sites in the immediate vicinity of the project site. The nearest monitoring stations are at Pearl City and Barbers Point, which measure particulate matter. Particulate matter levels are well below the State standard levels at these sites. Air quality at the project area was expected to be comparable or somewhat better, given the site's more rural location. The State Department of Health (DOH) monitors air quality at various locations on Oahu. Typically, however, each station does not monitor the full complement of air quality parameters.

The annual air quality measurements that were made nearest to the project site at the Barbers Point Station for each of the regulated air pollutants generally indicate that Ambient Air Quality Standards (AAQS) as defined by the DOH and Federal Environmental Protection Agency have not been exceeded. It appears likely that the State AAQS for sulfur dioxide, nitrogen dioxide, and lead are currently being met at the project site.

The ozone AAQS has not been exceeded during the past four years at the Sand Island monitoring station. Carbon monoxide readings from urban Honolulu at the DOH Building station indicate the State AAQS may be exceeded at a rate of one to three times per year, but only in traffic congested areas. As such, the AAQS for carbon monoxide at the project site has probably not been exceeded.

Several sources of industrial air pollution are located at Campbell Industrial Park, which is located at Barbers Point to the southwest about three miles of the project site. Companies currently operating at Campbell Industrial Park include the Chevron and PRI refineries, H-Power, and others. Prevailing winds from the northeast will carry these emissions

away from the project site most of the time, although southwesterly winds, occurring less than 5 percent of the time, will carry emissions toward the site. It should be noted that all the buildings of the Kapolei High School except the gym, forum and woods laboratory will be air-conditioned. Thus, most of the indoor activities will be unaffected by even the minimum impacts of air quality.

8. Noise

Existing noise levels in the vicinity of the project area are mostly generated from NASBP operations. Noise impacts of aircraft operations from NASBP on the project area and surrounding environment have been the subject of a number of studies. However, it should be noted that NASBP is being phased out and potential impacts associated with military aircraft in the area will not be an issue in the long-term.

Aircraft The major source of noise in the Ewa area is the aircraft taking-off from and landing at NASBP. The Department of Defense established the Air Installations Compatible Use Zone (AICUZ) program to protect the public's health, safety, and welfare while maintaining the operational capability of military air installations.

The purpose of the AICUZ program is to develop information which describes the noise level and flight clearance requirements of military airfield operations. This information can be used by landowners and government regulators in achieving the highest and best use of adjacent lands while assuring the health, safety, and welfare of existing and prospective residents.

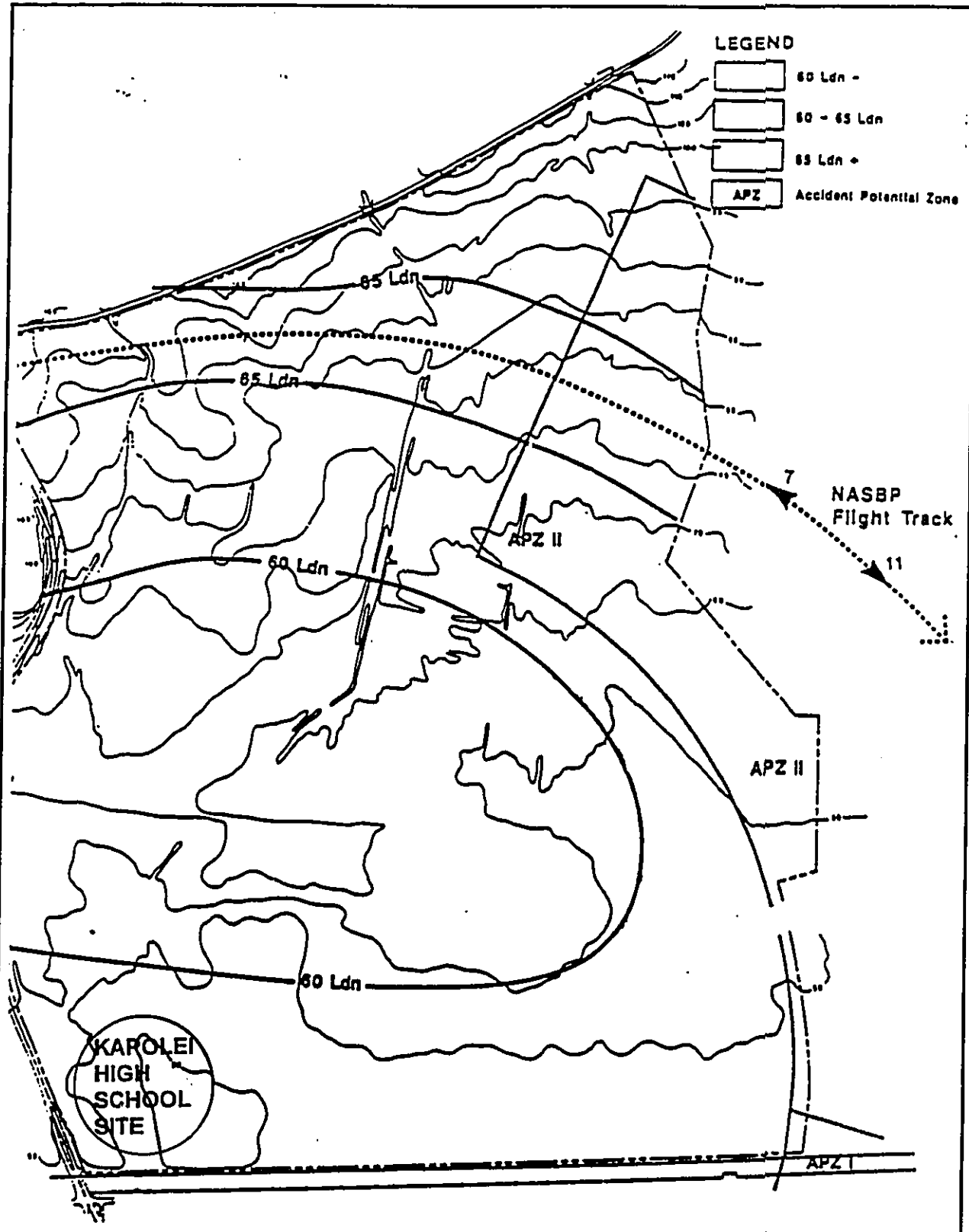


Figure 8: U.S. NAVY AICUZ MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

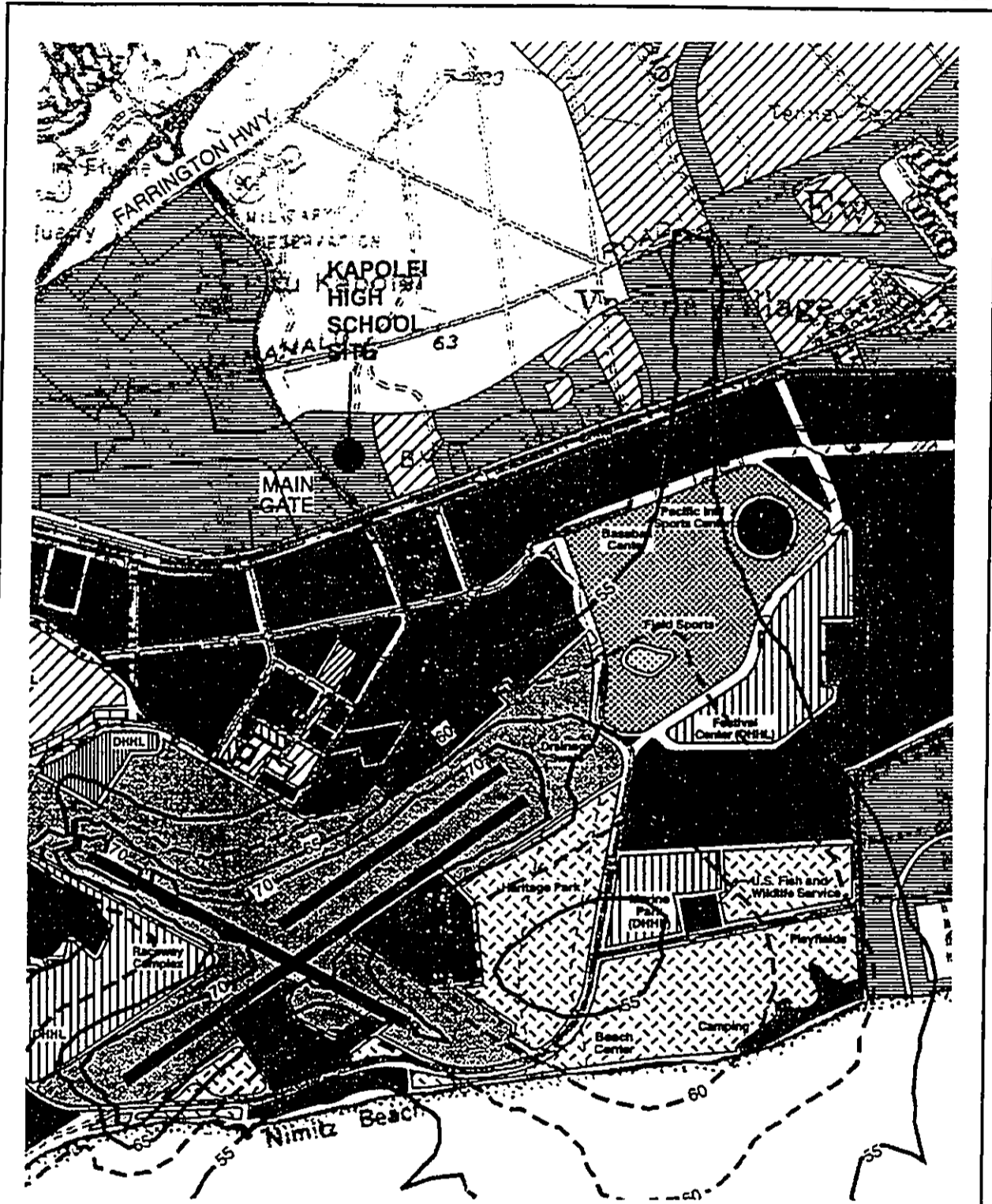
The NASBP AICUZ was first established in 1976, updated in 1984, and again in 1989. Also presented in Figure 8 which depicts aircraft noise effects from NASBP. The noise descriptor currently used by federal agencies to assess environmental noise is the Day-Night Average Sound Level (Ldn). As a general rule, noise levels of 55 Ldn or less occur in rural areas and urbanized areas which are shielded from high volume streets. In urbanized areas, levels generally range from 55 to 65 Ldn, usually dependent on traffic noise from motor vehicles.

For the purpose of determining noise acceptability for funding assistance from federal agencies (FHA/HUD and VA) to purchase residential property, an exterior noise level of 65 Ldn or lower is considered acceptable.

It should be noted that, due to Hawaii's open living conditions and the predominance of naturally ventilated dwellings, an exterior noise level of 65 Ldn does not eliminate all risks of noise impacts. For these reasons, a lower level of 55 Ldn is considered as the unconditionally acceptable level of exterior noise. However, upon consideration of the feasibility of applying the lower 55 Ldn standard government agencies such as FHA/HUD and VA have selected 65 Ldn as a more appropriate regulator standard. It has been this standard that is applied for all existing residential development in the vicinity of the High School site.

The U.S. Navy has prepared an Air Installations Compatible Use Zone (AICUZ) Study (1984) which established off-station contours and safety zones. The AICUZ Study identifies significant noise impacts to the project site. The project site lies within the 60 to 65 Ldn contours.

The 1984 AICUZ Report establishes three Accident Potential Zones (APZ-for aircraft landing and take-off operations) essentially



Source: DEIS for the Disposal and Reuse of Naval Air Station Barbers Point, Department of Navy (August 1998)

Figure 9: NOISE CONTOUR MAP (NASBP CRP)

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


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Honolulu, Hawaii

radiating off the runway and aircraft flight tracks. These include Clear Zone, APZ I and APZ II. A primary concern is that the building structure and/or improvements not reflect glare, emit electronic interference, or produce smoke. The entire 45 acres designated for the site is clearly outside even the least hazardous APZ II area. (See U.S. Navy AICUZ Map, Figure 8.)

Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of Naval Air Station Barbers Point (August 1998) evaluates the potential aircraft noise effects associated with proposed reuse plan after the 1999 base closure. The evaluation is based on the aircraft operations in 1993 and projected through the year 2020. Flight patterns for the State-preferred alternative (aka NASBP Community Redevelopment Plan) are designed to minimize noise impacts on the surrounding communities as most tracks are directed towards the ocean to avoid overflights over land.

Noise levels resulting from the effects of assumed aircraft operations and flight tracks are illustrated in Figure 9. These data show that noise levels of 55 Ldn or less would occur at the proposed school site. No significant noise impacts would occur as a result of the aircraft operations associated with the NASBP CPR.

9. Visual Resources

The predominant view from the site of the Waianae Mountain Range located approximately three miles to the north. Other views include the primary urban center with Diamond Head visible approximately 25 miles to the east; and the Pacific Ocean, NASBP, two miles to the south. (See Appendix D, Photos of Project Site.)

B. SOCIO-ECONOMIC ENVIRONMENT**1. Land Use History**

In 1793, Vancouver, the British explorer, anchored off the entrance of what is presently designated as West Loch. According to Vancouver, the area did not seem to be populous, nor to possess any great degree of fertility. However, he was told that at a short distance from the sea, the soil was rich, and all necessaries of life were abundantly produced. Historically, the area was famous for the taro variety known as kai koi o Ewa. These fields no longer exist in the Ewa area.

In 1879, James Campbell developed the first artesian well near the West Loch area. The development of a reliable water source in this barren area provided the water for the development of the sugar industry which flourished for the next 60 to 70 years.

The project site is in the Villages of Kapolei Project which itself is part of the larger Campbell Estate Long-Range Master Planned Development for Kapolei. The State Housing and Community Development Corporation of Hawaii is developing the Villages of Kapolei master planned residential community at Kapolei. The first homes in the Villages of Kapolei were completed in 1990, with up to 5,000 units on 890 acres planned at buildout.

Kapolei will include a variety of residential types, including market rate and affordable single and multi-family units, rental and elderly housing. Full ranges of community support facilities have been and continue to be constructed at Kapolei, including an 18-hole golf course, parks and recreational amenities, churches, schools and commercial buildings.

2. Population

A population policy of the City and County General Plan is to encourage development within the secondary urban center at Kapolei and the Ewa and Central Oahu urban-fringe areas ... to meet housing needs not readily provided in the primary urban center.

The following Table 1 compares the General Plan's population growth guidelines with population projections for Ewa, for the years 2010 and 2020. The figures are based on a projected Oahu-wide population of 1,012,100 persons in the year 2010, and 1,071,200 persons in the year 2020 (Planning Department, Preliminary Data 1995).

Table 1
Year 2010 and 2020 Population in Ewa: Policy vs. Projection

	<u>Share of Island Population</u>	<u>Population</u>
Year 2010		
General Plan Policy	12.0% - 13.3%	121,452 - 134,609
Planning Dept. Forecast*	10.2%	103,300
Year 2020		
General Plan Policy	12.0% - 13.3%	128,544 - 142,470
Planning Dept. Forecast*	11.7%	124,800

*Preliminary Data, Honolulu Planning Department 1995. Population forecast includes DP approved and proposed projects, including The Villages of Kapolei. Source: Planning Department

3. Economy

Cumulatively, the increased population in the Ewa region will provide additional justification for already-proposed regional infrastructure improvements, public services and commercial development. Although the project will not result in a net increase in Oahu's population or employment, it will cause population and jobs to be located in Ewa. This growth of the Ewa region is consistent with City and State population policy objectives.

C. PUBLIC SERVICES**1. Recreational Facilities**

Existing public parks in the project region include Ewa Mahiko Neighborhood Park, Puuloa Neighborhood Park, Makakilo Community Park, Geiger Park Gentry, and the new Kapolei Community Park. In addition, the City is planning a new district park at either Ewa Mahiko or near Ewa Villages. The City also expects to acquire a major new regional beach park within the Barbers Point Naval Air Station upon closure of the base.

2. Police and Fire Protection

The area is presently served by the Waianae Police Station in the Honolulu Police Department's District 8. The Waianae station services the area from Kunia to Kaena Point. There are presently five beats in the Ewa area with one officer per beat, 24-hours a day, seven days a week. The police officers assigned to the Ewa area work with the community through two channels: the volunteer Neighborhood Security Watch and the Community Policing Team 6, the latter an effort to directly involve the community with crime prevention efforts. According to sources at the Honolulu Police Department (HPD), there are plans to increase the total number of police beats in the Ewa area: five beats to serve Kapolei and three beats in the Makakilo area. The proposed Kapolei Police Station is planned for completion by 1999.

The Ewa area is served by four fire stations: Makakilo Station, serving Makakilo, upper Kapolei and Ko'Olina Estates; the Waipahu Station, serving lower Kapolei, Ewa by Gentry and Ewa area to Renton Road; the Ewa Beach Station, serving all of lower Ewa Beach up to Renton Road; and the recently completed Kapolei Fire Station. The Waipahu Station assists the Ewa Beach Station when necessary.

The Kapolei Fire Station has both a ladder company and an engine company with a total of 10 firefighters. The Waikele Fire Station due for completion in 1998, will also assist the Kapolei Fire Station when necessary.

3. Solid Waste

Refuse collection from residential areas in the Ewa-Kapolei area near the project site is provided by the City and County of Honolulu. Non-residential uses and multi-family residential areas are serviced by private refuse collection companies. Residential waste is transported to the City and County of Honolulu's H-POWER (Honolulu Program of Waste Energy Recovery) waste-to-energy combuster, located at the James Campbell Industrial Park. Ash residue and nonprocessable waste are then disposed of at the Waimanalo Gulch Landfill in east Oahu.

4. Health Care

Saint Francis-West Medical Center is the full-service hospital closest to the proposed project. The hospital is approximately five to 15 minutes from the site, depending on traffic conditions. St. Francis-West provides a full range of hospital services, including emergency care, outpatient treatment, laboratory and x-ray facilities and medical offices. The hospital has 100 licensed beds available. Ambulance service is coordinated with the City and County, and the hospital has a helipad for medivac transport.

Other medical facilities within a 20 to 30 minute drive include the Waianae Coast Comprehensive Health Center, Pali Momi Medical Center at Pearlridge, Wahiawa General Hospital, and Kaiser Permanente's Punawai Clinic in Waipahu. Non-emergency services are also provided by local general physicians.

5. Schools and Libraries

A Social Impact Assessment conducted by Community Resources, Inc. prepared in 1994 and updated in 1995, analyzed schools and libraries. The 1994 study described existing conditions and estimated project demand for these facilities, as summarized below.

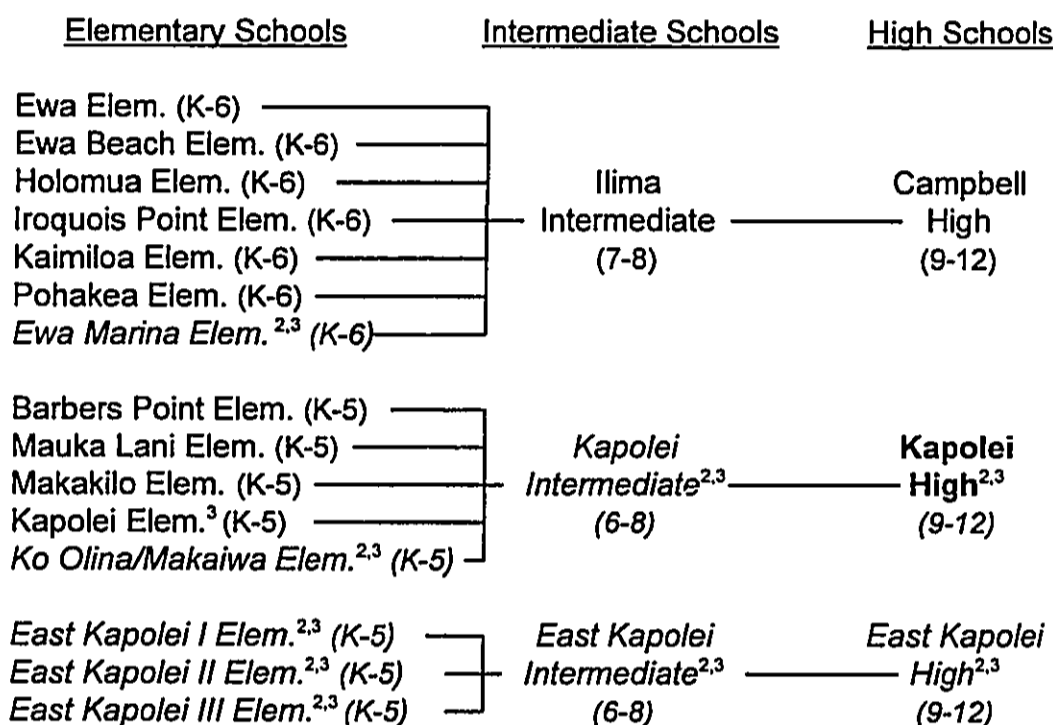
Primary and Secondary Schools. The project is within the State Department of Education's (DOE) Leeward School District. The service area boundaries for the high school are Nanakai Gardens to the west, Makakilo to the north, Villages of Kapolei to the east, and Barbers Point to the south. (See Location and Service Area Map, Figure 1.) According to the DOE, the rapid development in the Ewa-Kapolei area has created a pressing need for additional schools and classroom space. The proposed and projected Capital Improvement Program (CIP) budgets for the next three bienniums are already severely strained by the lack of CIP funds to build adequate classrooms.

According to DOE's Nick Nichols, the Ewa area is currently served by ten elementary schools, one intermediate school, and one high school (1996 actual enrollment /2002 projected enrollment in parentheses): Barber Point Elementary (515/497), Ewa Elementary (527/649), Ewa Beach Elementary (520/614), Holomua Elementary (453/1147), Iroquois Point Elementary (1222/1220), Kaimiloa Elementary (734/766), Kapolei Elementary (790/1305), Makakilo Elementary (628/626), Mauka Lani Elementary (656/725), Pohakea Elementary (568/617), Ilima Intermediate (1322/1097), and Campbell High (2022/2365).

Kapolei Elementary School opened in 1993, and the Department of Education has plans to open a new Kapolei Middle School on 20 acres east of the proposed Kapolei High School site in the Villages of Kapolei. Students graduating from the Kapolei Intermediate School will attend the

proposed Kapolei High School. (See Proposed Feeder Complex, Table 2.)

Table 2
Proposed Feeder Complex (By 2015)¹



- Notes: 1. Source: State DOE (Nick Nichols, August 1998)
 2. Planned new schools
 3. Year round, Multi-track schools

Post-Secondary Education. The nearest post-secondary educational facility is the University of Hawaii-West Oahu, located in temporary quarters at the Leeward Community College (LCC) in Pearl City.

In 1995, in response to the economic recession in the State, Governor Ben Cayetano negotiated a land exchange with Campbell Estate to provide funding to build UH-West Oahu at Kapolei. According to the terms of this agreement, the University of Hawaii has received 941

acres of land above the H-1 Freeway to Kapolei, the second city, on the slopes of Puu Kapuai. Among other conditions, the land exchange involves the improvement and sale by the State of the original UH-West Oahu site, below the H-1 Freeway, with the use of net proceeds from the sale designated for development and construction of the UH-West Oahu campus.

In 1996, UH Board of Regents (BOR) approved the Governor's plan and decided that UH-West Oahu will remain in an interim site at LCC until a new campus is built. However, the BOR decided that UH-West Oahu will be expanded by the movement of 19 buildings from Kapiolani Community College (KCC). In April 1996, the Legislature approved funding for moving the buildings from KCC to UH-West Oahu and approved the Governor's land exchange plan for funding a new campus.

A permanent home for the institution has been identified, and for the first time the Legislature has established mechanisms to fund the development and construction of a new campus in Kapolei. Meanwhile, UH-West Oahu continues to function as an upper-division baccalaureate institution providing an essential service to the people of West Oahu.

Library Services. Ewa Beach Public Library serves approximately 40,000 residents within the Ewa area. The combination school and public library is a full-service library situated on the Campbell High School campus. The State government is planning to construct a major new Kapolei Library within the City of Kapolei, to serve as a second anchor to Honolulu's Downtown library. There are also long-term plans to separate the Ewa Beach School and public library into two facilities.

D. INFRASTRUCTURE**1. Roadways**

The project site is well served by regional and local road systems (Figure 2). Major public roadways adjacent to the site include Farrington Highway, a two-lane highway mauka of the project site and Barbers Point Access Road (aka Fort Barrette Road), a two-lane highway just west of the site. Further north of the site is the H-1 Freeway allowing access to the site via the Makakilo Interchange. The H-1 Freeway has been upgraded from four lanes to six lanes.

Also, the project site fronts Kapolei Parkway, a six-lane roadway which fronts the entire northern border of the site. Future plans for Kapolei Parkway include extension of the road eastward over and across the drainage channel via a bridge, towards Ewa by Gentry and Ewa Beach.

Other roadways located in and around the project site include: the State-owned OR&L Railroad right-of-way (ROW), located south of the project site, extending from Pearl Harbor to the Ko'Olina Resort; and Hanson Road, paralleling the OR&L ROW inside the NASBP boundary, connecting Geiger Road and Fort Weaver Road, providing military access to the major residential communities of Ewa Beach and Iroquois Point.

The Ewa Region Highway Master Plan is specifically referred to as a working plan to maintain consistency with ongoing land use development in the Ewa region. For further details see Ewa Region Highway Transportation Master Plan, 1997 and 2005 Roadway Concepts (February 1992). The study has generated roadway concepts for future years based on planning projections. In addition, the major facilities of the roadway master plan are shown on the Kapolei Area Long-Range Master

Plan. Information from these and other relevant sources was incorporated in the Final Traffic Impact Study Villages of Kapolei in 1994 by R. M. Towill Corporation.

All of the above studies were updated relevant to the Kapolei High School in a more recent study in July 1998, by Austin, Tsutsumi & Associates, Inc., Traffic Assessment: Kapolei High School. The study provides preliminary determinations that are to be used for further discussions with the City and County Department of Planning and Permitting (DPP), Traffic Review Branch and the State Department of Transportation (DOT) during the review and approval process for vehicular access off Kapolei Parkway and Fort Barrette Road, respectively. Primary vehicular access off Kapolei Parkway and secondary vehicular access off Fort Barrette Road are subject to review and approvals by the C&C DPP, Traffic Review Branch and the State DOT.

The 1998 traffic study assessed the traffic impacts of the proposed Kapolei High School and appurtenant facilities on the adjacent street, and evaluated proposed access driveways to the school site.

Traffic on Farrington Highway, west of Barbers Point Access Road, exhibits direction splits during peak periods typical of suburban commuter routes. East of Barbers Point Access Road, eastbound and westbound traffic are almost evenly distributed. Major employment areas (Campbell Industrial Park and NASBP) attract west bound traffic during the morning which balances eastbound commuter traffic from the Kapolei residential area.

Highest hourly traffic on Farrington Highway adjacent to the project site occurs in the afternoon. However, in the short-term it is expected that most of the traffic involved with the High School will occur within the Villages of Kapolei complex itself along Fort Barrette Road and along Kapolei Parkway which ends at the northeast corner of the project site. Moreover, Farrington Highway is currently being widened from a two-lane to a four-lane highway. Therefore, no major long-term traffic impacts will result.

The Fort Barrette Road access, however, would require construction of intersection improvements, such as a left-turn deceleration and storage lane for southbound traffic and a right-turn deceleration lane for northbound traffic on Fort Barrette Road, in order to mitigate the effects of school and special events traffic on Fort Barrette Road. It should be noted that Fort Barrette Road will be widened to a four-lane divided arterial with a right-of-way of 100 feet under the Campbell Estate master plan.

NASBP, which is currently owned by the Federal Government, is in the process of being transferred to various State, City and County, and Federal agencies. The redevelopment of NASBP will change traffic patterns in the area, particularly when additional roadways are extended from the City of Kapolei and other adjacent areas to NASBP. These additional public accesses are being studied by the Barbers Point Redevelopment Commission and are described in the report Naval Air Station Barbers Point Community Redevelopment Plan Summary Report (March 1997).

2. Wastewater

The area of the project site and along with the greater Ewa-Kapolei area is served by the City & County's Honouliuli Wastewater Treatment

Plant (WWTP), adjacent to the NASBP. The Honouliuli WWTP also services Central Oahu and the Primary Urban Center areas west of Red Hill, with the exception of military installations and facilities. Wastewater currently receives advanced primary treatment and is disposed via the Barber's Point Ocean Outfall.

The secondary treatment system at Honouliuli was recently completed, and it was designed to accommodate 13 million gallons per day (MGD) of sewage for secondary treatment. The City plans to reclaim and distribute this wastewater effluent, provided that paying customers can be found for the non-potable water. This is consistent with current policies established by the City and County's Department of Wastewater Management requiring that treated effluent be used for irrigation and other uses where feasible.

A wastewater system with sewage transmission line capacity is in place for the Villages of Kapolei. The High School site will be connected to the existing system provided that the City and County Department of Wastewater Management approves sewer treatment capacity and connection approvals to the Honouliuli WWTP.

3. Water

In 1987, the State enacted the State Water Code in order to protect, control and regulate the use of the State's water resources. The State Commission on Water Resource Management (CWRM) is responsible for the administration of the State Water Code, and has designated water management areas (WMAs) in those areas where water resources may be threatened by existing or proposed withdrawals or diversion.

The project area is located within the Pearl Harbor Water Management Area (WMA), the largest groundwater body on Oahu, which supplies over 50 percent of Oahu's municipal water demand. Groundwater withdrawals within the Pearl Harbor WMA are regulated by the CWRM. The City & County Board of Water Supply (BWS) coordinates the development and allocation of potable water for urban use on Oahu. Based on the design enrollment of the students for the Kapolei High School, the water demand was calculated to be 54 gallons per day (GPD) by the project's water engineers of R. M. Towill. Potable and non-potable water allocation for the school is presently available.

A dual water system is planned for the project in accordance with City and State policies which encourage the conservation of potable water resources and allow the use of non-potable water for irrigation and other appropriate uses. Non-potable systems in single family residential areas are not encouraged due to potential health and liability issues. However, current City policies require development of an adequate non-potable water supply for schools, parks, commercial projects and for irrigation along major roadways. Water efficient landscaping should be used whenever and wherever possible to reduce irrigation demand. The C&C BWS has also noted that installation of a dual water system may be an option within multi-family residential areas, to further decrease potable water demand.

There is presently an existing potable water system in place which serves the Villages of Kapolei. The High School will be connected to the existing system. Also, a non-potable irrigation system exists within Kapolei and is in the process of being activated. Irrigation for the High School will be connected to the existing non-potable system along Kapolei Parkway. Non-potable water allocation is already available.

4. Drainage

The proposed Kapolei High School is located in the Kapolei Drainage Basin. (See Ewa Regional Drainage Map, Figure 10.) The area of the Kapolei Drainage Basin is approximately 2,100 acres. In general, storm runoffs from the upland areas above the Villages of Kapolei are conveyed through two culverts crossing Farrington Highway to the Kapolei Golf Course. From the golf course, runoff is routed to a channel along the southern boundary of the Kapolei High School. Runoff from the Villages of Kapolei system is also discharged to this channel. The channel flows drain to a coral pit within NASBP. The coral pit is on the lands to be retained by the Navy after the closure of the base in 1999.

Prior to improvements constructed for the Villages of Kapolei, storm runoff from the upland areas passed through the project site cane field ditches to NASBP. Some of the runoff entered a large coral pit located in NASBP, while some runoff flowed through NASBP.

For the development of the Villages of Kapolei, Kapolei Village Drainage Master Plan was prepared in 1991 and accepted by the City and the Navy as well as the State. A primary goal of the drainage plan was to limit runoff rates and sediment loads entering the NASBP to existing amounts for varying storm magnitudes.

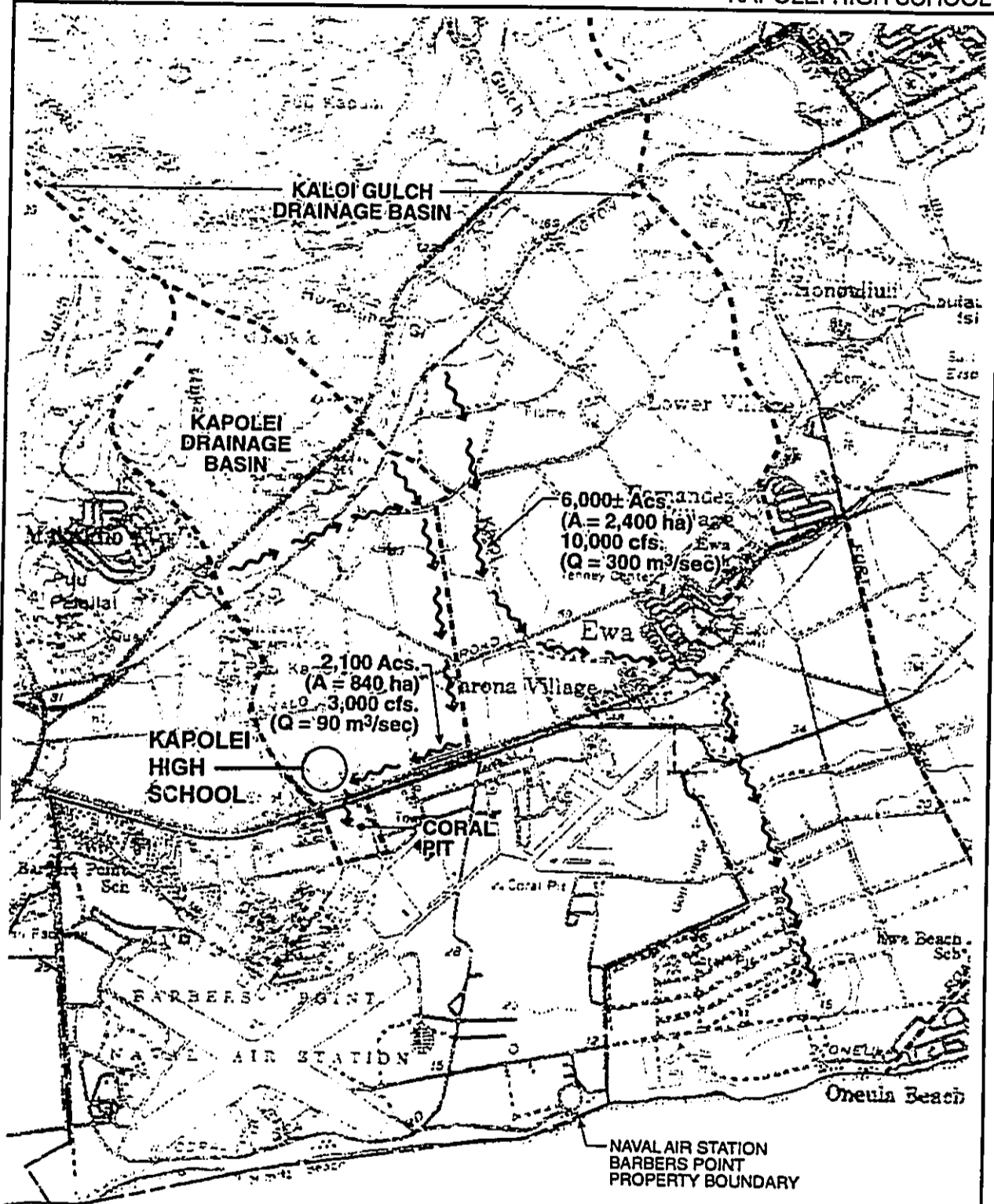
Increase in runoff due to the development of the Villages of Kapolei was estimated as approximately 126 acre-feet for a 100-year, 24-hour storm. Minimum amount for onsite disposal was set at 247 acre-feet to not increase runoff into the NASBP for the design 100-year, 24-hour storm. For the 100-year, 24-hour storm, the peak rate entering the NASBP was estimated to increase from 3,526 cfs to 4,077 cfs as a result of the development of the Villages of Kapolei.

As a Best Management Practice (BMP) for the Villages of Kapolei development, detention basins (Kapolei Golf Course and lower channel) were constructed to route storm water to offset these increases and maintain the "pre-development" drainage conditions for the downstream portions of the watersheds. Numerous other drainage improvements were made for the Villages of Kapolei which includes the project site for the Kapolei High School.

The golf course has capacity to dispose nearly 200 acre-feet of runoff during the 100-year, 24-hour storm to ensure that the Village of Kapolei does not increase runoff to the NASBP. Runoff from the golf course enters the lower channel, located along the southern and lower boundaries of the proposed Kapolei High School. Dimensions include an average bottom width of approximately 30 feet and a depth of approximately 15 feet.

There is an existing buffer strip between the lower channel and the NASBP, and a multi-cell box culvert is located at the entrance to the NASBP beneath Franklin D. Roosevelt Road. Runoff from the buffer strip flows through this culvert and subsequently into the NASBP coral pit. When analyzed in conjunction with the golf course and lower channel, it was determined that the NASBP coral pit would not overflow during the 100-year, 24-hour storm.

The internal drainage system for the school will use swales wherever possible, with a minimum slope of one percent. Drainage inlets run along the Kapolei Parkway and under the six-foot wide sidewalks which border the High School site to the north. Disposal of storm runoff from the High School project site is accomplished primarily through the drainage channel located south of the project site.



Source: DEIS for the Disposal and Reuse of Naval Air Station Barbers Point, Department of Navy (August 1998)

Figure 10: EWA REGIONAL DRAINAGE MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii


MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

It should be noted that any grading that might affect drainage will be in conformance with the City and County of Honolulu Grading Ordinance and also in accordance with the Federal National Pollutant Discharge Elimination System (NPDES) requirements, and the recommendations of the geotechnical engineer.

5. Electric Power and Telephone Service

Off-site power and communication requirements include a telephone switching station to serve the proposed Kapolei Town Center and the project site, and an electrical substation when existing power capacities are exceeded. Proposed on-site power and communications improvements consist of electrical and telephone conduits provided along the major roadways. The system also includes street lights and hand holes. Electrical, telephone, and cable systems are underground within the development and adjacent to the project site. (See Power Map, Figure 11.) Presently, street lights run along Kapolei Parkway which front the northern border of the High School site. Also, the high school is planned to include a telecommunications system which includes the development of conduit and raceway infrastructure and cabling systems.

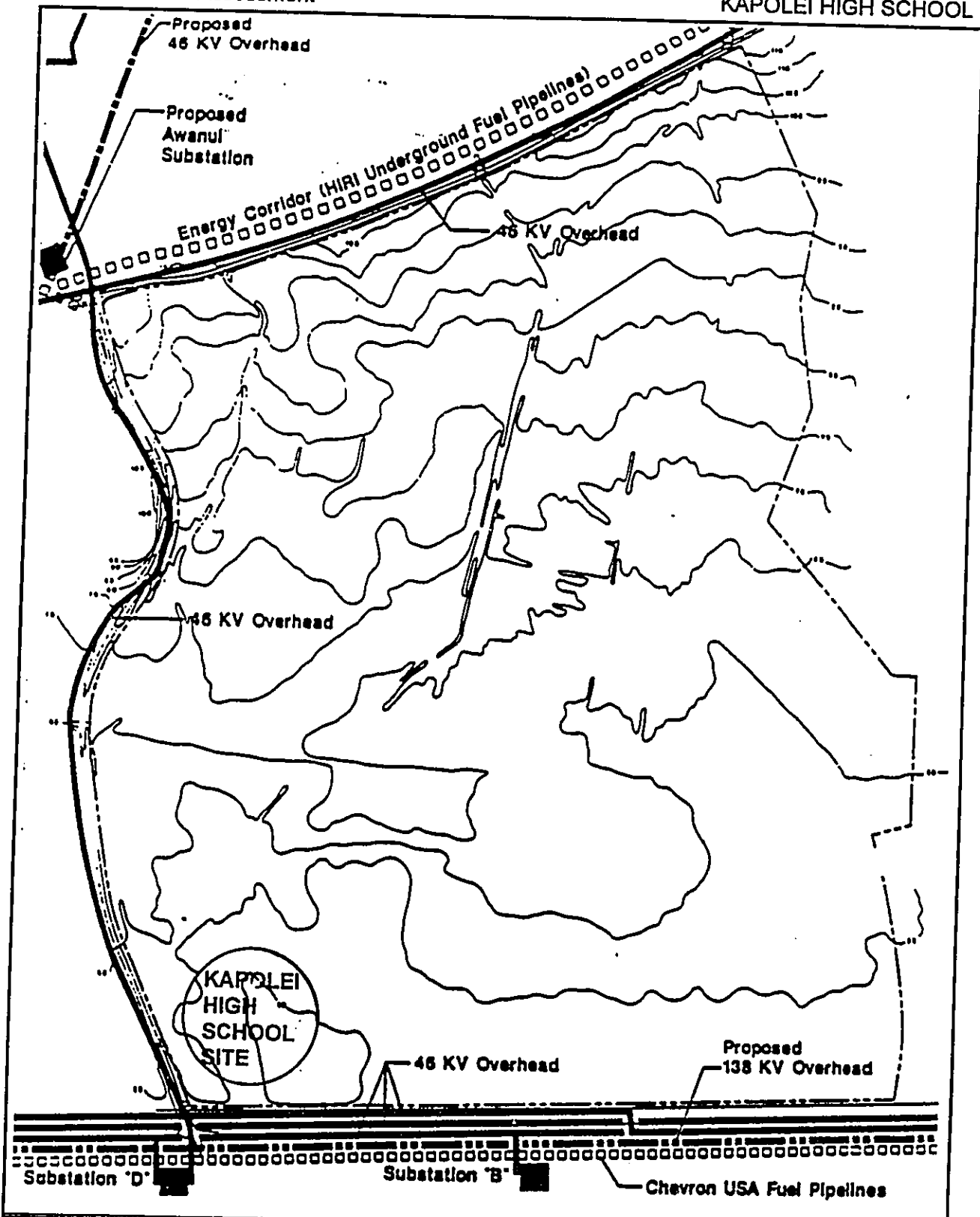


Figure 11: POWER MAP

Kapolei High School Master Plan
Ewa, Oahu; State of Hawaii

MITSUNAGA & ASSOC., INC.
Honolulu, Hawaii

**3.0
POTENTIAL IMPACTS
AND
MITIGATION MEASURES**

III. POTENTIAL IMPACTS AND MITIGATION MEASURES**A. PHYSICAL ENVIRONMENT****1. Surrounding Uses**

The proposed project is compatible with the surrounding residential neighborhoods. The High School facilities including the play courts and ballfields are intended for the use of the Kapolei area residents. The proposed uses are also compatible with single and multi-family residential uses adjacent to and across Kapolei Parkway.

Impacts - There are no negative impacts anticipate with regard to surrounding uses.

Mitigation - No Mitigation measures are proposed.

2. Flora and Fauna

There are no known significant habitats or rare, endangered or threatened species of flora and fauna located within the project site. The proposed project is therefore not considered an adverse impact upon these environmental features. There are also no wetland indicator plants on the project site.

Impacts - There are no impacts associated with the project with regard to flora and fauna.

Mitigation - No mitigation measures are proposed.

3. Archaeological Resources

The project site has been subject to previous ground disturbing activities from agricultural use and construction of the Villages of Kapolei development. There are no surface or sub-surface archaeological materials present on the project site or evidenced by existing studies of the site.

- Impacts** - There are no known impacts with regard to archeological resources.
- Mitigation** - Should any archaeologically significant artifacts, bones, or other indicators of previous on-site historic activities be uncovered during the construction phase, their treatment will be conducted in strict compliance with the requirements of the State Department of Land and Natural Resources. The State Historic Preservation Officer shall determine the method of preservation, the site boundaries, setback restrictions and criteria for adjacent uses and the appropriateness of public access.

4. Cultural Resources

There are no cultural practices occurring within or in the vicinity of the project site evidenced by existing studies of the project area. There are no known existing cultural properties or any other types of historic sites evidenced by existing studies. Moreover, the project site has been subject to previous ground disturbing activities from agricultural use and construction of the Villages of Kapolei development.

- Impacts** - There are no known impacts with regard to cultural resources.
- Mitigation** - Should any culturally significant indicators of previous on-site cultural activities be uncovered during the construction phase, their treatment will be conducted in strict compliance with the requirements of the State Department of Land and Natural Resources.

5. Air Quality

Air quality impacts attributed to the project will include dust generated by short-term, construction-related activities. Site work such as

filling and grading and utilities and parking lot construction, for example, will generate airborne particles. Dust control measures such as regular watering and sprinkling will be implemented as needed to minimize wind-blown emissions. At least one water sprinkling truck will be kept on-site during working hours during the construction phase of the project and all other dust prevention measures such as protective temporary dust screens around construction area, will be utilized in accordance with Department of Health (DOH) regulation.

Project-related emissions are not expected to adversely impact local and regional ambient air quality conditions. It should also be noted that the prevailing winds from the northeast will carry dust and emissions away from existing residential areas more than 95% of the time.

- Impacts** - Fugitive dust during construction.
- Mitigation** - A dust prevention plan will be provided by contractor in accordance with Department of Health (DOH) Standards and Rules. Dust prevention measures such as temporary dust screens around the site and regular watering will be implemented during the construction period.

6. Noise

As with air quality, ambient noise conditions will be impacted by construction activities. Heavy construction equipment would be the dominant source of noise during the site construction period. To mitigate the construction noise impacts upon surround uses, construction activities will be conducted during the daylight hours only.

Development of the school could impact nearby existing and future residences if noise from the school is not properly controlled. Potential

noise sources include: indoor activities such as choral practice; outdoor activities such as sports event at the football stadium; and building equipment such as air-conditioning units.

Most buildings of the Kapolei High School campus, including classroom buildings, Music, and Forum buildings, will be air-conditioned. Therefore, such indoor activities as band and choral practices would not generate significant adverse noise impacts.

The football stadium is intended for use by not only the school but the Villages of Kapolei residents also. Outdoor activities such as sports event at the football stadium could impact nearby existing and future residences. To minimize potential noise impacts, the football stadium will be located at the southwestern corner of the school site far from existing and planned residential neighborhood. Any sound system loudspeakers should be oriented so as not to directly impact nearby residences. Additionally, The hours of school facility use should be limited to avoid noise sensitive hours and will be controlled by the Department of Education (DOE).

Noise from building equipment such as air-conditioning, exhaust fans and pumps could impact adjacent residences. To mitigate the noise impacts, acoustical enclosures and exhaust silencers for the mechanical equipment should be implemented, and landscaping along the school boundaries will be provided.

- Impacts** - Noise from construction activities and school-related indoor/outdoor activities.
- Mitigation** - Construction activities and hours will be in accordance with the 11.46 Rules of Department of Health (DOH) regulating noise impacts.

Appropriate mitigative measures such as landscaping, acoustical enclosure and exhaust silencers will be taken to minimize any noise impacts of the school on adjacent residential neighborhoods from noise generating sources. The hours of school facility use should be limited to avoid noise sensitive hours and will be controlled by the Department of Education (DOE).

7. Energy Resources

The school buildings will be designed in a manner to encourage the efficient use of energy resources. The school buildings will have the high-pitched Hawaiian style roofs, deep overhangs and articulated windows of the Ewa plantation style. High-pitched roofs will allow for ventilation through the attic spaces and provide for cool interior spaces. Deep overhangs will provide shade from the sun and allow windows to remain open during rain. The primary material for the exterior walls is concrete unit masonry (CMU) which is a durable, cost effective material.

The school buildings will be designed with many large windows for abundant natural light and views. For the air conditioned buildings the windows will be designed to maximize daylight, and be operable in case of the need for natural ventilation, while still providing an energy efficient building envelope. For the naturally ventilated buildings such as gym and dining area of the forum building, metal louvers will be provided to maximize the amount of air flow through the building.

Plumbing fixtures such as water closets, urinals and lavatories will be selected to meet ultra-low flow requirements. The gym will be provided with gang showers. Shower valves will be a pressure compensated type with volume control.

Energy-efficient, high-pressure sodium luminaires will be provided around the exterior of the buildings. General interior illumination will be provided by energy-efficient fluorescent luminaires. For large rooms, multi-level and/or zoning switching will be provided for energy conservation.

Impacts - There are no negative impacts anticipate with regard to the efficient use of energy resources.

Mitigation - The school will be designed in a manner to promote environmentally sensitive and energy efficient design.

8. Visual Resources

The project will be fully landscaped to create a site visually and aesthetically integrated with the Villages of Kapolei, the park, and other surrounding developed properties. The tallest structure is proposed to be approximately 52 feet in height which would be comparable to the existing two-story townhouse structures which are located within the development. Inspired by an Ewa plantation residential style, the school buildings will have simple roof forms, deep overhangs and articulated windows.

Impacts - Impacts will be positive.

Mitigation - No mitigation measures are proposed.

B. IMPACT TO COMMUNITY SETTING**1. Population and Local Economy**

On the short-term basis, the project will support construction and construction-related employment. Over the long-term, the project will provide limited support to the service sector for project operations and maintenance. Direct on-site employment generated by the project will total 155 new jobs and will likely include approximately 118 school teachers and counselors, 6 maintenance workers, 4 security, 15 health, recreation, cafeteria and other service staff and 12 administrative staff including a principal and 4 vice principals. (Source: Nick Nichols, DOE, July, 1998)

Impacts - Short and long-term employment opportunities are a beneficial impact to the Kapolei area.

Mitigation - No mitigation is proposed.

2. Agriculture

The 45-acre project site is currently not in agricultural use. The proposed development will not affect agricultural endeavors on the island.

Impacts - No adverse agricultural impacts are anticipated.

Mitigation - No mitigation is proposed.

3. Police, Fire and Medical Services

Police, fire and medical services are not expected to be adversely impacted by the proposed project. The project will not extend existing service area limits for emergency services.

Impact - There are no negative impacts with regard to police, fire and medical services.

Mitigation - No mitigation measures are proposed.

4. Solid Waste

A solid waste management plan will be developed in coordination with the Solid Waste Division of the County Department of Public Works and Waste Management for any disposal of clearing and grubbing material from the site during construction.

Once completed, the proposed project will be served by the City and County of Honolulu for refuse collection. Solid waste generated from the project will be disposed at the H-POWER facility. To accommodate future disposal requirements, the City plans to stress recycling efforts followed by physical expansion of existing facilities such as H-POWER. Solid waste generated by the project is not expected to cause any adverse impacts.

Impacts - The City and County Department of Wastewater Management (DPW) estimate is based on approximately four pounds/person/day. The school campus with a projected 1800 students and 155 teachers, staff, etc. would generate about three tons/day. Production of this quantity of solid waste will impact the existing county disposal facilities.

Mitigation - The Kapolei High School Project will endeavor to promote recycling as its primary realistic means of mitigating this impact. However, the City and County of Honolulu through creation of its Resource Recovery facility (H-POWER) has already issued a program to recover energy, as well as decrease the amount of solid waste which must be ultimately disposed of in landfills.

C. IMPACTS TO INFRASTRUCTURE**1. Roadways**

Access to the subject property would be through the six-lane Kapolei Parkway and the four-lane Fort Barrette Road and other intersection streets in Kapolei town and the Villages of Kapolei. The driveway will comply with applicable County sight distance provisions. Presently, Kapolei Parkway is a dead-end roadway at the northeast end of the Kapolei Middle School site. However, a U-turn-around area has been provided for motorists in the area bordering the drainage channel. The turn-around area will be open for use until the time of completion of the bridge and Kapolei Parkway/South Road intersection (approximately 1/2 mile west). There are also short-term (1998) plans for a bridge over the drainage channel and long-term plans for the Kapolei Parkway to extend to the Ewa Gentry development.

Based on the DOE's projected enrollment for year 2002, it is anticipated that more than 40 percent of the students enrolled in the High School facility would be from the Kapolei community. Thus, some of the pick-ups and drop-offs of the students would occur by walking to and from the facility, rather than by automobile. Other students from nearby communities, including Nanakai Gardens to the west, Makakilo to the north and Barbers Point to the south, would be attending the school by vans and buses which will pick up and deliver groups of students. Vehicular trips are anticipated during the morning peak hour, and afternoon vehicular trips are anticipated during the early afternoon peak hour. However, as noted in the IIIA.4 Air Quality Section above, most of the school traffic will not interfere with traffic outside the Villages of Kapolei complex and will have minimal effect on traffic within the complex because the school fronts the six-lane Kapolei Parkway which runs along its northern border and presently ends at the northeast end of the school

site. Therefore in the short-term, only school bound traffic should be involved in and out of the project site area. A recent Traffic Assessment study provides recommendations to accommodate and improve traffic flow in the project area. (See Appendix F, Traffic Assessment.)

Impacts - The development of the Kapolei High School will produce some traffic impact on local collector and regional systems. Specific traffic impacts are through traffic generation projections and are included in Traffic Assessment, Kapolei High School (July 1998) by Austin, Tsutsumi & Associates, Inc.

Mitigation - The developer is committed to follow recommendations made in the 1998 Traffic Study by Austin, Tsutsumi & Associates, Inc. and comply with those recommendations made in the Ewa Region Highway Transportation Master Plan.

2. Water

Based on the proposed number of fixtures within the school, design flow was estimated at 335 gallons per minute (GPM) by Thermal Engineering Corporation in June 1998. Landscape irrigation flow will be 400 GPM. The maximum daily demand for potable water is 80 gallons per day (GPD) based on the design enrollment with an average daily demand of 54 GPD.

Potable and non-potable water allocation is already available. The water system will be designed in conformance with City and County of Honolulu Water System Standards and Standard Details and Department of Education maintenance personnel recommendations. Potable and non-potable water supply will be off Kapolei Parkway. Fire hydrants will be installed on-site in conformance with City and County of Honolulu Fire

Department and State of Hawaii Standards.

The project is not anticipated to have a significant impact upon the water source, storage and transmission system.

- Impacts** - The Kapolei High School will generate a maximum of 80 GPD. There is existing allocation of potable and non-potable water available for the school.
- Mitigation** - The water system will be designed in conformance with City and County of Honolulu Water System Standards and Standard Details and Department of Education maintenance personnel recommendations.

3. Wastewater

The sewer system will be designed in conformance with City and County of Honolulu Sewer Standards and Standard Details and Department of Education maintenance personnel recommendations. Sewage from the school will be directed to the Villages 7 and 8 Road A or the Kapolei Parkway in accordance with the Villages of Kapolei Sewer Master Plan. Development of the proposed project is not expected to cause any adverse effects due to wastewater.

- Impact** - Project will increase sewage flow, but can be accommodated by existing system.
- Mitigation** - Connections will be in conformance with City and County (C&C) of Honolulu Sewer Standards.

4. Drainage

Storm runoff from the project site would be routed to the existing drainage channel which runs along the southern border of the site. The internal drainage system will be designed to comply with the C&C of Honolulu Drainage Standards and Standard Details and Department of Education maintenance personnel recommendations.

Impact - Development of the proposed project is not expected to cause any adverse effects to adjacent or downstream properties.

Mitigation - Swales will be used wherever possible with a minimum slope of 1%. Building finished floors will be higher than the surrounding grades and runoff will be directed away from the buildings.

5. Electrical and Telephone Systems

Electrical power requirements associated with the proposed project will be supplied by Hawaiian Electric Company's (HECO) facilities adjacent to the school site. Telephone system requirements generated by the project will be met by GTE Hawaiian Tel facilities. (See Power Map, Figure 10.)

Impacts - The project will provide additional requirements for facilities as specifically provided by GTE Hawaiian Tel and the Hawaiian Electric Co. No adverse impacts are anticipated.

Mitigation - No mitigation measures are proposed.

**4.0
RELATIONSHIP TO
GOVERNMENTAL PLANS,
POLICIES AND
CONTROLS**

IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE LAW

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, established the four (4) major land use districts in which all lands in the State are placed. These districts are designated Urban, Rural, Agricultural, and Conservation. The subject parcel is within the Urban district. (See State Land Use Map, Figure 12.) The proposed action involves the construction of a High School use which is compatible with the Urban designation.

B. THE HAWAII STATE PLAN

The proposed project is generally consistent with objectives and policies of the Hawaii State Plan. Chapter 226, Hawaii Revised Statutes (HRS), including Objectives and Policies for Socio-Cultural Advancement-Education.

Policies and Priority Guidelines relevant to the Kapolei High School project are found in The Hawaii State Plan: Education Functional Plan of 1989.

Policies and Priority Guidelines

Corresponding Board of Education Goals

A. *Ensure the provision of adequate and accessible education services and facilities that are designed to meet individual and community needs. 226-21 (b) (2)*

Provide facilities that are sufficient in number, functional, well-placed and compatible with the physical surroundings. D-1-2

Provide a series of activities to stimulate improvements to the organization and gain community support for the organization's goals, activities and accomplishments. E-1

B. *Increase and improve the use of information technology in education and encourage*

Develop a plan to pinpoint, analyze and use, technology to improve classroom instruction. C-1-2

programs which increase the public's awareness and understanding of the impact of information technologies on our lives. 226-107 (5)

Redouble efforts to upgrade and expand the automated support systems for public schools. D-1-5

The Villages of Kapolei master plan which includes the High School site provides for educational facilities of all levels. Within the plan are one elementary school, one middle school, and one high school, as well as a day care center site for small children. Close cooperation with the State Department of Education will be maintained to assure adequate provision of educational services.

C. CITY AND COUNTY OF HONOLULU GENERAL PLAN

The Kapolei High School project is compatible with the 1992 General Plan for the City and County of Honolulu which recognizes Ewa and Central Oahu, as the most obvious urban expansion areas on Oahu. The implementation policies for the Plan's guiding objective, to establish a harmonious population distribution pattern on Oahu, address primarily the Ewa and Central Oahu regions.

Policy 1: Facilitate the full development of the Primary Urban Center.

Policy 2: Encourage development within the secondary urban center at Kapolei and the Ewa and Central Oahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the Primary Urban Center.

Policy 4: Encourage the construction of school facilities that are designated for flexibility and high level use.

Policy 5: Facilitate the appropriate location of learning institutions from preschool through university levels.

The Kapolei High School is also supported by the First Biennial Report: On the Condition of the City and County General Plan and Development Plans (June 1995), which predicted that with public school enrollment on Oahu projected to rise 10,000 in the next seven years (i.e. 1996-2003), an eventual need for at least 11 new schools is anticipated in the high-growth areas of Ewa and Central Oahu.

The 1992 Oahu General Plan's goal for the population distribution on the island in the year 2010 is the following:

Primary Urban Center	450,800 - 497,800	45.1-49.8 % of pop.
Ewa	119,800 - 132,900	12.0-13.3 % of pop.
Central Oahu	148,900 - 164,900	<u>14.9-16.5 % of pop.</u>
	Total	72.0-79.6 % of pop.

According to these figures, the Primary Urban Center's share of the total Oahu population would decline from its present 51 percent to the projected 45 to 49 percent in 2010. Ewa's share of the total Oahu population would increase from its present 5 percent to the projected 12 to 13 percent in 2010.

Overall, the State of Hawaii supports the city's policy with the argument that the Ewa plain is a logical location for a secondary urban center based on the qualities of proximity to urban Honolulu, major employment basis in the surrounding area, and subterranean caprock which prevents pure groundwater supplies from becoming contaminated. In the long run, it is argued, Ewa's large areas of marginal agricultural lands to the west and in the makai direction will provide additional suitable lands for urbanization. The State also supports directing growth to Ewa and Central Oahu. (State Land Use District Boundary Review Report: Oahu, March 1992)

To this end, and for planned use purposes the City and County of Honolulu has designated and projected the project site area and the surrounding area for Urban Use which is compatible with school use.

D. COUNTY ZONING

The City has zoned the site AG-1, and the site is also zoned R3.5 Residential District under Act 15, Session Laws of Hawaii 1988. A public school is compatible with and can exist over such zoning.

The 1992 City and County of Honolulu General Plans Objective B, to provide a wide range of educational opportunities for the people of Oahu, is compatible with and supports the development of the Kapolei High School in the Ewa Region.

Policy 4: Encourage the construction of school facilities that are designed for flexibility and high level use.

Policy 5: Facilitate and appropriate location of learning institutions from preschool through university levels.

E. EWA DEVELOPMENT PLAN

The 1997 City and County of Honolulu Ewa Development Plan outlines the Planning Principles (Section 4.7.2) most relevant to school development in the Ewa area.

The following principles should be followed in planning and operating schools in Ewa:

Schools as Community Centers. Because of the difficult financial problems for all sectors, new communities are likely to have fewer churches, private social halls and recreation facilities. As a result, schools may have to assume important functions as cultural and recreational

centers and as meeting facilities. The State DOE should design school facilities to facilitate community use during non-school hours and weekends.

***Co-location with Parks.** Elementary and intermediate schools should be co-located with neighborhood or community parks, and designs of facilities should be coordinated by the State DOE and the Department of Parks and Recreation when needless duplication of parking and of athletic, recreation and meeting facilities can be avoided.*

***Shared Facilities.** The Department of Parks and Recreation should coordinate the development and use of athletic facilities such as swimming pools and gymnasiums with the DOE where such facilities would maximize use and reduce duplication of function.*

***Fair Share Contribution.** The City will support the State Department of Education's request for fair share contributions from developers of residential projects to insure that adequate school facilities are in place at existing and new schools to meet the needs of residents.*

The development of Kapolei High School is compatible and in accordance with all of the above Planning Principles. It should be noted that the Public Facilities Map of the Ewa Development Plan identifies the project site as a future high school site.

F. KAPOLEI MASTER PLAN

The revised 1997 Kapolei Master Plan shows the 45-acres project site area designated for the Kapolei High School. (See Figure 4, Villages of Kapolei Master Plan.) This is in keeping with the 1990 Kapolei Master Plan which planned for a high school as part of the Villages of Kapolei Development Plan.

G. COMMUNITY INPUT

State's and County's guidelines and policy encourage community input as part of the planning process. To this end the design of the Kapolei High School planned and received community input that involved the State, the developer, educators, students and the communities in a collaborative planning process known as a Charette. This process consisted of a series of intense, brainstorming, project design sessions, in which all appropriate groups came together for periods of concentrated time. The process facilitated and accelerated communication and decision-making, and provided the opportunity for significant input by more people than the traditional design process allows.

The design charette for Kapolei High School was scheduled in three sessions, and was held over a four-month period, from November 1997 through February 1998. During this time, a Steering Committee translated the ideas and themes, developed by a Task Force, into the physical design of the school. (See Appendix A, Community Input Diagram, and Appendix B, Design Charette Participants.)

This progressive approach has resulted in a new kind of school design; one that is humanistic as well as future-oriented, infused with local culture as well as advanced technologies. The community input process has continued throughout the planning of the High School project. For further details on the design charette process see Kapolei High School: Creating a Dynamic Learning Community (Design Charette and Master Plan Report) (May 1998), for Makai Villages Partnership by Mitsunaga and Associates, Inc.

**5.0
DETERMINATIONS,
FINDINGS AND
REASONS FOR
SUPPORTING
DETERMINATION**

V. DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

A. SIGNIFICANCE CRITERIA

According to the Hawaii Administrative Rules (HAR 11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short- and long-term effects.

In making the determination, the Rules established "Significant Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, the proposed Kapolei High School project was evaluated if it meets any one of the following 13 criteria:

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;*

The project site is currently vacant, but no longer reflects a natural environment. It has been previously disturbed by agricultural use and the Villages of Kapolei development.

No significant archaeological or historic sites are known to exist within or in the vicinity of the project site. Should any archaeologically significant artifacts, bones, or other indicators of previous on-site historic or cultural activities be uncovered during the construction phase, their treatment will be conducted in strict compliance with the requirements of the State Department of Land and Natural Resources.

2. ***Curtails the range of beneficial uses of the environment;***

Agricultural land is an important natural resource. Although still suitable for agricultural uses, the project site has been designated for urban use and identified as a future high school site on the City and County's Ewa Development Plan. From both an environmental and social/ economic perspective, it is not practical or beneficial for the community to return the site to agricultural use or a natural condition.

The impacts of the project will be significantly positive in terms of beneficial uses of the environment as compared to the "no action" alternative.

3. ***Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;***

The proposed development of Kapolei High School is consistent with the Environmental Policies established in: Chapter 344, HRS; Chapter 200, HAR; and the National Environmental Policy Act.

4. ***Substantially affects the economic or social welfare of the community or state;***

Schools are the backbone of every community since education is critical to the community's future. The proposed Kapolei High School is planned to meet the educational needs of surrounding communities, responding to projected fast population growth. It will not negatively or significantly affect the economic or social welfare of the community or state.

5. *Substantially affects public health;*

Public health may be affected by the changes in air and water quality and noise levels if any. However, these will be insignificant or not detectable, especially when weighed against the positive social implications associated with the project.

6. *Involves substantial secondary impact, such as population changes or effects on public facilities;*

Existing and planned large-scale housing development projects in Kapolei areas will contribute to a significant population growth that will require expansion of public facilities and services. The proposed project will not in itself generate new population growth by stimulating in-migration, but provide needed educational facility responding to projected population growth

There will be no significant secondary impacts on public facilities. Infrastructure for the entire Villages of Kapolei is already in place which includes water, sewer and drainage lines along Kapolei Parkway, sidewalks, street lights, potable/non-potable water allocation, and drainage channel.

7. *Involves a substantial degradation of environmental quality;*

Honoring the history of the region, the proposed Kapolei High School will be designed with simple roof forms, deep overhangs and articulated windows of the Ewa plantation residential style. The school will be harmoniously blended with the surrounding master planned communities. The school will be also fully landscaped to create a facility visually and aesthetically integrated with the surrounding communities.

8. ***Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;***

By planning now to address the future educational needs of the community and the State, provision of the high school is consistent with the long term plans for the Kapolei areas. Cumulative effects will be positive.

9. ***Substantially affects a rare, threatened, or endangered species, or its habitat;***

No endangered plant or animal species are known to exist in the vicinity of the project site. The presence of any of those species is unlikely because of the continuous cane cultivation for nearly 70 years.

10. ***Detrimently affects air or water quality or ambient noise levels;***

Potential impacts on air quality attributed to the project include dust generated by short-term, construction-related activities. A dust prevention plan will be provided by contractor in accordance with Department of Health (DOH) Standards and Rules. Dust prevention measures such as temporary dust screens around the site and regular watering will be implemented during the construction period.

Storm runoff from the project site will be routed to the existing drainage channel which runs along the southern border of the site. The internal drainage system will be designed to comply with the C&C of Honolulu Drainage Standards and Standard Details and Department of Education maintenance personnel recommendations.

Construction activities and hours will be in accordance with the 11.46 Rules of Department of Health (DOH) regulating noise impacts. In addition, appropriate mitigative measures such as landscaping, acoustical enclosure and exhaust silencers will be taken to minimize any noise impacts of the school on adjacent residential neighborhoods. The hours of school facility use should be limited to avoid noise sensitive hours and will be controlled by the Department of Education (DOE).

11. ***Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;***

There are no environmentally sensitive areas in the vicinity of the project site. The project site is located outside of the County's Special Management Area or 100-year flood plain as determined by the Federal Emergency Management Agency. Shoreline, valleys, or ridges will not be impacted by the proposed project. Development of drainage systems will follow established design standards to avoid the destruction of any natural resources.

12. ***Substantially affects scenic vistas and viewplanes identified in county or state plans or studies;***

Impacts on public views of the school facilities would not be significant although they will be visible. The school will be visible from higher elevations by the general public or from persons driving along the H-1 highway. However, the school buildings will not affect mauka or makai views due to topographical characteristics of the project location at a low lying area.

One- or two-story school buildings would be comparable to the existing or future two-story townhouse structures in the vicinity of the school site. Public views will not be significantly affected.

13. *Requires substantial energy consumption.*

The school buildings will be designed in a manner to encourage the efficient use of energy resources. The school buildings will have the high-pitched Hawaiian style roofs, deep overhangs and large windows. Plumbing fixtures such as water closets, urinals and lavatories will be selected to meet ultra-low flow requirements. Energy-efficient, high-pressure sodium luminaires will be provided around the exterior of the buildings. General interior illumination will be provided by energy-efficient fluorescent luminaires.

B. FINDINGS AND DETERMINATION

The proposed project will involve earthwork and construction activities. In the short-term, these activities may create temporary nuisances normally associated with construction activities. However, dust control measures, such as dust screens, regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Appropriate erosion control measures will be also incorporated during the construction phase to minimize soil loss associated with construction activities. All construction activities are anticipated to be limited to normal daylight working hours. Short-term Impacts generated from construction activities are not considered adverse.

From a long-term perspective, the proposed project is not anticipated to result in adverse environmental impacts. There are no known significant habitats or rare, endangered or threatened species of flora or fauna or archaeological sites located on the project site. With regard to infrastructure systems and public

services, the proposed project should have no adverse environmental impacts. Overall, the proposed project is consistent with the environmental policies of the Federal, State and County governments.

In light of the foregoing findings, it is concluded that the proposed action will not result in any significant adverse environmental impacts. Therefore, HCDCH will file a Finding of No Significant Impact (FONSI).

**6.0
AGENCIES CONTACTED
PRIOR TO / DURING THE
PREPARATION OF THE
ENVIRONMENTAL
ASSESSMENT**

VI. AGENCIES CONTACTED PRIOR TO/DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT

For the planning and design of the Kapolei High School, a design charette process was utilized which provided the opportunity for significant input by the community and government agencies. More people than the traditional planning/design process allows, including DOE staff, parents, students, public officials and representatives from community businesses and organizations, had opportunity to share their visions and interests in planning and design of the school.

The following agencies and organizations were involved in the master planning and design charette process or contacted prior to/during the preparation of the Environmental Assessment:

A. Federal Agencies

1. U.S. Naval Air Station Barbers Point (NASBP)

B. State Agencies

1. Department of Accounting and General Services (DAGS)
Central Services
2. Department of Accounting and General Services (DAGS)
Public Works Division
3. Department of Defense (DOD)
Civil Defense Division
4. Department of Education (DOE)
Barbers Point Elementary School
Campbell High School
Ilima Intermediate School
Kapolei Elementary School
Makakilo Elementary School
Nanakuli High & Intermediate School
Waianae High School
Waianae Intermediate School
Waipahu Community School

Waipahu High School
Waipahu Intermediate School

5. Department of Education (DOE)
Leeward District Office
6. Department of Education (DOE)
Office of Accountability and School Instructional Support
7. Department of Education (DOE)
Office of Business Services
Facilities Branch
Operations & Maintenance Section
School Food Service Branch
8. Department of Hawaiian Home Lands (DHHL)
9. Department of Health (DOH)
Office of Environmental Quality Control
10. Department of Transportation (DOT)
11. Housing and Community Development Corporation of Hawaii
(HCDCH)

C. City & County Agencies

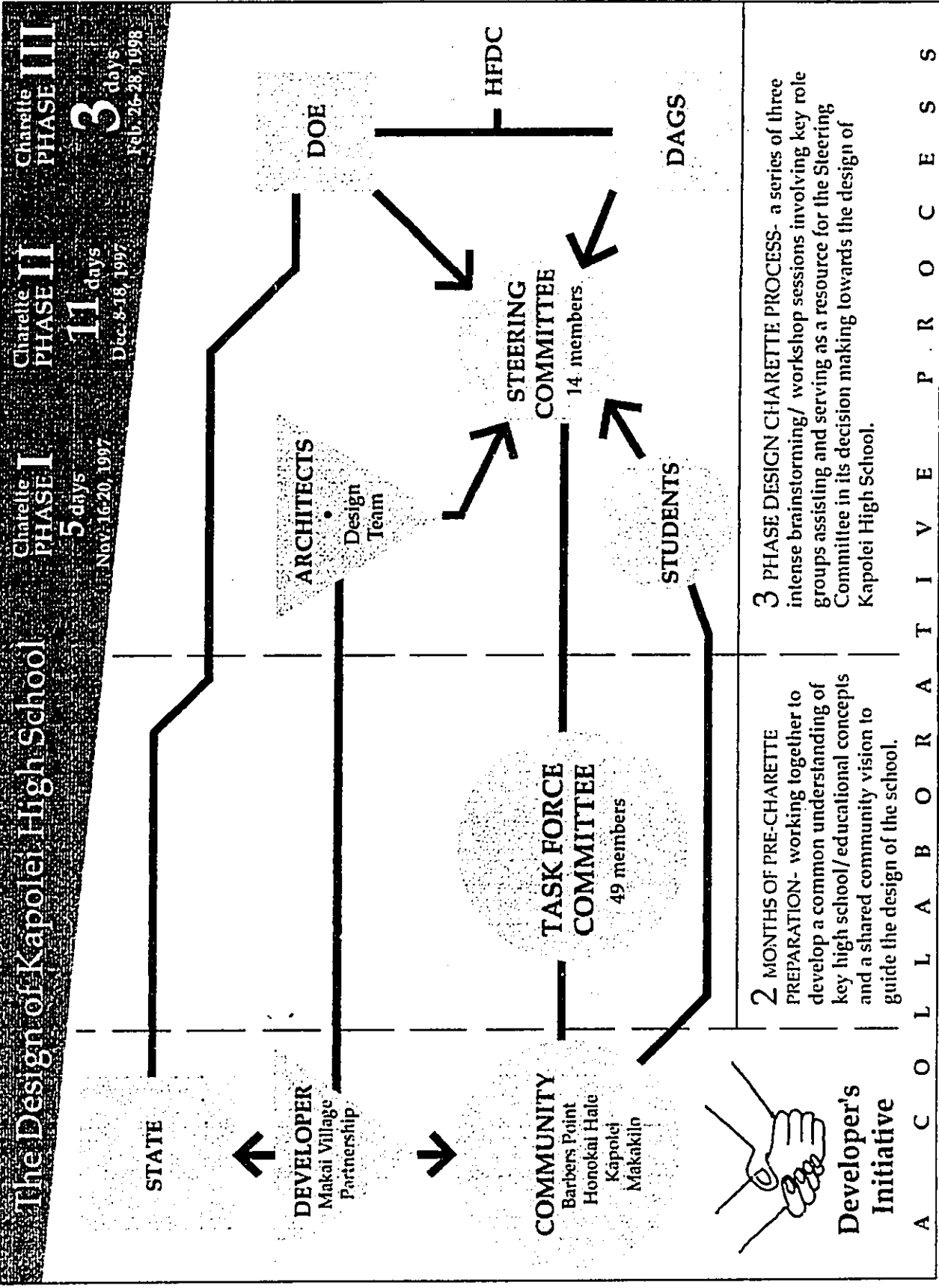
1. Planning Department (DPL)
2. Department of Planning and Permitting (DPP)
3. Department of Transportation Services (DTS)
4. Honolulu Police Department (HPD)

D. Other Agencies/Organizations

1. Estate of James Campbell
2. Kapolei Hope Chapel
3. Kapolei Rotary Club
4. Ko 'Olina Resort
5. Makai Village Partnership
6. Makakilo Lions Club
7. Neighborhood Board #34

APPENDIX A

Community Input Diagram



APPENDIX B

Design Charette Participants

STEERING COMMITTEE

Carol Jean Ching, DOE Facilities Branch
Anthony Chun, Education Specialist, DOE Leeward District Office
Chuck Erhorn, the Estate of James Campbell
David Gibert, Waipahu High
Senator Brian Kanno, State Senate
Roy Kimura, DAGS
Patty Leahey, Campbell High
Gordon Lum, Waipahu Community School
Aaron Mersberg, Campbell High
Mark Moses, State House Representative
Nick Nichols, DOE Facilities Branch
Ryan Oshita, Waianae High
Linda Wilkinson, Barbers Point Elementary
Vernon Young, Campbell High

STUDENT REPRESENTATIVES

Ciress Cuevo, Waianae High	Janice Japasen, Waianae High
Haydee Epan, Campbell High	Cheryl Labuguen, Waianae High
Kimberly Erice, Waianae High	Mary Respicio, Campbell High
Christine ford, Waianae High	Michelle Tenorio, Campbell High
Donovan Gaboya, Ilima Intermediate	Sarah Watters, Ilima Intermediate
Ryan Jackson, Campbell High	

TASK FORCE

JoAnn Abrazado, Kapolei Elementary	Carolyn Kirio, Waianae High
Donna Awana, Makakilo Lions Club	Leila Kuboyama, Waianae Intermediate
Kelly Barry, Villages of Kapolei/Campbell High	Linda Kumasaki, Campbell High
Brent Buckley, Kapolei Elementary	Patty Leahey, Campbell High
Bill Chang, Mitsunaga & Associates, Inc.	Wendie Liu, DOE Leeward District Office
Carol Jean Ching, DOE Facilities Branch	Paula Loring, Villages of Kapolei
Leroy Ching, Waipahu Intermediate	Gordon Lum, Waipahu Community School
Anthony Chun, DOE Leeward District Office	Daryl Mandela, Waianae High
Chuck Erhorn, the Estate of James Campbell	Robin Martin, Campbell High
David Gilbert, Neighborhood Board #34	Mike Mazzone, Carpenters Union
Daven Hee, Kapolei Hope Chapel	Aaron Mersberg, Campbell High
Joyce Higashi, Campbell	Keith Morioka, Waipahu High
Ranelle Ho, Makai Village Partnership	Mark Moses, State House Representative
Keith Horita, Ko Olina Resort	Al Nagasako, DOE Leeward District Office
Kathy Inoue, Makai Village Partnership	Bruce Naguwa, Nanakuli High & Intermediate
Tess Kaji, Waianae High	Laurel Nahme, Mitsunaga & Associates, Inc.
Senator Brian Kanno, State Senate	Flora Nash, Campbell High
Laurie Katagiri-Hoshino, Campbell High	Nick Nichols, DOE Facilities Branch
Kathy Kawaguchi, Makai Village Partnership	Barbara Nosaka, Ilima Intermediate
Roy Kimura, DAGS	Ryan Oshita, Waianae High

Ilalo Parayno, Campbell High
Wendell Staszkw, DOE Leeward District
Office
Michelle Toyooka, Waianae High
Delta Westcot, Villages of Kapolei

Linda Wilkinson, Barbers Point Elementary
Isaac Wise, NASBP
Steve Wong, Mitsunaga & Associates, Inc.
Dexter Yee, Kapolei Rotary Club
Vernon Young, Campbell High

AD HOC EDUCATIONAL PROGRAM COMMITTEE

Leroy Ching, Waipahu Intermediate
Anthony Chun, DOE Leeward District Office
Joyce Higashi, Campbell High
Laurie Katagiri-Hoshino, Campbell High
Kathy Kawaguchi, Makai Village Partnership
Linda Kumasaki, Campbell High
Patty Leahey, Campbell High
Wendie Liu, DOE Leeward District Office
Gordon Lum, Waipahu Community School

Robin Martin, Campbell High
Aaron Mersberg, Campbell High
Keith Morioka, Waipahu High
Flora Nash, Campbell High
Pauline Oasay, Campbell High
Ilalo Parayno, Campbell High
Wendell Staszkw, DOE Leeward District
Office
Vernon Young, Campbell High

AD HOC CURRICULUM COMMITTEE

James Carter, Nanakuli High & Intermediate
Anthony Chun, DOE Leeward District Office
Frank Coprivnicar, Waipahu High
Joyce Higashi, Campbell High
Tess Kaji, Waianae High
Laurie Katagiri-Hoshino, Campbell High
Kathy Kawaguchi, Makai Village Partnership
Carolyn Kirio, Waianae High

Leila Kuboynama, Waianae Intermediate
Patty Leahey, Campbell High
Daryl Mandela, Waianae High
Robin Martin, Campbell High
Aaron Mersberg, Campbell High
Ryan Oshita, Waianae High
Walden Zane, Campbell High

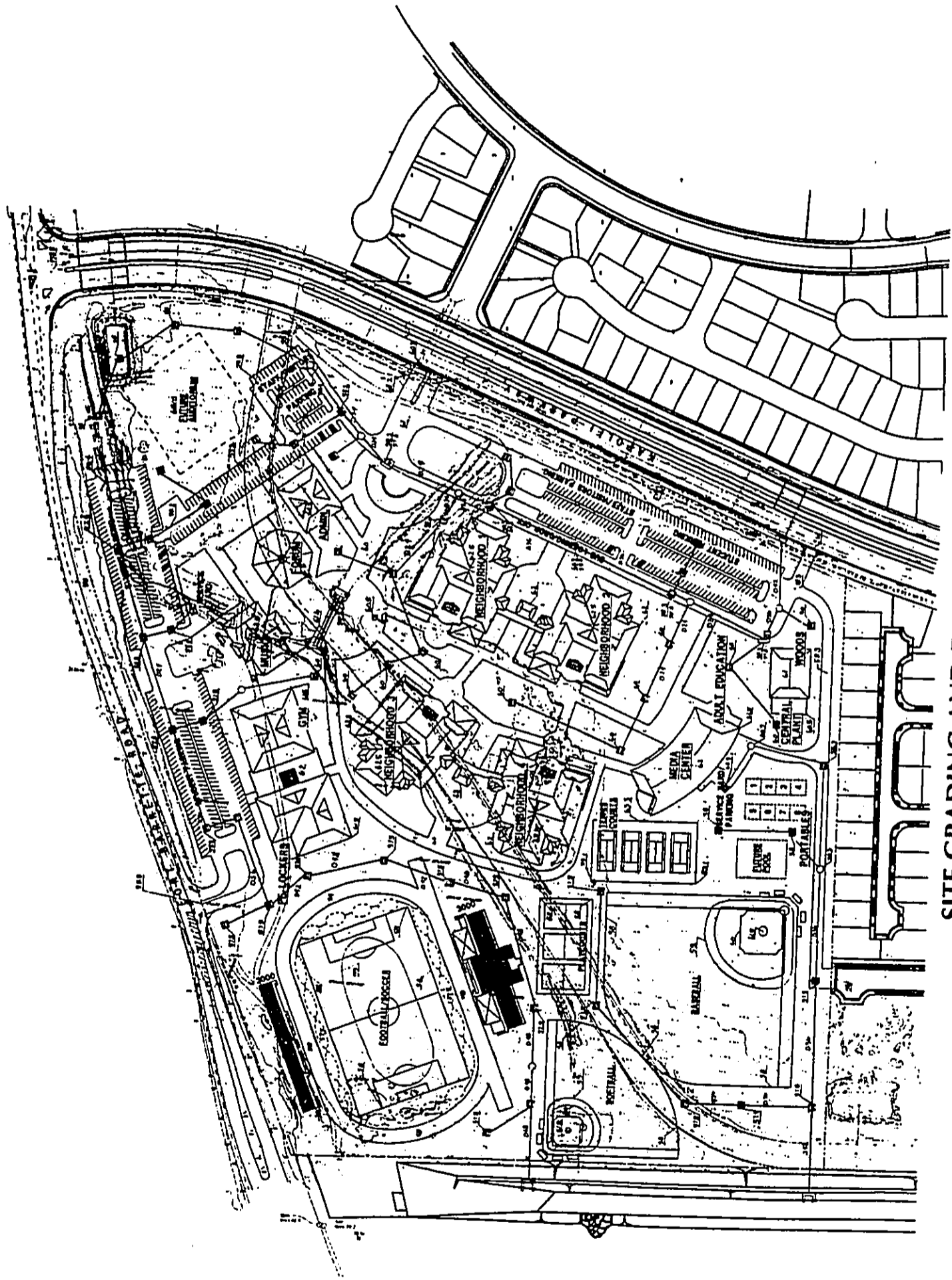
SPECIAL CONSULTANTS

Michael Barros, DOE - OASIS
Anthony Calabrese, DOE - OASIS
Frank Coprivnicar, Waipahu High
Ted Fukushima, OIA
Helen Gokan, DOE - OASIS
Cleighton Goo, DHHL
Sam Higa, DTS
Mel Higayama, DTS
Norman Ishikawa, State Civil Defense
Larry Kanda, State Civil Defense
Sharon, Kaohi, DOE - OASIS
Tess Kaji, Waianae High
Gene Kaneshiro, DOE - School Food Service
Branch
Lauri Katagiri-Hoshino, Campbell High
Carolyn Kiro, Waianae High

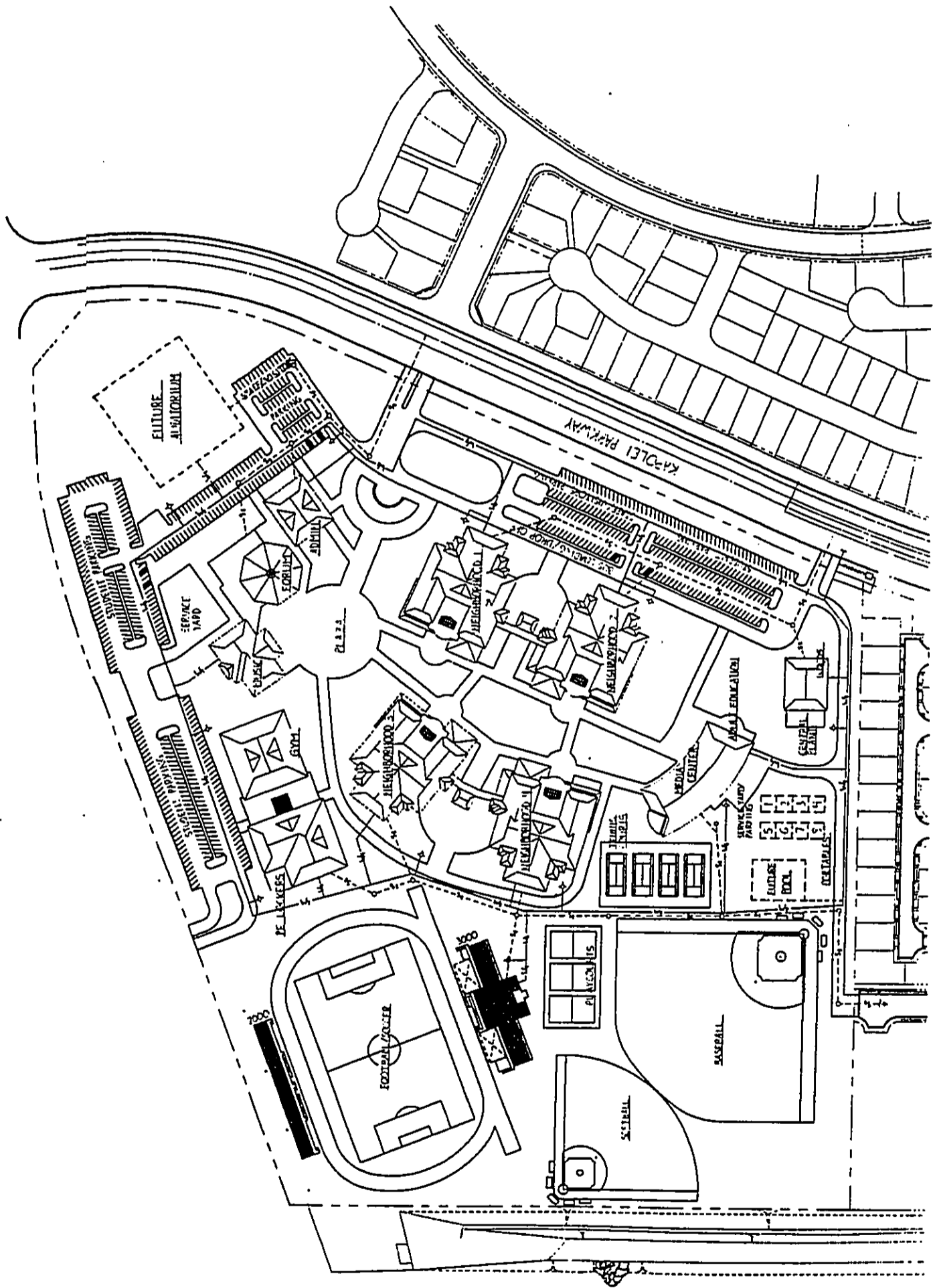
Kerry Koide, DOE - OITS
Leila Kuboyama, Waianae Intermediate
Karl Kunishige, DOT
Lucretia Leong, DOE - OASIS
Daryl Mandela, Waianae High
Robin Martin, Campbell High
Claude Matsuo, DTS
Howard Mau, Austin Tsutsumi & Associates
Keith Morioka, Waipahu High
Keith Niiya, Austin Tsutsumi & Associates
George Okano, DAGS
Michele Otake, DHHL
Sandy Pfund, HCDCH
Candy Suiso, Waianae High
George Tonaki, DOE - Operations & Maint.
Walden Zane, Campbell High

APPENDIX C

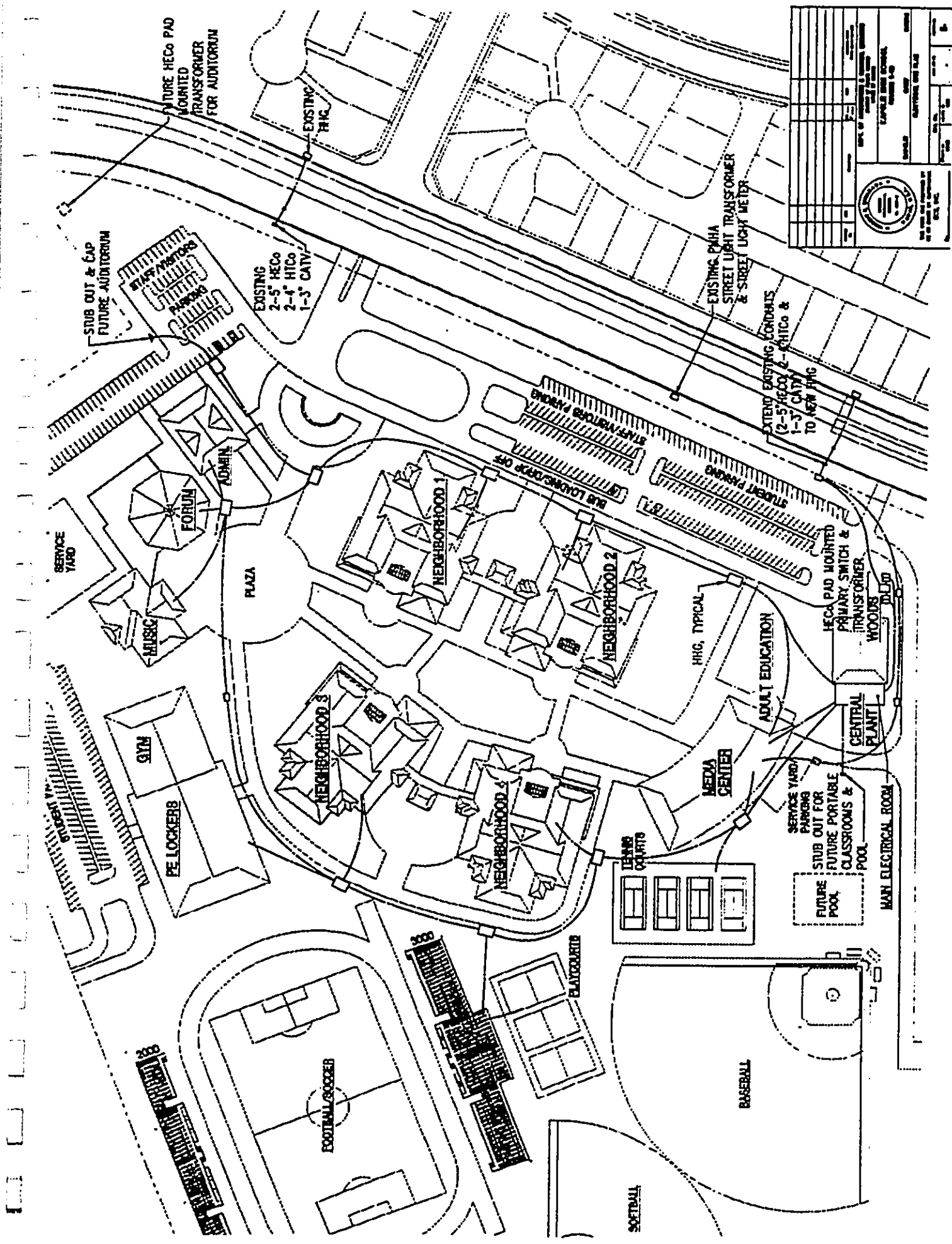
Site Plans



SITE GRADING AND DRAINAGE PLAN

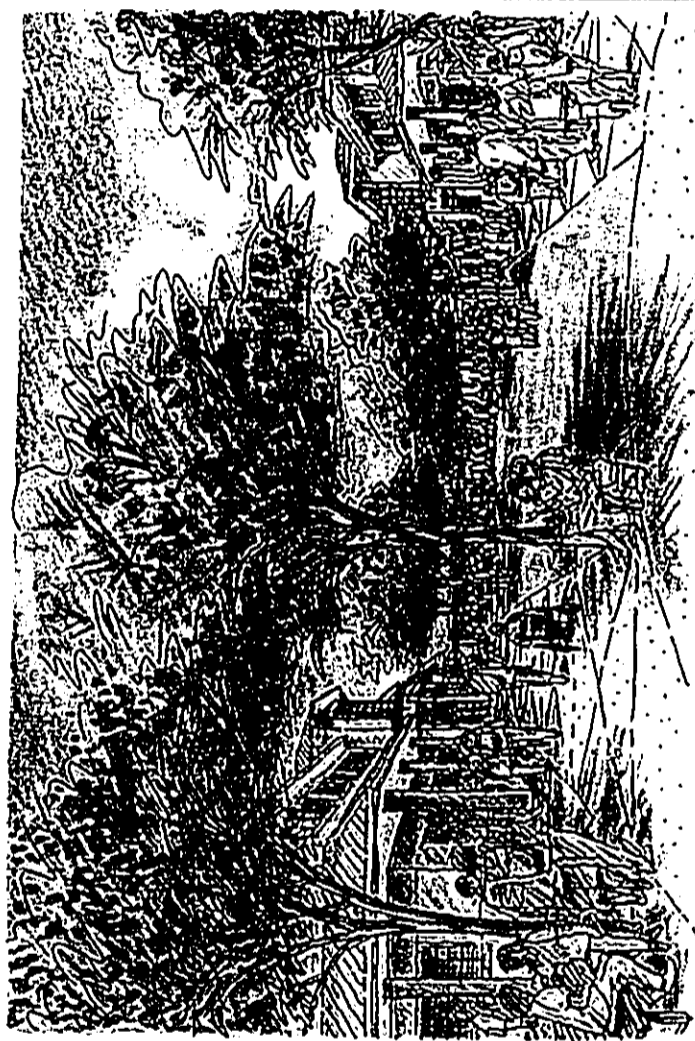


WATER AND SEWER UTILITIES PLAN

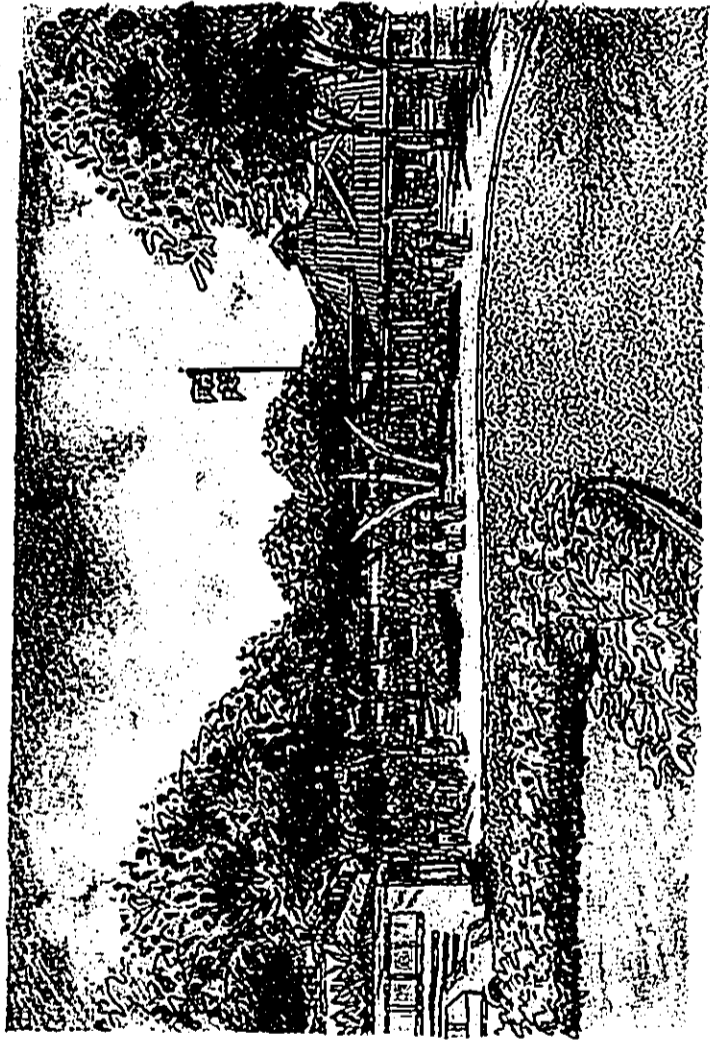


DATE OF ISSUE	NOV 1988
PROJECT NO.	88-001
SCALE	AS SHOWN
DESIGNED BY	W. J. ...
CHECKED BY	...
APPROVED BY	...
DATE	...

ELECTRICAL SITE PLAN



VILLAGE GREEN: The Central Open Space of the Campus
The center courtyard/ mall which is defined by the four Neighborhood Houses and
the Media/ Library Center creates a safe space for social gathering for students.

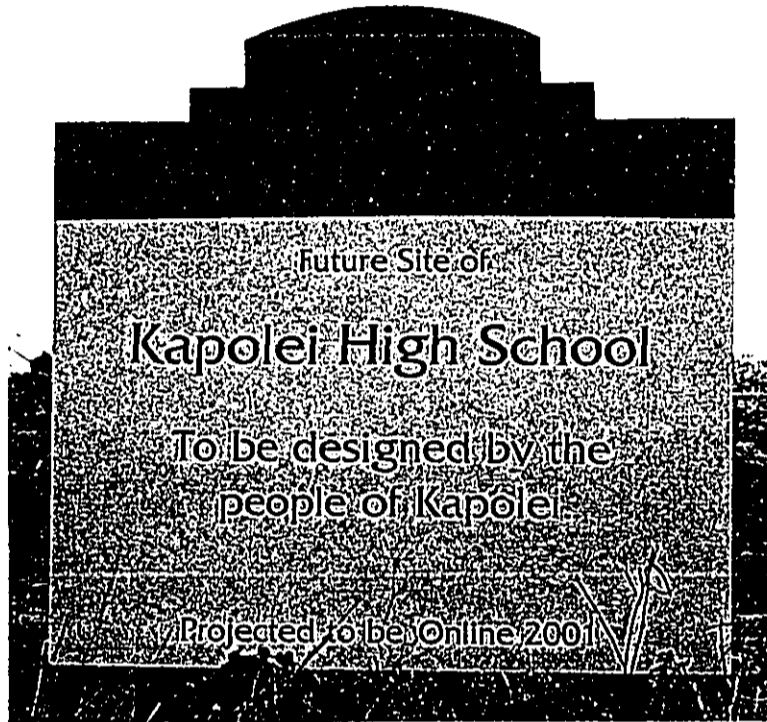


MAIN ENTRY TO KAPOLEI HIGH SCHOOL OFF KAPOLEI PARKWAY

The entry to the school is clearly defined and the school's signature piece welcomes students, faculty and guests.

APPENDIX D

Photos of Project Site

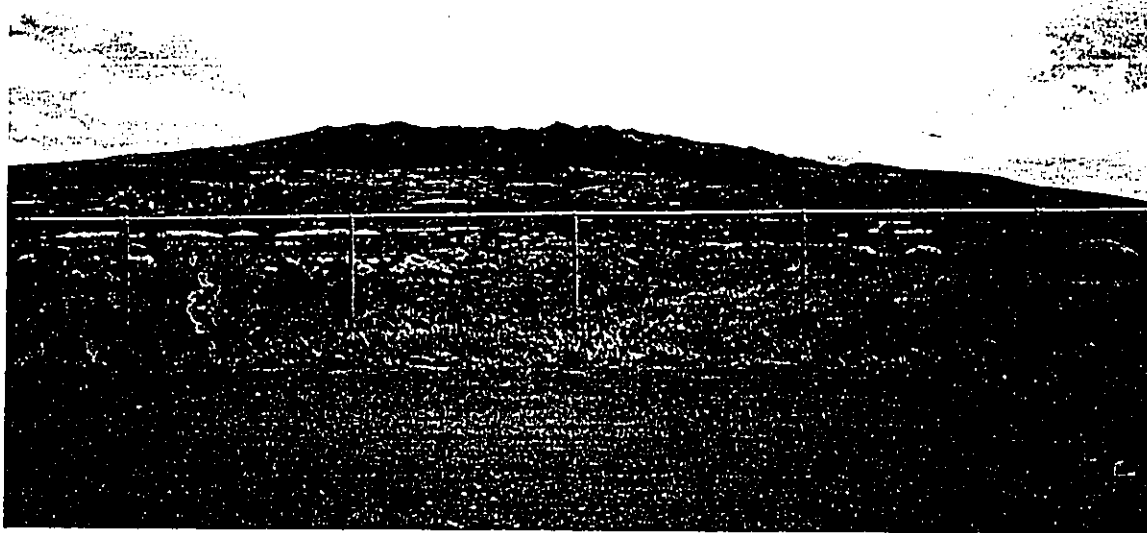


Facing south (makai) from the northwest corner of school site, shows project sign on Kapolei Parkway.

Proposed school project is in accordance with the 1997 Kapolei Master Plan and the 1997 Villages of Kapolei Master Plan.



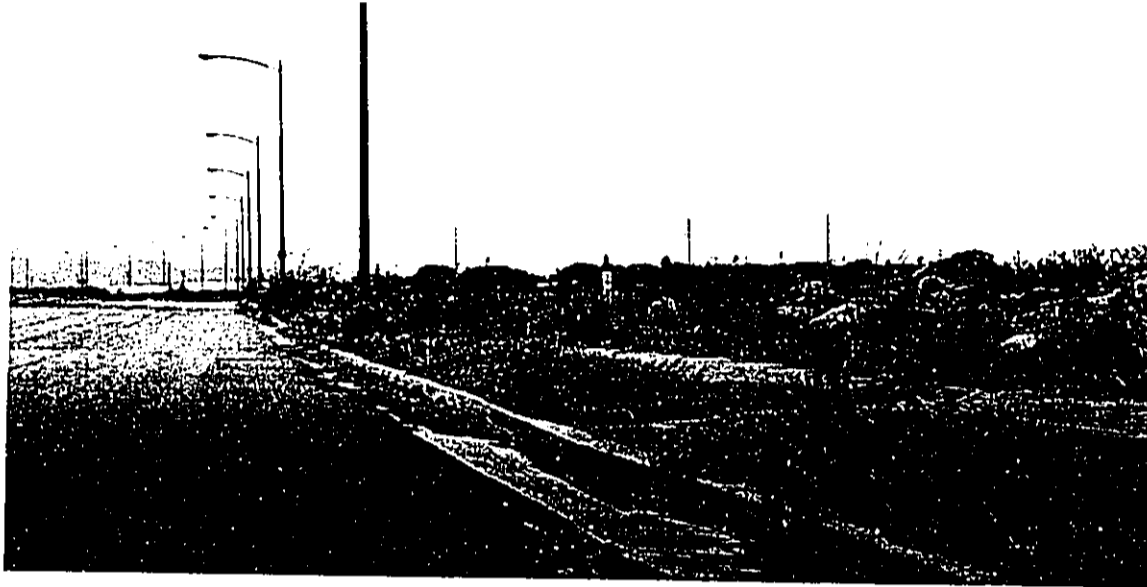
Facing north (mauka) from the northeast corner of school site, shows new housing project (Village 6) across Kapolei Parkway.



Facing north (mauka) from the southeast corner of school site, shows the Waianae Mountain Range approximately three miles to the north.



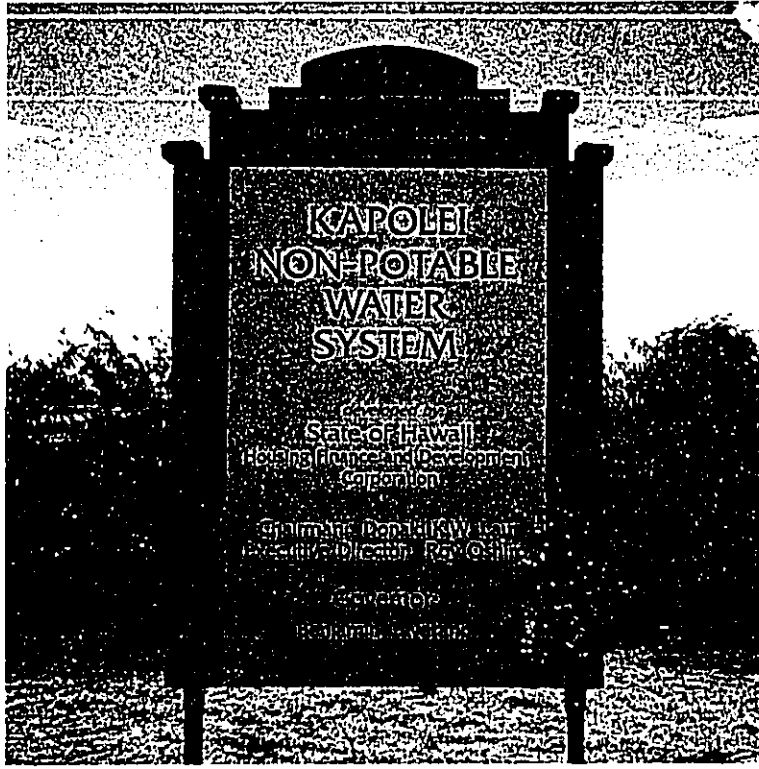
Facing southwest from the intersection of Fort Barrette Road and Kapolei Parkway. Future school site is visible in the background.



Facing southeast from the northwest corner of school site,
School site is to the right fronting Kapolei Parkway.
Shows sewer, drainage and electrical fixtures.

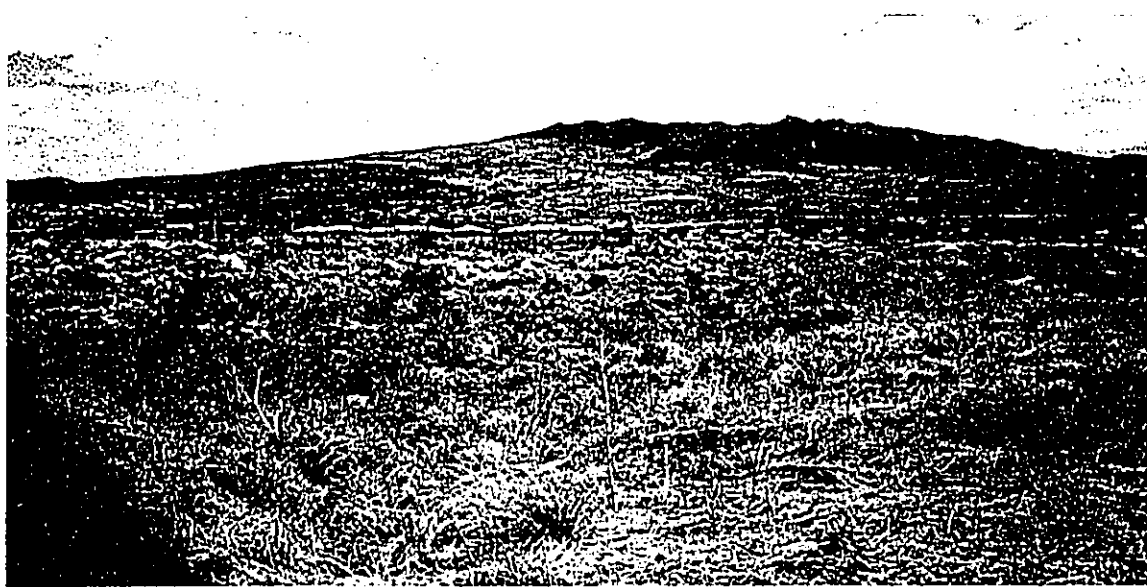


Facing east from the northwest corner of school site,
shows street lights and six-foot wide sidewalks
along Kapolei Parkway.

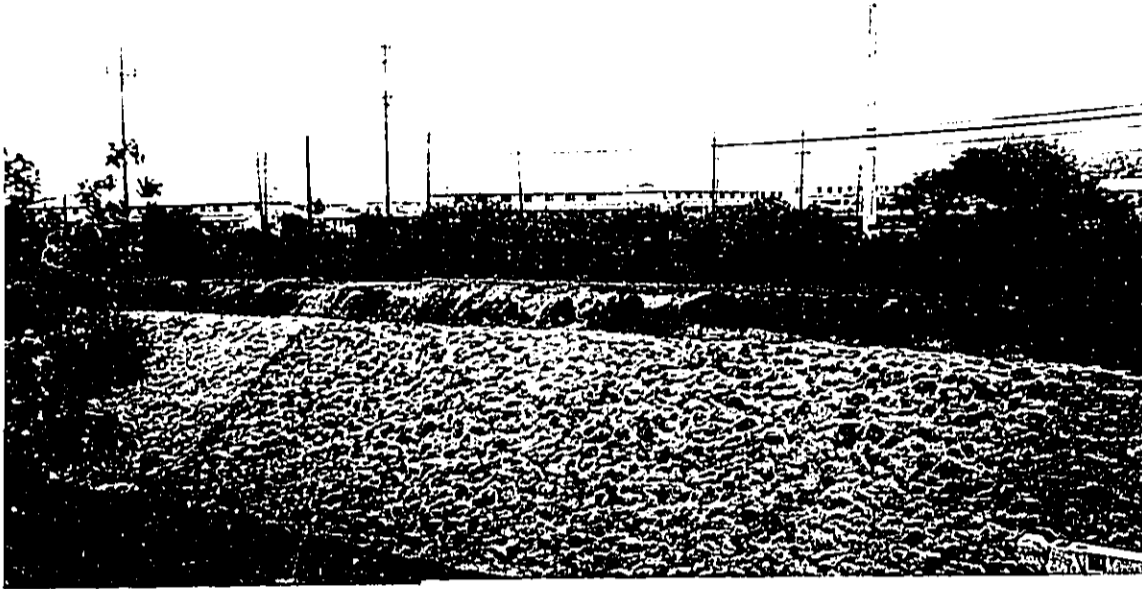


Sign of existing Non-Potable Water System at the northwest corner of school site.

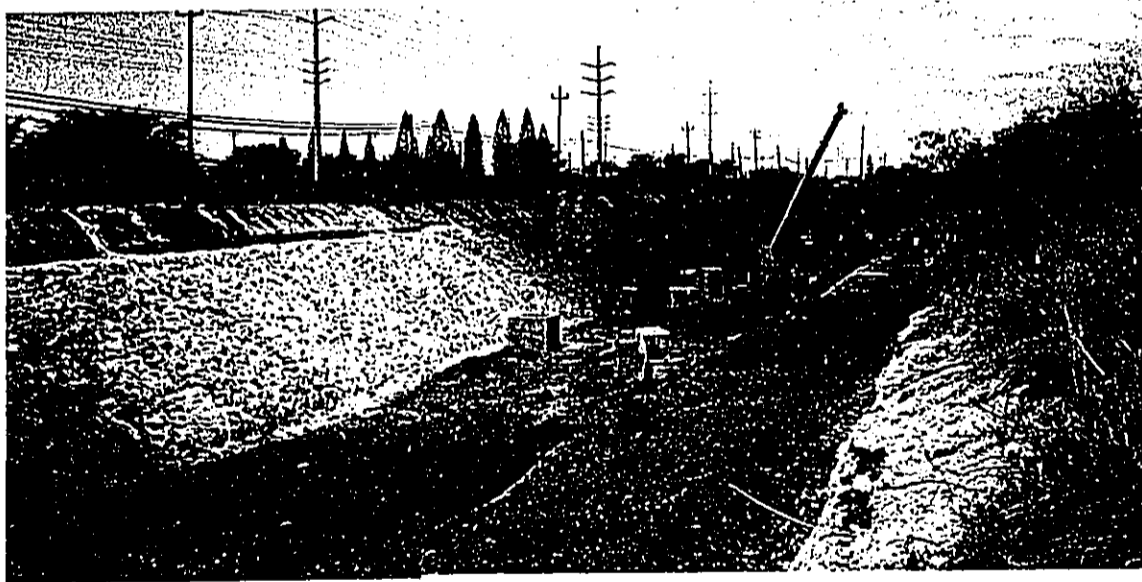
Irrigation for the school will be connected to the existing system along Kapolei Parkway.



Facing northwest from the southeast corner of school site, shows sparse grassy, coral/clay surface.



Facing southeast from the southwest corner of school site, shows buildings at Barbers Point south of school site.



Facing west from the southeast corner of school site, shows drainage channel along the boundary with Barbers Point. The drainage channel has been improved under the Villages of Kapolei development.

APPENDIX E

**Kapolei High School
Facilities Assessment
and
Development Schedule
(FADS)**

State of Hawaii
FACILITIES ASSESSMENT and DEVELOPMENT SCHEDULE
 FADS
 Department of Education
 REV. 12/8/97

SCHOOL NAME: Kapolei High School YRE - MT? YES
 DISTRICT: Leeward COMPLEX: Kapolei Air-Con? YES
 GRADE ORGANIZATION: BOTT: 9 TOP: 12 RAINFALL: 25
 CURRENT ENROLLMENT: 1800
 REGULAR ENROLLMENT: n/a
 SPEC ED ENROLLMENT: 41
 PROJECTED SPECIAL EDUCATION ENROLLMENT @ DESIGN: 22
 SPED TCHRS) or % ENROLL: 16.5%
 MAX. ADJUSTMENT: 18
 SPEC ED (12/CLRM): 10
 DESIGN ENROLLMENT: 1800
 REGULAR ENROLLMENT: 1683
 SPECIAL ED @ 7% of DE: 117
 PERMANENT CR: 77+8
 SUPPL PORTABLES: 8
 PEAK PORTABLES: 85+8
 TOTAL ALL CLRM: 85+8
 YRE - MT SCHOOL: 4 TRACKS D.E. MULTIPLIER = 1.33

FACILITY TYPE	EXISTG AREA	EXISTG EDSPEC	EXISTG % EDSPEC	AVG SF/CLRM
Classrooms				
Supports				
Total Area				

DESIGN ENROLLMENT

1800 Permanent Clrm. = 77 + 8 *

Existing Clrm. = 0

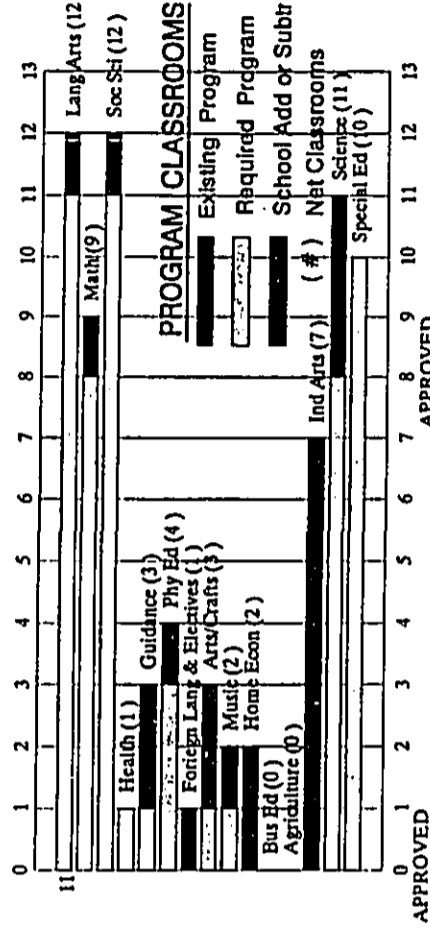
New Clrm. = 77 + 8 *

B.O.E. PROGRAM DEVELOPMENT (9-12)

* School Added (8) Optional Program Clrm(s)

Program	Required Credit Clrm No.	Existing Program Clrm(s)	Total Clrm(s)
Language Arts	4	1150 (5ct)	12
Mathematics	3	1150 (4ct)	9
Social Studies	4	1150 (5ct)	12
Health	1/2		1
Guidance	1/2		1
Physical Education	1	2300 (1ct)	3
Foreign Lang. & Electives	3	1150 (2ct)	4
Arts & Crafts	1/2	1150 (1ct)	1
Music	1/2	2300 (1ct)	3
Home Economics	1	1150 (1ct)	2
Business Education	1	2300 (1ct)	2
Agriculture			
Industrial Arts		71050 (1c)	7
Science	3	31450 (4ct)	11
Special Education	10		10
TOTAL PERMANENT		55	77
Deleted (8) Suppl Portables			-8
Added (8) Suppl Permanents			8
TOTAL PERMANENT			77
NEW CAPACITY = 1992+ 2002 In Peak			85
Optional			85

EDUCATIONAL PROGRAM GRAPHIC FOR THIS INCREMENT Incl (9) Portable



School Principal

Date

District Superintendent

Date

DESIGN ENROLLMENT
1800

Required:	Existing	New
Credit	Credit	Credit
No.	No.	No.
4	0	4
3	0	3

GENERAL NOTES

Required:	Existing	New
Credit	Credit	Credit
No.	No.	No.
4	0	4
3	0	3

DETAILED PROGRAM / CLASSROOM SUMMARY FOLLOWS

		(2) Adjustment G. Crim		
		Required:	Existing	New
		Credit	Credit	Credit
		No.	No.	No.
LANGUAGE ARTS				
Language Arts		4	0	4
Mathematics		3	0	3
SOCIAL STUDIES				
Social Studies		4	0	4
PHYSICAL EDUCATION				
Physical Education		3	0	3
GUIDANCE and HEALTH				
Health		1	0	1
Guidance		2	0	2
ELECTIVE PROGRAMS				
Foreign Language (GCR)		1	0	1
News Writing		1	0	1
Drama		1	0	1

DESIGN ENROLLMENT
1800

Required:	Existing	New
Credit	Credit	Credit
No.	No.	No.
2	0	2
1	0	1

		(2) Adjustment		
		Required:	Existing	New
		Credit	Credit	Credit
		No.	No.	No.
HOME ECONOMICS				
Family Living		1	0	1
Foods Laboratory		1	0	1
Clothing Laboratory		1	0	1
BUSINESS EDUCATION				
Business, Notetaking, Mgt.				
Advertising, Business Law				
Records, Sales, Marketing				
Accounting				
Shorthand / Typing				
Cooperative Distribution				
Office Practice & Mach.				

AGRICULTURE

Horticulture				
Agricultural Technology				

PRACTICAL ARTS and FINE ARTS on NEXT PAGE

		(7) Adjustment		
		Required:	Existing	New
		Credit	Credit	Credit
		No.	No.	No.
INDUSTRIAL ARTS				
Graphic Arts Laboratory		2	0	2
Drafting and Design Lab		1	0	1
Electricity and Electronics		2	0	2
Power / Automotive Lab				
Metals Laboratory				
Woods Laboratory				
Vocational Technology				
ARTS and CRAFTS				
Crafts		1	0	1
Drawing and Painting		1	0	1
Photography		1	0	1
MUSIC				
Band		1	0	1
Choral		1	0	1

DESIGN ENROLLMENT
1800

SCIENCE (3 Credits and 8 Clrm Minimum)	(3) Adjustment		(3) Adjustment	Total Credits
	Required Credit	Existing No. % of		
General Science	4			4
Biology / Marine Science	4			4
Chemistry	2	1 450 (2ct)		3
Physics / Earth Science	2	2 600 (2ct)		4
Optional Science	2			4
Reduce Number of Spec Ed Resource or Self Contained (Yes / No) ?			NO	
SPECIAL EDUCATION (12 / CLRM)				
Resource	9		-5	4
Self Contained *X*	1		1	2
Self Contained *Y*	4		4	4

OPTIONAL PROGRAM CLASSROOMS

Suppl Program Permanent CR					
					8

END OF DETAILED PROGRAM / CLASSROOM SUMMARY

Max Add'n Area = 197066	COMPONENT: [] = Rec'd	Units	Ed Spec	Existing Area	New Area: (+/-)	Excess/Deficit, (c)	EDSPEC
PROJECT:							
School Summary - Classrooms							
Ex: GEN CLASSROOM(S) (36)		41	900	36900	e	36900	36900
General Classroom "A"							
General Classroom "B"							
PROJECT:							
School Summary - Classrooms							
Ex: ELECTIVE CLRM(S) (1)			900				
Foreign Language							
News / Yearbook (1)		1	1500	1500	e	1500	1500
Drama			1080				
PROJECT:							
School Summary - Classrooms							
Ex: ARTS and CRAFTS (3)			1992				
Crafts (1)		1	1992	1992	e	1992	1992
Drawing & Painting (1)		1	1540	1540	e	1540	1540
Photography (1)		1	1625	1625	e	1625	1625

MINIMUM PERMANENT CLRM(S) REQUIRED BY EDSPEC
PERMANENT CLRMS REQUESTED BY SCHOOL PLAN 77
CLASSROOM SUMMARY CONTINUED 85

Selected Area = EDSPEC BUDGET \$
School Summary - Classrooms New Area: (+/-) Excess/Deficit, (c) EDSPEC

PROJECT:							
Ex: MUSIC (2)			3670				
Band (1)		1	3670	3670	e	3670	3670
Choral (1)		1	1775	1775	e	1775	1775
Music Common Areas		1	667	667	e	667	667
PROJECT:							
Ex: BUSINESS ED (1)			1131				
Accounting			1131				
Shorthand/Typing			1560				
Coop. Distribution			1356				
Office Business Mach			1616				

PROJECT:							
Ex: AGRICULTURAL ARTS (1)			1512				
Horticulture			1512				
Ag Technology			4332				

MINIMUM PERMANENT CLRM(S) REQUIRED BY EDSPEC
PERMANENT CLRMS REQUESTED BY SCHOOL PLAN 77
CLASSROOM SUMMARY CONTINUED 85

Max Add'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: [7] = Req'd		Pm'nt	Area	Area	Area	Flr Area	Area
School Summary - Classrooms		New Area: (+/-)	Excess/Deficit	(c)	BDSPEC		
INDUSTRIAL ARTS: [7]							
Graphic Arts Lab [2]	2	3532	7064			7064	7064
Drafting/Design Lab [1]	1	1820	1820			1820	1820
Electricity/Electronics [2]	2	3596	7192			7192	7192
Power/Automotive Lab		5814					
Metals Laboratory		3620					
Woods Laboratory [1]	1	3610	3610			3610	3610
Vocational Tech [1]	1	2000	2000			2000	2000
HOME ECONOMICS: [2]							
Family Living [1]	1	1654	1654			1654	1654
Food Laboratory [1]	1	1600	1600			1600	1600
Clothing Laboratory		1600					

MINIMUM PERMANENT CLRM(S) REQUIRED BY EDSPEC 77
PERMANENT CLRMS REQUESTED BY SCHOOL PLAN 85
CLASSROOM SUMMARY CONTINUED

Selected Area = EDSPEC BUDGET \$ PROJECT:
 School Summary - Classrooms New Area: (+/-) Excess/Deficit, (c) EDSPEC

SCIENCE: [17]		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: [7] = Req'd		Pm'nt	Area	Area	Area	Flr Area	Area
School Summary - Classrooms		New Area: (+/-)	Excess/Deficit	(c)	BDSPEC		
GENERAL SCIENCE							
General Science		1600					
Biology/Marine Sci [4]	4	1938	7752			7752	7752
Chemistry [3]	3	2124	6372			6372	6372
Physics/Earth Sci [4]	4	2118	8472			8472	8472
Optional Science		1600					
SPECIAL EDUCATION: [10]							
Self Contained "A" [2]	2	1880	3760			3760	3760
Self Contained "B" [4]	4	940	3760			3760	3760
Resource [4]	4	810	3240			3240	3240
OPTIONAL PROGRAMS: [8]							
Suppl Program Permanent CI	8	900	7200			7200	7200

MINIMUM PERMANENT CLRM(S) REQUIRED BY EDSPEC 77
PERMANENT CLRMS REQUESTED BY SCHOOL PLAN 85
END of CLASSROOM SUMMARY - SUPPORT SUMMARY NEXT PAGE

Max Add'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: [7] = Req'd		Pm'nt	Area	Area	Area	Flr Area	Area
School Summary - New Support		New Area: (+/-)	Excess/Deficit	(c)	EDSPEC		
ADMINISTRATIVE							
Administrative Center	1	6668	6668			6668	6668
Library Media Center	1	12660	12660			12660	12660
Cafeteria/Multi-purpose	1	11150	11150			11150	11150
Kitchen (CONV)	1	4003	4003			4003	4003
Custodial Service Center	1	471	471			471	471
Faculty Center	4	835	3340			3340	3340
Computer Resource Center	3	900	2700			2700	2700
itinerant Special Educat'n	1	330	330			330	330
Teacher Center(s)	26	100	2600			2600	2600
Language Laboratory	1	890	890			890	890
PE Locker Shower	1	6356	6356			6356	6356
Athletic Locker Shower	1	8582	8582			8582	8582
Gymnasium	1	20143	20143			20143	20143
Adult Education Center	1	2008	2008			2008	2008
Auditorium (Optional)			By Design				
Staff Parking (1/17 Student)	Stalls	1/17	106			106	106
Visitor Parking (LS)	Stalls	LS	10			10	10

COMPLETE SCHOOL SUMMARY NEXT PAGE

Selected Area = EDSPEC BUDGET \$ PROJECT:

197066 197066 197066

TOTAL CLASSROOM ADDITION AREA		Edspec	105965	105965	105965
BOE Program Clrms	Edspec	105965		105965	105965
Optional Classrooms	Edspec	2000		2000	2000
Optional Program Clrms	7200			7200	7200

TOTAL SUPPORTS ADDITION AREA		Edspec	81901	81901	81901
BOE Support Facilities	Edspec	81901	5000	81901	86901
Optional Support Fac.	Edspec	By Design			
Optional Support Fac.	Edspec	81901		81901	81901

The Unit areas and ED SPEC areas shown on the school summary and on the individual facility component tables are net Educational Program and School Support floor areas and do not include area required for building structure, systems, service enclosures, auxiliary rooms, corridors, and passageways unless specifically shown otherwise in the tables.

THIS SCHOOL DOES NOT QUALIFY FOR COVERED WALKWAYS

Max Addit'n Area = 197066										
COMPONENT:	Reg'd	Unit	Ed Spec	Existing	New	Total				
		Pmnt	Area	Area	Area	Area				
General Classroom 'A'										
41 Total General Classroom 'A'										

General Classroom	1	450	450			450				
28 pupil activity area	1	177	177			177				
12 pupil activity area	1	78	78			78				
Individual activity area	1	60	60			60				
Teacher station	1	135	135			135				
Circulation area										
Area General Classroom 'A'			900			900				
Area All New: General Classroom 'A'			36900			36900				
Selected Area = EDSPEC BUDGET \$										
General Classroom 'A' Notes and Comments										

Max Addit'n Area = 197066										
COMPONENT:	Reg'd	Unit	Ed Spec	Existing	New	Total				
		Pmnt	Area	Area	Area	Area				
General Classroom 'B'										

General Classroom	1	450	450			450				
28 pupil activity area	1	177	177			177				
12 pupil activity area	1	78	78			78				
Individual activity area	1	60	60			60				
Teacher station	1	135	135			135				
Circulation area										
Area General Classroom 'B'			900			900				
Area All New: General Classroom 'B'										
Selected Area = EDSPEC BUDGET \$										
General Classroom 'B' Notes and Comments										

Max Addit'n Area = 197066	Unit: Pmnt	Ed. Spec. Area	Existing Area	New Area	Total Area
COMPONENT	77				
Special Education	10	Total Special Education Classrooms			

Self-contained cirm "X"	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	528	528		528
Home Living Area	1	272	272		272
Bathroom	2	70	140		140
Laundry Room	1	96	96		96
Construction Room	1	556	556		556
Food Service Area	1	288	288		288
Carport	1	480	480	Outdoor	
Area of Self Contained TYPE "X"			1880		1880

Self-contained cirm "Y"	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	528	528		528
Home Living Area	1	272	272		272
Bathroom	2	70	140		140
Area of Self Contained TYPE "Y"			940		940

Selected Area = EDSPEC BUDGET \$	PROJECT:
Special Education	10 Total Special Education Classrooms

Special Education Resource:	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	352	352		352
Small group activity area	1	458	458		458
Area of Resource Classroom			810		810

Itinerant Services Room	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Small Group Meeting	1	330	330		330
Area of Itinerant Services			330		330

Total All Self Contained "X"	2	1880	3760		3760
Total All Self Contained "Y"	4	940	3760		3760
Total All Resource Services	4	810	3240		3240
Itinerant (Support Area)	1	330	330		330
Total All New Special Education			10760		10760

Max Addit'n Area = 197066	Unit: Pmnt	Ed. Spec. Area	Existing Area	New Area	Total Area
COMPONENT	77				
Special Education	10	Total Special Education Classrooms			

Self-contained cirm "X"	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	528	528		528
Home Living Area	1	272	272		272
Bathroom	2	70	140		140
Laundry Room	1	96	96		96
Construction Room	1	556	556		556
Food Service Area	1	288	288		288
Carport	1	480	480	Outdoor	
Area of Self Contained TYPE "X"			1880		1880

Self-contained cirm "Y"	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	528	528		528
Home Living Area	1	272	272		272
Bathroom	2	70	140		140
Area of Self Contained TYPE "Y"			940		940

Selected Area = EDSPEC BUDGET \$	PROJECT:
Special Education	10 Total Special Education Classrooms

Special Education Resource:	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Lecture area	1	352	352		352
Small group activity area	1	458	458		458
Area of Resource Classroom			810		810

Itinerant Services Room	Unit	Ed. Spec. Area	Existing Area	New Area	Total Area
Small Group Meeting	1	330	330		330
Area of Itinerant Services			330		330

Total All Self Contained "X"	2	1880	3760		3760
Total All Self Contained "Y"	4	940	3760		3760
Total All Resource Services	4	810	3240		3240
Itinerant (Support Area)	1	330	330		330
Total All New Special Education			10760		10760

Max Addit'n Area = 197066		77	Unit	Ed. Spec.	Existing	New	Total
COMPONENT: [X] = Reg'd		Pm/nt	Area	Area	Area	Fit. Area	Area
Agricultural Arts							
Horticulture							
Classroom - 28 pupil	1	960	960				
Boys' Shower / Locker / Toilet	1	156	156				
Girls' Shower / Locker / Toilet	1	156	156				
Lath house	1	800	800	Outdoor		800	
Mist house	2	32	64	Outdoor		64	
Lumite Green House	1	800	800	Outdoor		800	
Controlled Environment Hse	1	1500	1500	Outdoor		1500	
Soil Bins	4	100	400	Outdoor		400	
Equipment shed	1	168	168				
Oil and gas storage room	1	72	72				
Outdoor Planting Area	1	10000	10000	Outdoor		10000	
Indoor Area of Agriculture Cirm			1512				
Total All New-Indoor Horticulture							
Selected Area = EDSPEC BUDGET \$							
Agricultural Arts							
Notes and Comments							
PROJECT:							

Max Addit'n Area = 197066		77	Unit	Ed. Spec.	Existing	New	Total
COMPONENT: [X] = Reg'd		Pm/nt	Area	Area	Area	Fit. Area	Area
Agricultural Arts							
Technology							
Classroom - 28 pupil	1	960	960				
Teacher's Office	1	90	90				
Teachers Restroom	1	54	54				
Farm Shop	1	2160	2160				
Boys' Shower / Locker / Toilet	1	252	252				
Girls' Shower / Locker / Toilet	1	260	260				
Fertilizer / Insecticide Room	1	80	80				
Produce & Killing Room	1	256	256				
Feed / Brooder Room	1	220	220				
Controlled Environment Hse	1	1500	1500	Outdoor		1500	
Outdoor Planting Area	1	10000	10000	Outdoor		10000	
Swine Pens	1	200	200	Outdoor		200	
Poultry Shed	1	270	270	Outdoor		270	
Animal & Crop Area	1	9530	9530	Outdoor		9530	
Indoor Area of Agriculture Cirm			4332				
Total All New-Indoor Technology							
Selected Area = EDSPEC BUDGET \$							
Agricultural Arts							
Notes and Comments							
PROJECT:							

Max Addit'n Area = 197066	77	Units	Ed Spec	Existing	New	Total
COMPONENT: [] = Reg'd	Print	Area	Area	Area	Area	Area
Art Education	3	Total Art Education Classrooms				

Drawing and Painting	1	1364	1364			1364
Classroom Area	1	176	176			176
Storage Room						
Area of Drawing & Painting Classroom			1540			1540
Crafts	1	1680	1680			1680
Classroom Area	1	136	136			136
Kiln Room	1	176	176			176
Storage Room						
Area of Crafts Classroom			1992			1992

Selected Area = EDSPC	BUDGET \$	PROJECT:
Art Education		Notes and Comments

Max Addit'n Area = 197066	77	Units	Ed Spec	Existing	New	Total
COMPONENT: [] = Reg'd	Print	Area	Area	Area	Area	Area
Art Education	3	Total Art Education Classrooms				

Photography	1	960	960			960
Classroom Area	1	500	500			500
Printing Room	1	15	15			15
Drying Room	1	100	100			100
Film-Processing Room	1	50	50			50
Storage Room						
Area of Photography Classroom			1625			1625
Total All Drawing & Paint'g	1		1540			1540
Total All Crafts	1		1992			1992
Total All Photography	1		1625			1625

Selected Area = EDSPC	BUDGET \$	PROJECT:
Art Education		Notes and Comments

Max Addit'n Area = 197066		77	Units	Ed. Spec.	Existing	New	Total
COMPONENT: [] - Req'd		Pm't	Area	Area	Area	Fin Area	Area
Business Education							
General Business (Gen Cirm)							
Classroom Area	1	900	900				
Accounting							
Classroom Area	1	1131	1131				
Area of Accounting Cirm			1131				
Shorthand / Typing							
Classroom	1	1400	1400				
Storage Workroom	1	160	160				
Area of Typing Cirm			1580				
Office Practice & Machines							
Classroom Area	1	1280	1280				
Duplicating Area	1	144	144				
Transcription Keypunch Rm	1	192	192				
Area of Office Practice and Machines			1616				
Selected Area = EDSPEC BUDGET \$ CONTINUED PROJECT:							
Business Education Notes and Comments							

Max Addit'n Area = 197066		77	Units	Ed. Spec.	Existing	New	Total
COMPONENT: [] - Req'd		Pm't	Area	Area	Area	Fin Area	Area
Business Education							
Cooperative Distribution							
Theory/Computation	1	840	840				
Sales and Display	1	122	122				
Model Store	1	279	279				
Coordinator's Office	1	115	115				
Area of Cooperative Distribution			1356				
Total All Accounting							
Total All Shorthand / Typ'g							
Total All Office Practice							
Total All Coop. Distrib.							
Selected Area = EDSPEC BUDGET \$ PROJECT:							
Business Education Notes and Comments							

Max Addit'n Area = 197068	777	Units	Ed:Specs	Existing	+	New	Total
COMPONENT: [] = Req'd	Pm't	Area	Area	Area	-	Fir Area	Area
Home Economics	2	Total Home Economics	Classrooms				

Family Living	1	706	706				706
Lecture Area	1	374	374				374
Child Care Area	1	160	160				160
Dining / Living Area	1	154	154				154
Food Preparation Area	1	100	100				100
Home Nursing Area	1	60	60				60
Multi-Purpose Storage Rm	1	50	50				50
Laundry Room	1	50	50				50
Bathroom	1	50	50				50
Area of Family Living Cirm			1654				1654

CONTINUED
 Selected Area = EDSPEC BUDGET \$
 Home Economics Notes and Comments

Max Addit'n Area = 197068	777	Units	Ed:Specs	Existing	+	New	Total
COMPONENT: [] = Req'd	Pm't	Area	Area	Area	-	Fir Area	Area
Home Economics	2	Total Home Economics	Classrooms				

Clothing Laboratory	1	650	650				650
Lecture Area	1	450	450				450
Clothing Construction Area	1	300	300				300
Garment Industry Training	1	82	82				82
Storage Room	1	63	63				63
Fitting Room	1	55	55				55
Laundry Room	1	55	55				55
Area of Clothing Laboratory			1600				1600

CONTINUED
 Selected Area = EDSPEC BUDGET \$
 Home Economics Notes and Comments

Max Addit'n Area = 197066		Unit	Ed Spec	Existing	New	Total
COMPONENT: [] = Reg'd		Pm/nt	Area	Area	Area	Area
Home Economics		2	Total Home Economics Classrooms			
Foods Laboratory	1	800	800			800
Lecture/Dining Area	1	425	425			425
Food Service Training Area	1	170	170			170
Storage Room	1	150	150			150
Laundry Room	1	55	55			55
Area of Foods Laboratory			1600			1600
Total All Family Living	1		1654			1654
Total All Cloth Laboratory	1		1600			1600
Total All Foods Laboratory	1		3264			3264
Total, All, New, Home Economics - Cirm(s)			3264			3264
Selected Area = EDSPCE						
Home Economics						

Max Addit'n Area = 197066		Unit	Ed Spec	Existing	New	Total
COMPONENT: [] = Reg'd		Pm/nt	Area	Area	Area	Area
Industrial/Art Education		7	Total Industrial Art Education Classroom			
Metals Lab	1	760	760			760
32 pupil classroom	1	90	90			90
Office	1	75	75			75
Supplies & parts room	1	810	810			810
Bench metalwork area	1	130	130			130
Hot metalwork area	1	700	700			700
Machine toolwork area	5	90	450			450
Project storage rooms	1	160	160			160
Materials storage room	1	120	120			120
Finishing room	1	25	25			25
Compressor room	1	150	150			150
Locker & toilet rooms:						
Girls' (16 pupil)	1	150	150			150
Boys' (16 pupil)	1	150	150			150
Area of Metals Shop			3620			3620
Total, All, New, Metals-Shop(s)			3620			3620
Selected Area = EDSPCE						
Industrial/Art Education						

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total	
COMPONENT: [] = Req'd		Pm't	Area	Area	Area	Flr Area	Area	
Industrial Art Education		7	Total Industrial Art Education Classroom					
Woods Lab								
32 pupil classrooms	1	760					760	
Office	1	90					90	
Supplies & parts room	1	75					75	
Bench woodwork area	1	930					930	
Machine woodwork area	1	700					700	
Project storage rooms	5	90					450	
Materials storage room	1	160					160	
Finishing room	1	120					120	
Compressor room	1	25					25	
Locker & toilet rooms:								
Girls'	1	150					150	
Boys'	1	150					150	
Area of Woods Shop							3610	
Total of All New Woods Shops							3610	
Selected Area = EDSPEC BUDGET \$							3610	
Industrial Art Education Notes and Comments								

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total	
COMPONENT: [] = Req'd		Pm't	Area	Area	Area	Flr Area	Area	
Industrial Art Education		7	Total Industrial Art Education Classroom					
Graphic Arts								
Classroom	1	760					760	
Office	1	120					120	
Supply / Parts Room	1	120					120	
Press Area	1	780					780	
Composing Area	1	640					640	
Planning Area	1	376					376	
Stockroom	1	200					200	
Photo Laboratory	1	200					200	
Girls' Locker / Toilet	1	150					150	
Boys' Locker / Toilet	1	150					150	
Teacher Toilet	1	36					36	
Area of Graphic Arts Shop							3532	
Total of All New Graphic Arts Shops							7064	
Selected Area = EDSPEC BUDGET \$							7064	
Industrial Art Education Notes and Comments								

Max Addit'n Area = 197066	77	Units Area	Ed. Spec. Area	Existing Area	+	New Area	Total Area
COMPONENT: Pm/nt	Req'd				-	Fin Area	
Industrial Art Education	7	Total Industrial Art Education Classroom					

Drafting & Design	1	1520	1520				1520
Drafting and Designing Area	1	120	120				120
Model Building Area	1	90	90				90
Office	1	90	90				90
Equipment/Supply Room	1	90	90				90
Area of Drafting & Design			1820				1820
Total All New Drafting & Design Clm's			1820				1820
Selected Area = EDSPEC BUDGET \$							
PROJECT: Industrial Art Education Notes and Comments							

Max Addit'n Area = 197066	77	Units Area	Ed. Spec. Area	Existing Area	+	New Area	Total Area
COMPONENT: Pm/nt	Req'd				-	Fin Area	
Industrial Art Education	7	Total Industrial Art Education Classroom					

Electricity & Electronics	2	760	760				760
Classroom	1	120	120				120
Office	1	120	120				120
Supply/Parts Room	1	120	120				120
Communication Room	1	120	120				120
Testing Room	1	200	200				200
Project Storage Room	4	90	360				360
Machine Working Area	1	270	270				270
Bench Working Area	1	1310	1310				1310
Girls' Locker/Toilet	1	150	150				150
Boys' Locker/Toilet	1	150	150				150
Teacher Toilet	1	36	36				36
Area Electricity & Electronics			3596				3596
Total All New Electricity/Electronics Shd			7192				7192
Selected Area = EDSPEC BUDGET \$							
PROJECT: Industrial Art Education Notes and Comments							

Max Addit'n Area = 197068	Unit: 77	Ed Spec: 1440	Existing Area: 1440	New Area: 1440	Total Area: 1440
COMPONENT: [X] - Reg'd	Pm't Area: 185	Area: 185	Area: 185	Area: 185	Area: 185
Music (Choral & Band)	2	Total Music (Choral & Band)	1775	1775	1775

Choral room	Unit	Ed Spec	Existing Area	New Area	Total Area
80 pupil main choral room	1	1440	1440		1440
Choral office	1	185	185		185
Robe Storage	1	150	150		150
Area of Choral Room			1775		1775

Band room	Unit	Ed Spec	Existing Area	New Area	Total Area
100 pupil main instrument rm	1	2500	2500		2500
Instrument practice room	3	115	345		345
Instrument ensemble room	1	300	300		300
Instrument repair & stor.	1	340	340		340
Band office	1	185	185		185
Area of Band Room			3670		3670

Selected Area = EDSPEC BUDGET \$		PROJECT:	
Music (Choral & Band)	2	Total Music (Choral & Band)	Classrooms
On			

Common facilities	Unit	Ed Spec	Existing Area	New Area	Total Area
Library	1	125	125		125
Vestibule	1	160	160		160
Mechanical room	1	150	150		150
Toilet (boys/girls)	2	96	192		192
Janitor's closet	1	40	40		40
Area of Common Facilities			667		667

Area of Common Facilities	1	667		667
Area of Choral Room	1	1775		1775
Area of Band Room	1	3670		3670

Total of All Music: 6112

Max Addit'n Area = 197068	Unit: 77	Ed Spec: 1440	Existing Area: 1440	New Area: 1440	Total Area: 1440
COMPONENT: [X] - Reg'd	Pm't Area: 185	Area: 185	Area: 185	Area: 185	Area: 185
Music (Choral & Band)	2	Total Music (Choral & Band)	1775	1775	1775

Choral room	Unit	Ed Spec	Existing Area	New Area	Total Area
80 pupil main choral room	1	1440	1440		1440
Choral office	1	185	185		185
Robe Storage	1	150	150		150
Area of Choral Room			1775		1775

Band room	Unit	Ed Spec	Existing Area	New Area	Total Area
100 pupil main instrument rm	1	2500	2500		2500
Instrument practice room	3	115	345		345
Instrument ensemble room	1	300	300		300
Instrument repair & stor.	1	340	340		340
Band office	1	185	185		185
Area of Band Room			3670		3670

Selected Area = EDSPEC BUDGET \$		PROJECT:	
Music (Choral & Band)	2	Total Music (Choral & Band)	Classrooms
On			

Common facilities	Unit	Ed Spec	Existing Area	New Area	Total Area
Library	1	125	125		125
Vestibule	1	160	160		160
Mechanical room	1	150	150		150
Toilet (boys/girls)	2	96	192		192
Janitor's closet	1	40	40		40
Area of Common Facilities			667		667

Area of Common Facilities	1	667		667
Area of Choral Room	1	1775		1775
Area of Band Room	1	3670		3670

Total of All Music: 6112

Max Addit'n Area = 197066		Unit	Ed Spec	Existing	New	Total
COMPONENT: [] = Req'd		Pm't	Area	Area	Fir Area	Area
Administrative Center						
5000 SqFt Existing Area						
Principal's office	1	200	200			200
Vice - Principal's office	4	200	800			800
General office:	1	420	420			420
YRE - MT Clerk	1	100	100			100
FMS	1	100	100			100
Duplicating room	1	130	130			130
Storage room	1	240	240			240
Lobby	1	240	240			240
Staff conference room	1	240	240			240
Registrar's Office	1	120	120			120
Registrar's Workroom	1	600	600			600
Health service:						
Treatment room	1	170	170			170
Recovery room	1	200	200			200
Nurse's station/waiting area	1	150	150			150
Toilet	1	70	70			70
CONTINUED						
Selected Area = EDSPEC		BUDGET \$		PROJECT:		
Administrative Center						
5000 SqFt Existing Area						
Counselor's office	7	140	980			980
Special Services / Conf. Rm	1	264	264			264
Student Activities Coordinator		120				
Staff lounge	1	190	190			190
Men's & Women's toilet	2	70	140			140
Custodial closet	1	40	40			40
Hallway/waiting alcove	1	864	864			864
PCNC	1	350	350			350
Communications Room	1	60	60			60
Electrical / Mechanical Room	1	Area by Designer				
Total Area of Admin Center						6668

Max Addit'n Area = 197066		Unit	Ed Spec	Existing	New	Total
COMPONENT: [] = Req'd		Pm't	Area	Area	Fir Area	Area
Administrative Center						
5000 SqFt Existing Area						
Adult Education Center						
For an enrollment of: 6000						
General Office	1	420	420			420
Workroom	1	130	130			130
Storage	1	240	240			240
Lobby	1	240	240			240
Principal's Office	1	200	200			200
Vice - Principal's office	1	120	120			120
Registrar's Office	1	120	120			120
Counselor's Office	1	120	120			120
Men's & Women's Toilet	2	70	140			140
Hallway	1	278	278			278
Total Area of Adult Education Center						2008
Selected Area = EDSPEC		BUDGET \$		PROJECT:		
Administrative Center						
Notes and Comments						

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Food preparation area		1	1400	1400			1400
Dry Storage		1	425	425			425
Walk-in Refrigerator		1	140	140			140
Walk-in Freezer		1	140	140			140
Serving area		1	960	960			960
Tray Return Area		1	240	240			240
Can Wash Area		1	50	50			50
Pot & Pan Area #1		1	128	128			128
Pot & Pan Area #2							
Transport Cart Storage Area							
Office							
Lockers and toilets		1	100	100			100
Utility and broom - linen closet		2	110	220			220
Heater room		1	200	200			200
Electric & Compressor Rooms		1	Area by Designer				
Dishwashing (Y or N)		2	Area by Designer				
Total Area of Kitchen				4003			4003

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Cafeteria/Multi-Purpose **1** Notes and Comments

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment (DE)		1800					
Student dining room (DE x 5)		1	9000	9000			9000
Portable stage area			480				425
Superimposed on dining Rm							140
Stage storage		1	250	250			140
Ramp/Chair storage		1	200	200			960
Amplifier area		1	20	20			240
Hallway		1	120	120			50
Boy's dressing/storage room		1	180	180			128
Girl's dressing/storage room		1	180	180			
Boy's toilet		1	70	70			
Girl's toilet		1	70	70			
Custodial closet		1	40	40			
Staff dining room		1	1020	1020			1020
Total Area Cafe/Multipurpose				11150			11150

Selected Area = EDSPEC BUDGET \$ **1** PROJECT: **CONTINUED**

Custodial Service Center **1**

Max Addit'n Area = 197066		77	Unit Area	Ed Spec Area	Existing Area	New Area	Total Area
COMPONENT: [] = Req'd		Pm'nt	Area	Area	Area	Fir Area	Area
Dining/Multi - Purpose		1					
SERV - CONV - PREP - ? ? CONV							
Design Enrollment							

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: [F] = Req'd		Pmnt	Area	Area	Area	Area	Area
Library Media Center							
1							
Office	1	280	280				280
Large group area:							
Circulation desk	1	286	286				286
Reading/study/bookstack	1	7116	7116				7116
Periodical	1	266	266				266
Resource Centers	3	550	1650				1650
Student conference	1	504	504				504
Video Production Room							
Workroom/production room:	1	1000	1000				1000
Prof. Staff & mat. area	1	336	336				336
Storage room	1	432	432				432
Custodial closet	1	40	40				40
Staff toilet	2	75	150				150
Media control center	1	450	450				450
Signal processing room	1	150	150				150
Total Area Library Media Center			12660				12660
Selected Area = EDSPEC			BUDGET \$				PROJECT:

Library Media Center Notes and Comments

Provides (1) Mechanical Room and (1) Electrical Room with areas by designer

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: [F] = Req'd		Pmnt	Area	Area	Area	Area	Area
Faculty Center							
4							
Total Faculty Center(s)							
Faculty Center							
Work area	1	225	225				225
Lounge area	1	150	150				150
Gen. cr storage room	1	320	320				320
Women's toilet	1	70	70				70
Men's toilet	1	70	70				70
Total Area Faculty Center			835				835
Total Area Faculty Center			BUDGET \$				PROJECT:

Faculty Center Notes and Comments

Max Addit'n Area = 197066	77	Unit Area	Ed Spec Area	Existing Area	+	New Area	Total Area
COMPONENT: [] = Req'd	Pm'nt	Area	Area	Area	+	Flr Area	Area
Computer Resource Cntr	3	Total	Computer Resource Cntr(s)				

Computer Resource Center	77	Unit Area	Ed Spec Area	Existing Area	+	New Area	Total Area
	Pm'nt	Area	Area	Area	+	Flr Area	Area
General requirements	3						
Group activity area	4	150	600				600
Common activity area	1	100	100				100
Circulation area	1	200	200				200
Area of Computer Center			900				900
Total: All New Computer Centers			2700				2700
Selected Area = EDSPREC BUDGET \$							

Computer Resource Cntr Notes and Comments

PROJECT:

Max Addit'n Area = 197066	77	Unit Area	Ed Spec Area	Existing Area	+	New Area	Total Area
COMPONENT: [] = Req'd	Pm'nt	Area	Area	Area	+	Flr Area	Area
Teacher Center (YRE-MT)	28	EDSPEC	TEACHER STATIONS				

NUMBER OF CENTERS 'A'	5	SCHOOL OPTIONS FOR TEACHER CENTERS
Teacher work stations (Each)	4	60
Conference room (/ Station)	1	240
Storage (/ Station)	1	80
Area of Teacher Center	100 SF / Tch	400
		240

NUMBER OF CENTERS 'B'	2	SCHOOL OPTIONS FOR TEACHER CENTERS
Teacher work stations (Each)	3	60
Conference room (Each)	1	180
Storage (Each)	1	60
Area of Teacher Center	100 SF / Tch	300
		180
		60
		300

SCHOOL SPEC PROVIDE: 100 SQFT OF CENTER AREA / CORE TEACHER

Area of All New Teacher Center(s) 2800

Selected Area = EDSPREC BUDGET \$ 2600

Teacher Center (YRE-MT)Notes and Comments

PROJECT:

Provide a total of (28) teacher stations based on a YRE-MT with 4 tracks.

If more than one Teacher Center is provided reduce the number of stations per center proportionately.

Locate Teacher Work Center near Faculty Center(s)

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: []=Req'd		Pm't	Area	Area	Area	Flr Area	Area
Language Laboratory		1					
Language Laboratory		1					
Laboratory Area		1	850	850			850
Recording Room		1	40	40			40
Area of Language Laboratory				890			890
Total Area of Language Laboratory (e)				890			890
Selected Area = EDSPEC BUDGET \$							

Language Laboratory Notes and Comments

N

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	New	Total
COMPONENT: []=Req'd		Pm't	Area	Area	Area	Flr Area	Area
P.E. Locker/Shower (Girl)		1					
Girls' locker/shower		1					
Locker room		1	1040	1040			1040
Shower room		1	400	400			400
Drying room		1	255	255			255
Shower booth		1	120	120			120
PE office		1	100	100			100
Faculty/locker/shower/toilet		1	100	100			100
Toilet		1	150	150			150
Towel/supply stor.		1	275	275			275
General storage		1	275	275			275
Janitor's closet		1	40	40			40
Circulation area		1	288	288			288
Area of New: Girls' PE Lckr/shwr				3043			3043

CONTINUED

Selected Area = EDSPEC All PE Lckr/Sh PROJECT:

P.E. Locker/Shower (Boy)

1

Boys' locker/shower		1					
Locker room		1	1040	1040			1040
Shower room		1	400	400			400
Drying room		1	255	255			255
Shower booth		1	120	120			120
PE office		1	100	100			100
Faculty/locker/shower/toilet		1	100	100			100
Toilet		1	150	150			150
Towel/supply stor.		1	275	275			275
General storage		1	275	275			275
Janitor's closet		1	40	40			40
Circulation area		1	288	288			288
Area of New: Boys' PE Lckr/shwr				3043			3043

CONTINUED

Max Addit'n Area = 197066	Unit	EdiSpec	Existing	New	Total
COMPONENT: P.E. Locker/Shower (Com)	Pm/nt	Area	Area	Area	Area
Common Areas					
Laundry room	1	150	150		150
Heater/elec. room	1	Area by Designer			
First-Aid room	1	120	120		120
Area of New Common: PE Lckr / Shwr = 270					
Area of Comm PE Lckr / Shwr			270		270
Area of Girls PE Lckr / shwr			3043		3043
Area of Boys PE Lckr / shwr			3043		3043
Total Area of PE Lckr / Shwr = 6356					
Selected Area = EDSPEC BUDGET \$ 6356					
P.E. Locker/Shower Notes and Comments					

PROJECT:

Increase the area for individual shower booths and decrease the area of the gang shower rooms for both boys and girls Locker / Shower Facilities during design if more shower booths are required.

Max Addit'n Area = 197066	Unit	EdiSpec	Existing	New	Total
COMPONENT: ATHLETIC Lk/Shwr (Boy)	Pm/nt	Area	Area	Area	Area
Boys' locker/shower					
Coach's Office	1	110	110		110
Locker / Shower / Toilet	1	90	90		90
Locker Room / Meeting Area	1	990	990		990
Toilet	1	160	160		160
Towelng Room	1	300	300		300
Shower Room	5	100	500		500
Equipment Storage Room	1	250	250		250
Shower Booth Room	4	40	160		160
Janitorial Closet	1	40	40		40
Area of Boys Athletic Lckr / shwr = 2600					
Selected Area = EDSPEC All Athletic Lk PROJECT:					
ATHLETIC Lk/Shwr (Girl)					

Max Addit'n Area = 197066	Unit	EdiSpec	Existing	New	Total
COMPONENT: ATHLETIC Lk/Shwr (Girl)	Pm/nt	Area	Area	Area	Area
Girls' locker/shower					
Coach's Office	1	110	110		110
Locker / Shower / Toilet	1	90	90		90
Locker Room / Meeting Area	1	782	782		782
Toilet	1	160	160		160
Towelng Room	1	240	240		240
Shower Room	4	100	400		400
Equipment Storage Room	1	250	250		250
Shower Booth Room	4	40	160		160
Janitorial Closet	1	40	40		40
Area of Girls Athletic Lckr / shwr = 2232					
CONTINUED					

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	+	New	Total
COMPONENT: [] = Req'd		P'm't	Area	Area	Area	-	Flr Area	Area
ATHLETIC Lk/Shwr (Com)		1						
Common Areas								
Heater Room	1	1950						
Heavy Equipment Room	1	Area by Designer						
Laundry Room	1	500		500				500
Trainer's Room (Note #1)	1	150		150				150
Weight Training Room:	1	1300		1300				1300
Multi-Use Machine Area	1	1800						
Squat Rack Area	1	800		800				800
Power Bench Area	1	50		50				50
Free Standing Rack Area	1	160		160				160
Rehab Machine Area	1	235		235				235
	1	555		555				555
Area Athletic Lckr / Shwr Commons				3750				3750
Area of Boys Athletic Lckr / shwr				2600				2600
Area of Girls Athletic Lckr / shwr				2232				2232
Total Area of Athletic Locker / Shower				8582				8582
Selected Area = EDSPEC BUDGET \$								8582

ATHLETIC Lk/Shwr (Com) Notes and Comments

Note #1:
 Trainer's Room components to be as follows:
 Office 120 sf
 Storage Area 320 sf
 Restroom 75 sf
 Therapy/Work Area 785 sf

Increase the area for individual shower booths and decrease the area of the gang shower rooms for both boys and girls Athletic Locker / Shower Facilities during design. more shower booths are required.

Max Addit'n Area = 197066		77	Unit	Ed Spec	Existing	+	New	Total
COMPONENT: [] = Req'd		P'm't	Area	Area	Area	-	Flr Area	Area
GYMNASIUM		1						
Lobby Area	1	143		143				143
Office	1	91		91				91
PE Equipment Room	1	48		48				48
Janitor's Closet	1	Area by Designer						
Electrical Room	1	324		324				324
Men's Toilet (Public)	1	353		353				353
Women's Toilet (Public)	1	234		234				234
Concession Booth	1	48		48				48
Ticket Booth	1	1068		1068				1068
Lobby	1	13490		13490				13490
Main Floor	1	1800		1800				1800
Wrestling Room	1	200		200				200
General Storage	1	Area by Designer						
Electrical & Heater Room	1	40		40				40
Janitor's Closet (Locker Area)	1							

GYMNASIUM (Continued)

Boy's JV Facilities	1	320		320				320
Locker Room	1	96		96				96
Toilet	1	128		128				128
Varsity / J.V. Drying Room	1	96		96				96
Varsity / J.V. Shower Booth	1	96		96				96
Varsity / J.V. Shower Room	1	96		96				96
Boy's Varsity Facilities	1	320		320				320
Locker Room	1	96		96				96
Toilet	1	128		128				128
Varsity / J.V. Drying Room	1	96		96				96
Varsity / J.V. Shower Booth	1	96		96				96
Varsity / J.V. Shower Room	1	96		96				96
Girl's Varsity Facilities	1	320		320				320
Locker Room	1	96		96				96
Toilet	1	128		128				128
Varsity / J.V. Drying Room	1	96		96				96
Varsity / J.V. Shower Booth	1	96		96				96
Varsity / J.V. Shower Room	1	96		96				96
Girl's Varsity Facilities	1	320		320				320
Locker Room	1	96		96				96
Toilet	1	128		128				128
Total Area of Gymnasium				20143				20143

APPENDIX F

Traffic Assessment: Kapolei High School

**TRAFFIC ASSESSMENT
 KAPOLEI HIGH SCHOOL
 KAPOLEI, OAHU
 PART II
 DAGS JOB NO. 12-16-1646**

Prepared For
 STATE OF HAWAII
 DEPARTMENT OF ACCOUNTING
 AND GENERAL SERVICES

ATA
 AUSTIN, TSUTSUMI & ASSOCIATES, INC.
 CIVIL ENGINEERS - SURVEYORS

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July 1998

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TRAFFIC ASSESSMENT
KAPOLEI HIGH SCHOOL
PART II
KAPOLEI, OAHU

I. INTRODUCTION

The purpose of this report is to assess the traffic impacts of the proposed Kapolei High School and appurtenant facilities on the adjacent streets, and evaluate proposed access driveways to the site. Additionally, a new connector street designated Relocated Road "B" will be added connecting Kalau Avenue to Kapolei Parkway across the parkway driveway to the high school.

The traffic assessment report for Kapolei High School has been prepared in two parts. Part I examined the impact of providing an additional access to the school from Fort Barrette Road. Part I also examined the impacts to area traffic which may result from the addition of other facilities, primarily a football stadium and an auditorium.

Part II examines the impact of revised school parking and access layouts resulting from charrettes conducted by the developer with architects, community leaders and government agencies to finalize the layout for the school.

II. PROJECT DESCRIPTION

The State of Hawaii Department of Accounting and General Services (DAGS) and Department of Education (DOE) are in the process of planning for the Kapolei High School to be constructed in Kapolei, Oahu. This area is presently under development as a major planned community on the west side of Oahu, which will provide residential and employment opportunities away from the existing central and east Honolulu areas. Figure 1 shows the project location.

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The high school is to be located on a 45-acre parcel in the area known as the Villages of Kapolei, and is bounded on the west by Fort Barrette Road, on the north by Kapolei Parkway, on the east by Village 8 of the Villages of Kapolei and on the south by Barbours Point Naval Air Station (BPNAS). The parcel is identified as TMK 9-1-16:74 and por. 75. Construction of various portions of the Kapolei development are on-going. Figure 2 shows the project site.

The district boundaries, or the limits of the area for the student population for the high school, are Nanakai Gardens to the west, Makakilo to the north, the Kapolei boundary to the east and Barbours Point to the south. The BPNAS is in the process of being decommissioned, with turnover to the State by the U.S. Navy scheduled in 1999.

The high school is being planned to serve 1,800 students, with a maximum enrollment of 2,400 students, operating on a four-track schedule with three tracks in attendance at any one time. It is proposed that in addition to the classrooms, the campus will include a 5,000-seat stadium, a gymnasium, and other facilities, including a 1,000-seat auditorium. Figure 3 shows the proposed high school site plan.

Access to the site will be primarily by two driveways - one on Kapolei Parkway approximately 800 feet east of Fort Barrette Road, and the other from Fort Barrette Road; a secondary access will be from Road "A" on the east side of the campus through Village 8. Parking lots in the current layout plan will be located on the Kapolei Parkway and Fort Barrette Road sides of the school grounds; the Road "A" access will connect to a service road to the Kapolei Parkway-side parking lots.

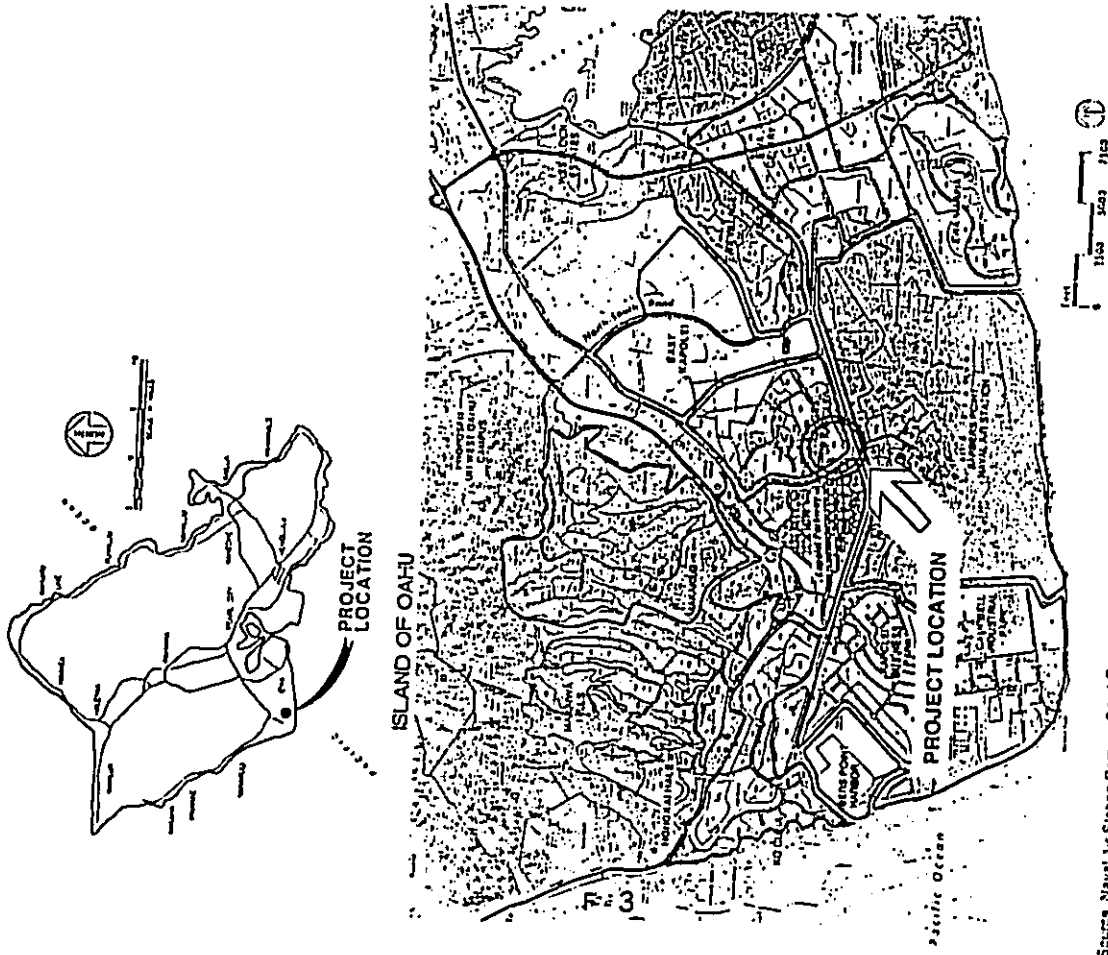
The site is presently undeveloped and overgrown with scrub growth. It is anticipated that DAGS and DOE will begin construction in early 1999 with completion of the school in Year 2000.

iii.

METHODOLOGY

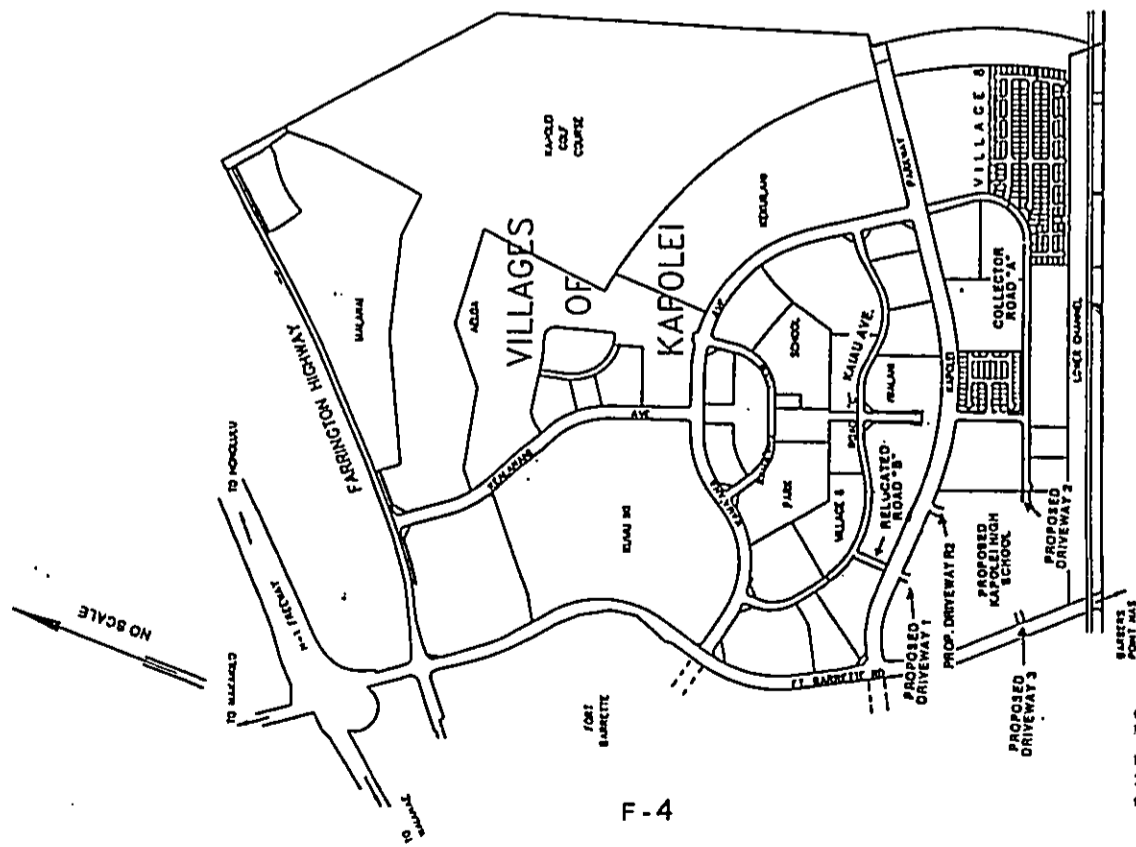
This report is based upon available data from the following sources and no traffic counts were taken:

- Traffic Impact Study, Villages of Kapolei, R.M. Towill Corp. July, 20, 1994.
- Villages of Kapolei Update of Traffic Impacts, State of Hawaii Housing and Finance Development Corp. and R.M. Towill Corp., April 1996.



Sources: Naval Air Station, Barbours Point Community
Development Office, Barber, Parker & Fox, Parker

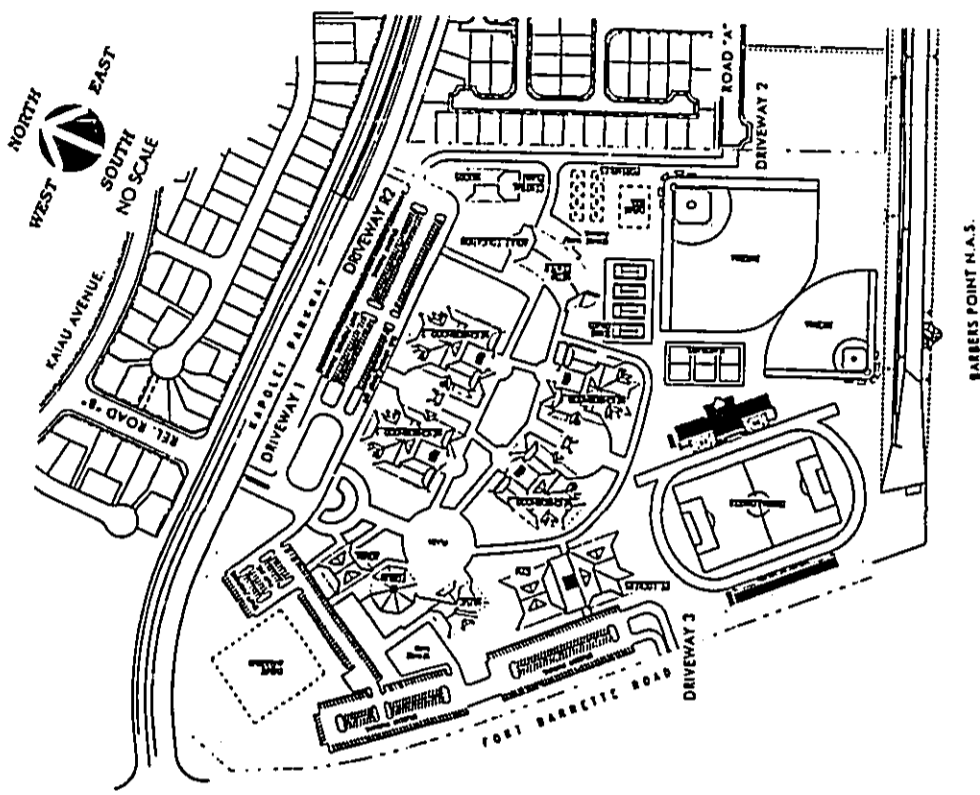
ATA AUSTIN, ISHITSUMI & ASSOC. INC. ENGINEERS - SURVEYORS	TRAFFIC STUDY KAPOLEI HIGH SCHOOL	FIGURE
	PROJECT LOCATION MAP	1



F-4

Source: R. M. Towne Corp.

	AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC STUDY KAPOLEI HIGH SCHOOL PROJECT SITE MAP	FIGURE 2



SABERS POINT N.A.S.

Source: Mitsunaga & Associates, Inc.

	AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC STUDY KAPOLEI HIGH SCHOOL SITE PLAN	FIGURE 3

- Traffic Survey Data Island of Oahu 1996, State Highways Division.
- Additional information was obtained from the following sources:
- Naval Air Station Barbers Point Community Redevelopment Plan Summary Report, Barbers Point Redevelopment Commission, March 1997.
 - Kapolei Area Long Range Master Plan, The Estate of James Campbell.

IV. ROADWAYS

Fort Barrette Road is a 1.38-mile long, two-lane, two-way major collector road, Route 901, under the jurisdiction of the State Highways Division (SHD) and is the main access to Barbers Point Naval Air Station. It begins at the main gate to BPNAS and ends at its intersection with Farrington Highway, where the roadway continues as Makakilo Drive. With the development of the Kapolei area, Fort Barrette Road serves as a major collector/distributor road. Under the Campbell Estate master plan, Fort Barrette Road will be widened to a four-lane divided arterial with a right-of-way of 100 feet. The posted speed limit is 45 miles per hour (mph) between Farrington Highway to Kamaaha Avenue and 45 mph from Kamaaha Avenue to the BPNAS gate. Kapolei Parkway will be a four- to six-lane City divided arterial joining the Ewa communities with the Kapolei areas. Portions of the parkway have been constructed, primarily through the Villages of Kapolei, but not yet opened to public traffic. The posted speed limit will be 35 mph. Presently, the Parkway terminates at Fort Barrette Road at a T-intersection; however, future plans include its extension west through the Campbell Estates' City of Kapolei development to Kg Olina.

Road "A" is a local 2-lane two-way collector road through Village 8. It begins at the intersection of Kapolei Parkway and Kamaaha Avenue, extends south, then turns westerly terminating in a cut-de-sac and driveway into the Kapolei H.S. grounds. This roadway has not been constructed.

Relocated Road "B" is a local four-lane, two-way connector road between Kalau Avenue and Kapolei Parkway. It has been relocated from its former location about 2,300 feet east of Fort Barrette Road to a new location about 800 feet east of Fort Barrette Road and across from the proposed main driveway to Kapolei High School on Kapolei Parkway. It has not been constructed at this time. HFDC will construct Relocated Road "B".

V. TRAFFIC ANALYSIS

A. Existing Traffic

All roadways immediately surrounding the project site are non-existent or not open to traffic, except Fort Barrette Road. State DOT traffic counts in 1996 indicated that approximately 328 vehicles are northbound and 667 vehicles are southbound during the AM peak hour of traffic and 645 vehicles are northbound and 168 vehicles are southbound during the PM peak hour of traffic. This traffic distribution reflects BPNAS as an employment center in this region.

B. Future Traffic Conditions

1. Base Traffic Volumes

The base traffic volumes reflect the anticipated ultimate traffic volumes on the existing and planned roadways without the project. Figure 4 shows the projected base traffic without the high school at ultimate build-out. The base traffic volumes were based on data from the report Villages of Kapolei Update of Traffic Impacts, April 1996, State of Hawaii, Housing Finance and Development Corporation and R.M. Towill Corporation, with adjustments due to the inclusion of Relocated Road "B".

2. Trip Generation

Trip generation for the school is based on factors in the publication Trip Generation, 5th Edition, 1991, Institute of Transportation Engineers.

Kapolei High School is being planned to accommodate 1,800 students, with a maximum enrollment of 2,400 students. The school will operate on a multi-track schedule, that is, it will have four tracks of students, with 3 in attendance at any one time while the fourth is on vacation. Therefore, the maximum student attendance at any one time will be 1,800 students.

Trips generated by the high school are estimated to be as follows:

TABLE 1
Trip Generation, High School

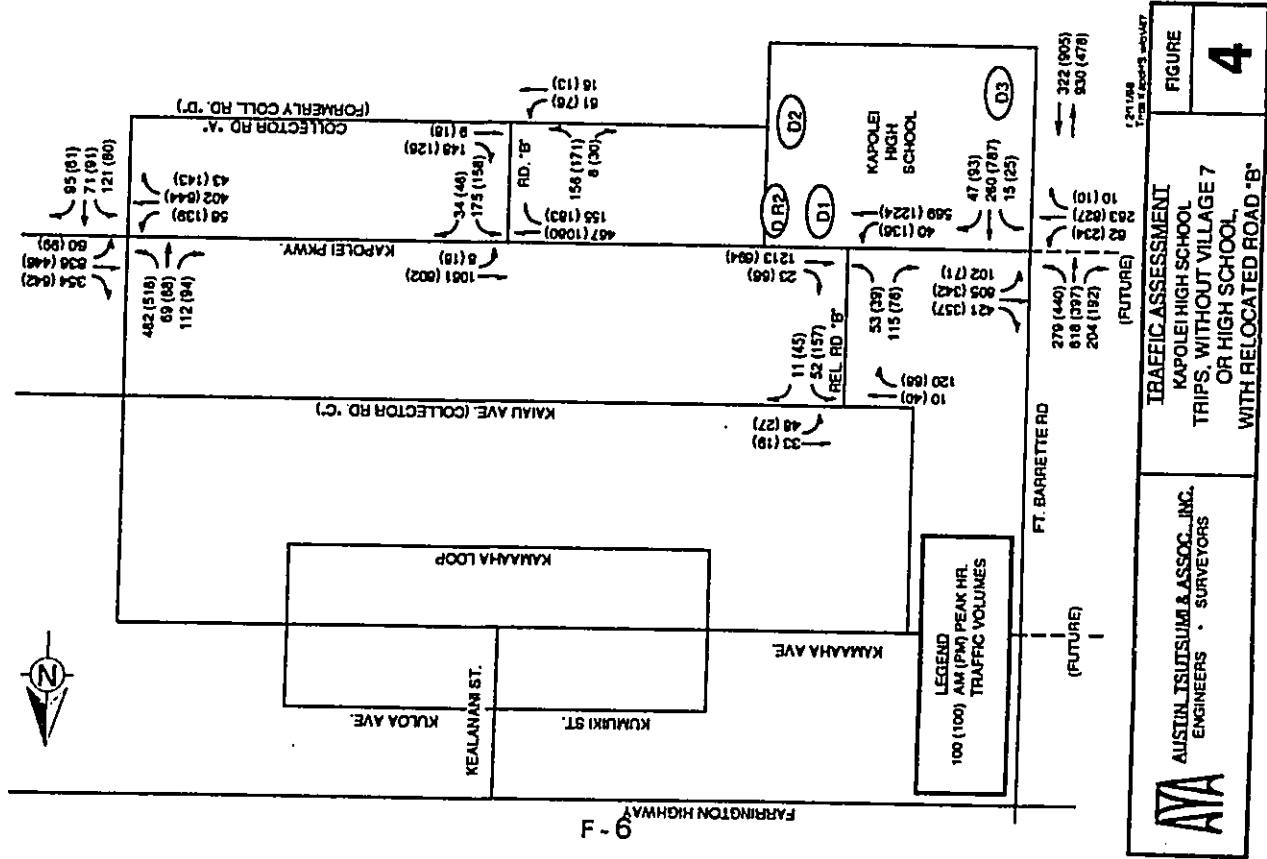
Students: 1,800	Vehicles/Hour Per Student		Vehicle Trips Generated	
	ENTER	EXIT	ENTER	EXIT
AM Peak Hour	0.28	0.13	502	236
PM Peak Hour	0.02	0.06	42	102

3. School Accesses

Accesses to the school's parking areas are proposed from three driveways - from Kapolei Parkway, Road "A" and Fort Barrette Road. Parking lots for student and faculty parking will be situated along the Fort Barrette Road and the Kapolei Parkway sides of the campus. Approximately 590 parking spaces will be provided. The Kapolei Parkway and Fort Barrette Road accesses will be the primary accesses to the school grounds and parking lots; the Road "A" access will be a secondary access.

The parking areas will also be used for special event parking, such as football games, other athletic events and productions at the future auditorium. These events will primarily occur during non-school hours and are not examined in this report.

The Kapolei Parkway access (Driveway 1) is proposed as a full-service main entrance, located approximately 800 feet east of the Fort Barrette Road/Kapolei Parkway intersection and across from Relocated Road "B." An additional right turn-only exit to Kapolei Parkway (Driveway R2) is proposed on the eastern side of the school frontage. These parking lots will be primarily for staff and visitor parking, with some student parking allowed in designated areas.



ATA AUSTIN TRAFFIC ASSOCIATES, INC. ENGINEERS • SURVEYORS

The Road "A" access (Driveway 2) is proposed at the end of Road "A". This access is proposed to connect to a connector road to the parking lots on the Kapolei Parkway side of the campus. Because this driveway will not have any parking area immediately adjacent to the driveway, it is expected that it will have very limited use.

The Fort Barrette Road access (Driveway 3) is proposed to be a full-service access to parking facilities along the west (Fort Barrette Road) side of the campus. These parking lots will be primarily for student parking and special events parking.

The campus parking lots are planned to be connected with connector roads.

4. Trip Distribution

Traffic generated by the school was calculated and distributed to the three proposed general accesses, as shown in Figure 5. It is anticipated that Driveway 2 will see little traffic because it serves only as an access road to the Kapolei Parkway parking lots from Village 8 roadways.

Figure 6 shows the traffic distribution with base traffic plus project traffic at the access driveways to the school campus. The AM peak hour of traffic will be the period which will be the most affected by the school; school-generated traffic will not significantly impact the PM commuter peak hour of traffic. Trip assignments for project-generated traffic to the proposed access driveways are shown in Table 2.

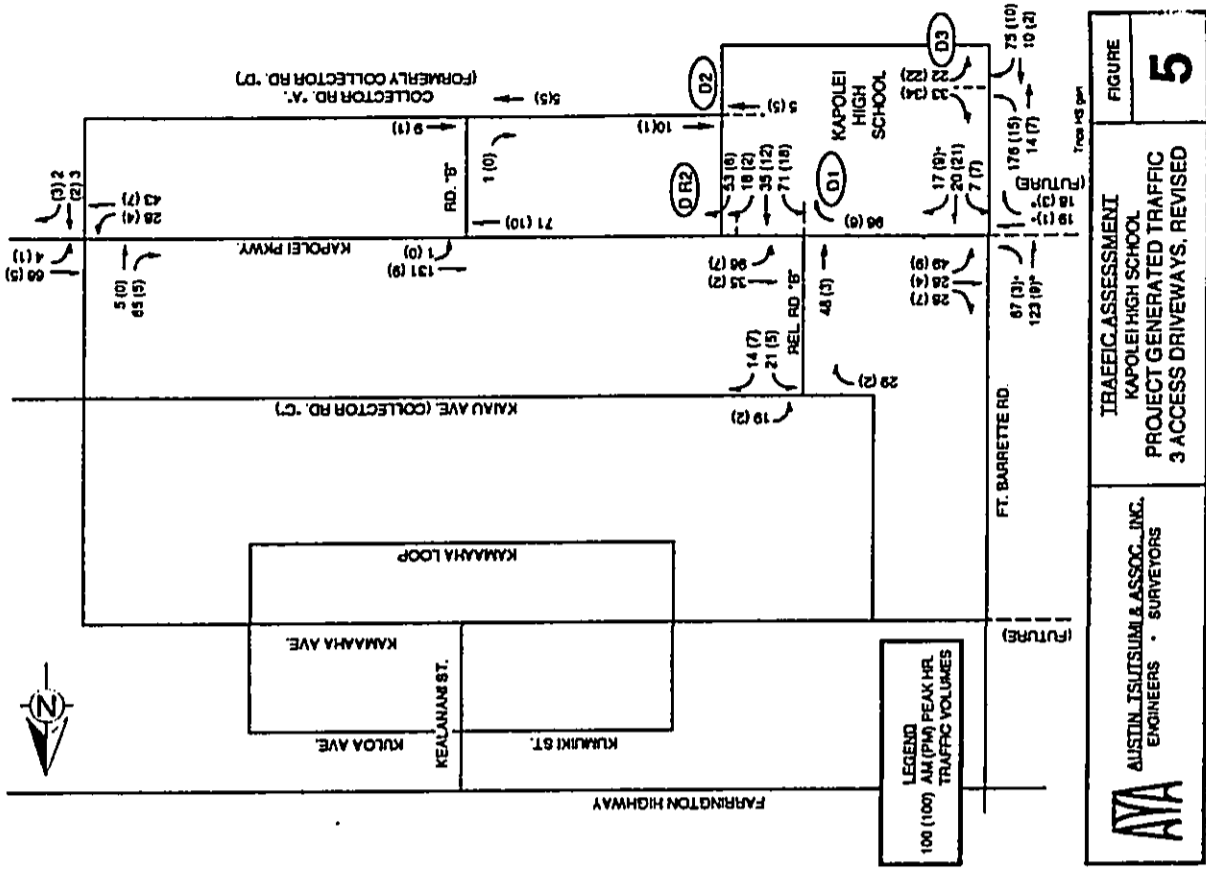


Table 2
Access Traffic Assignment

Access Location	AM ENTER	AM EXIT	PM ENTER	PM EXIT
1. Kapolei Parkway	241	177	17	41
2. Road "A"	10	5	1	5
3. Fort Barrette Road	251	54	24	56

The Villages of Kapolei, the City of Kapolei and other portions of the Kapolei development are in various stages of development. The previously mentioned TIAR for the Villages of Kapolei prepared in 1994 and its subsequent update in April 1996 developed traffic data in the area of the high school and these were utilized as the basis for traffic projections and distribution for this report. Development phases are uncertain at this time and therefore are not considered in this report.

5. Level of Service

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow. The 1994 Highway Capacity Manual - Special Report 209 procedures for calculating volume-to-capacity (v/c) ratios, delays and corresponding levels of service were utilized in this study. LOS definitions for signalized intersections are provided in Appendix A.

This study is based on ultimate traffic volumes, therefore it was assumed that intersections which would warrant traffic signals at ultimate build-out would have traffic signals installed.

The traffic projections indicate that the following intersections would meet traffic signal warrants at ultimate build-out and their LOS levels will be as indicated for the AM and PM peak hours of traffic:

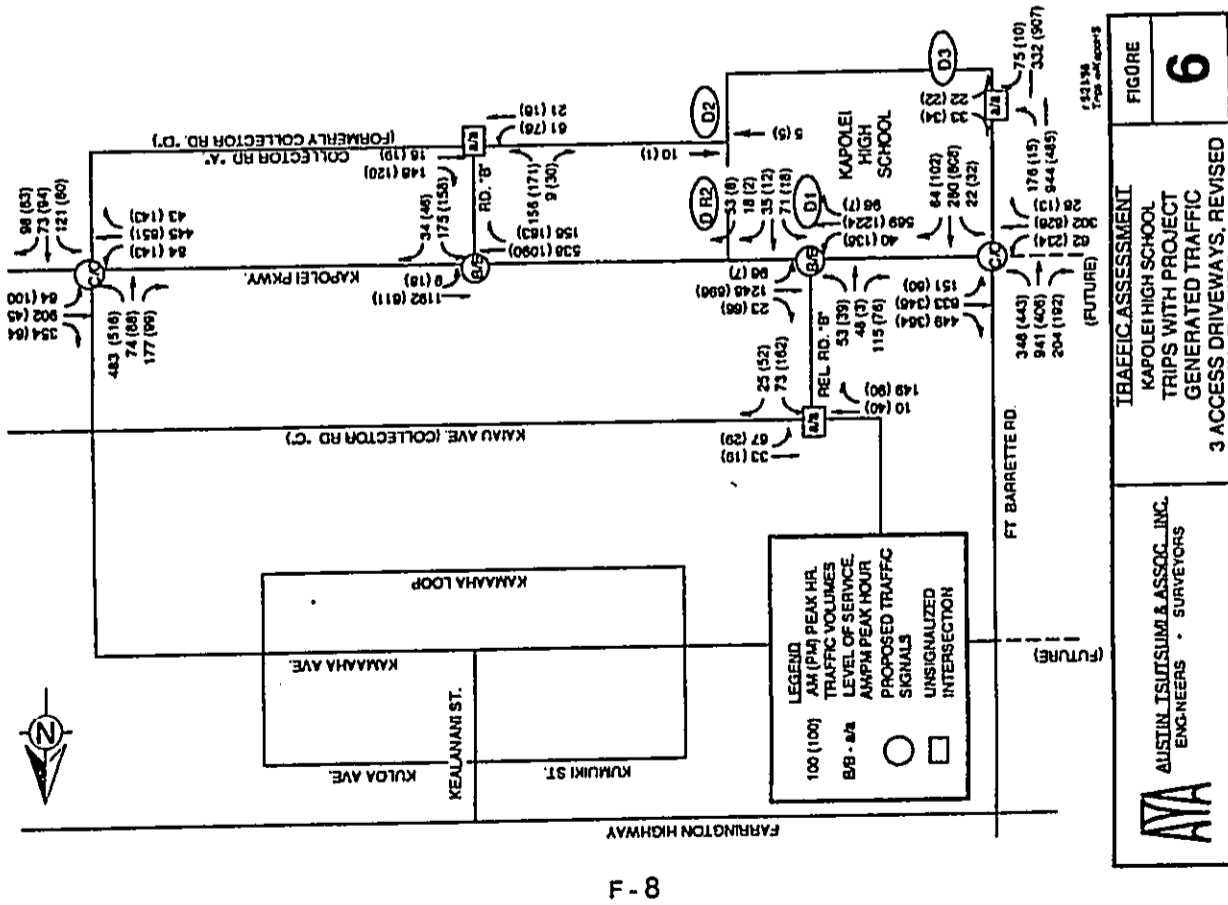


Table 3
 Signalized Intersections
 Level of Service (LOS)

Intersection	AM Peak Hour of Traffic	PM Peak Hour of Traffic
Fort Barrette Road at Kapolei Parkway	C	C
Kapolei Parkway at Relocated Road "B"/Driveway 1	B	B
Kapolei Parkway at Road "B"	B	B
Kapolei Parkway at Kamaaha Avenue	C	C

Level of service analysis was also performed for the unsignalized intersections immediately adjacent to the project, including the Fort Barrette Road access to the school, and all were found to operate at LOS A in the AM and PM peak hours of traffic. The Fort Barrette Road access to the school was assumed to have a left-turn storage lane for left turns into the school.

VI. DISCUSSION

This report primarily addresses the traffic generated by the school; traffic generation resulting from special events at the football/soccer stadium were examined in Part I. This report also does not address phased construction in the development of the Kapolei region nor its effect on the high school.

The preliminary locations for parking lots on the campus provide easy access from the school's main entrances at Kapolei Parkway and Fort Barrette Road. The accesses on Kapolei Parkway and, to a lesser extent Road "A," will serve staff, visitor and student parking areas. The Fort Barrette Road access will primarily serve the student parking areas adjacent to Fort Barrette Road.

The Kapolei Parkway entrance will be the main public entrance to the campus. It is being designed to accommodate visitors and student drop-offs by private vehicles

and buses, as well as access to the parking areas. The main entrance/exit driveway will be located across from relocated Road "B" and an exit-only driveway to Kapolei Parkway eastbound will be located on the eastern corner of the Kapolei Parkway parking area. Intersection improvements will be required, such as left-turn storage lanes and a traffic signal system, when it is warranted. Because of the anticipated use of this access as the primary location for student drop-offs, the AM peak hour exiting traffic was adjusted to reflect this. Figure 7 shows the proposed improvements at this access. The Fort Barrette Road access is needed to properly distribute project traffic and not overload any accesses.

It is anticipated that most students will utilize the Fort Barrette Road driveway to get to the designated student parking areas. It is further assumed, for this report, that the Fort Barrette Road access will be allowed by the State Highways Division. This access would require construction of intersection improvements, such as a left-turn deceleration and storage lane for southbound traffic and a right-turn deceleration lane for northbound traffic on Fort Barrette Road, in order to mitigate the effects of school and special events traffic on Fort Barrette Road. Figure 8 shows the proposed improvements at this access.

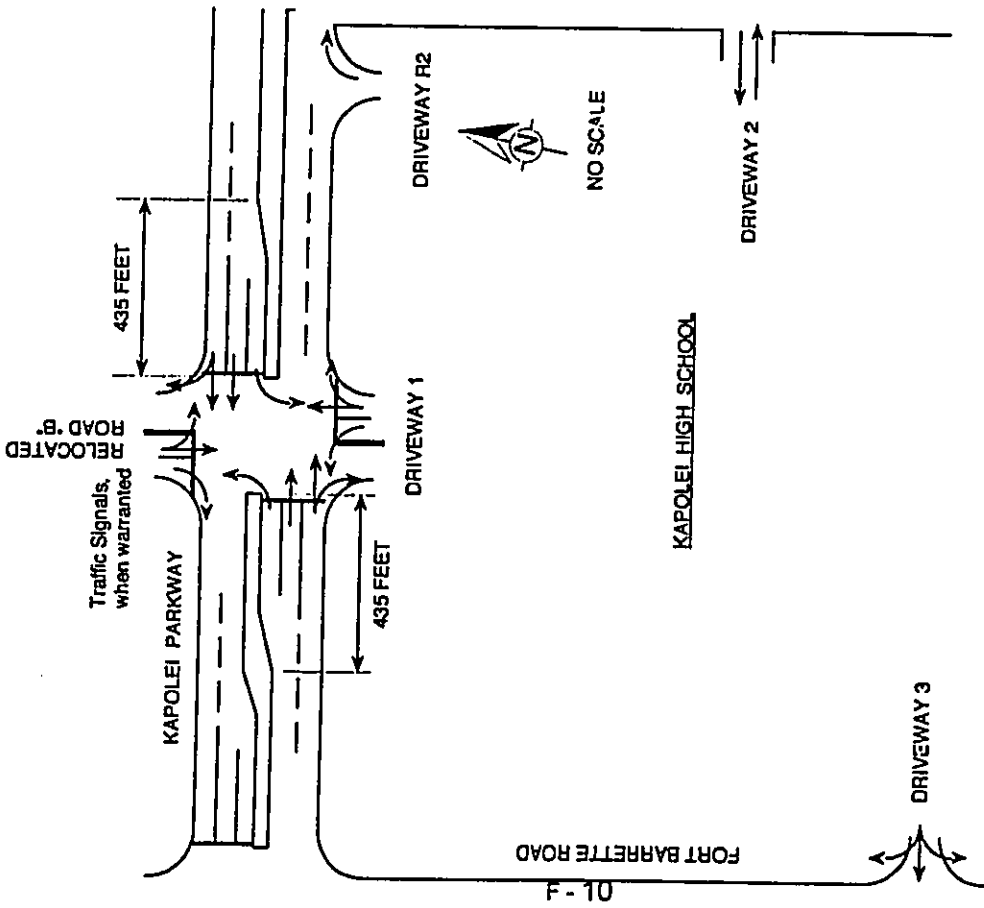
Because Road "A" is a residential road, it is undesirable to route school traffic through this roadway. This access should remain a secondary access to the school campus.

The redevelopment of BPNAS will change traffic patterns in the area, particularly when additional roadways are extended from the City of Kapolei and other adjacent areas to BPNAS. These additional public accesses are being studied by the Barbers Point Redevelopment Commission and are described in the report Naval Air Station Barbers Point Community Redevelopment Plan Summary Report, March 1997.

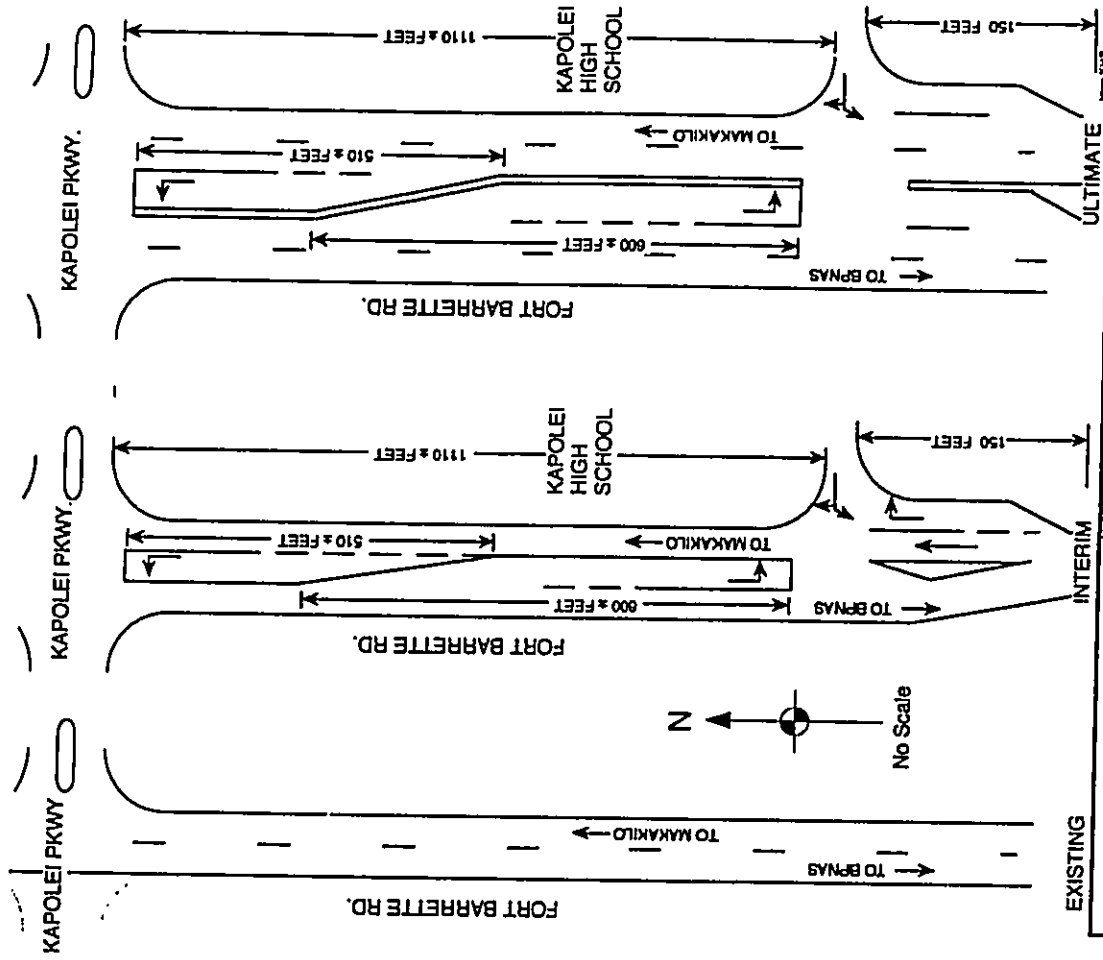
VII. RECOMMENDATIONS

Based on the foregoing, the following measures are recommended to mitigate the impact of school traffic.

1. Widen and Improve Fort Barrette Road to provide adequate capacity for a left-turn deceleration and storage lane for southbound traffic using the Fort Barrette Road access. This left-turn lane should be coordinated with



 AUSTIN, ISHITSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC STUDY KAPOLEI HIGH SCHOOL SCHEMATIC LAYOUT RECOMMENDED IMPROVEMENTS KAPOLEI PARKWAY	FIGURE 7
	-16-	



 AUSTIN, ISHITSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC STUDY KAPOLEI HIGH SCHOOL SCHEMATIC LAYOUT RECOMMENDED IMPROVEMENTS FORT BARRETTE RD.	FIGURE 8
	-17-	

the requirements for northbound Fort Barrette Road traffic turning left into the future Kapolei Parkway extension to the City of Kapolei. The length of the left-turn storage lane for the school should be approximately 600 feet long, to accommodate the requirements of an average crowd attending the football games at the stadium.

2. The present speed limit of 45 mph on Fort Barrette Road should be lowered to 35 mph. Traffic code changes must be approved and promulgated by the State Department of Transportation.
3. If traffic conditions indicate they are warranted, install SCHOOL signs and flashers, with appropriate School Zone speed limit signs (25 mph) on Fort Barrette Road and Kapolei Parkway.
4. On campus, interior road traffic controls should give preference to incoming vehicles in order to reduce the possibility of vehicles overflowing and backing up onto the public roadways.
5. The entrance driveways should be at least 50 feet long to provide reservoir storage space for entering vehicles, particularly at the Kapolei Parkway entrance.
6. Provide a 150-foot right-turn deceleration lane, including a 100-foot taper, for northbound motorists on Fort Barrette Road turning right into Driveway 3.
7. Provide left-turn deceleration and storage lanes in the median at the intersection of Kapolei Parkway and Relocated Road "B". The eastbound left-turn storage and deceleration lane should be 435 feet long including a 180-foot taper. The westbound left-turn storage lane should be the same.
8. If feasible, locate local bus stops on Kapolei Parkway on the far side of the intersections. Bus pullouts are not necessary.
9. When traffic studies indicate that warrants are met, install traffic signals at the intersection of Kapolei Parkway and the entrance to Kapolei High

School (Driveway 1). Initial construction of the intersection can include installation of conduits across the roadways for the future traffic signals.

LEVEL OF SERVICE OF SIGNALIZED INTERSECTIONS

Level of service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. The criteria are given in Table A-1.

Table A-1. Level-of-Service Criteria for Signalized Intersections

Level of Service	Stopped Delay for Vehicle (SEC)
A	≤ 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	> 60.0

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

Level-of-service A describes operations with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level-of-service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level-of-service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level-of-service E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent occurrences.

Level-of-service F describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

SUMMARY OF TRIP GENERATION RATES

Land Use or Bldg. Type: Kapolei High School
 Location: Kapolei, Oahu

ITE CODE: 530

Job No 97-88

11/20/97: 3 accesses w/ pking
 r.12/2/97: New parking plan
 r.2/11/98: Rev. Base
 Traffic

SCHOOL TRIP DISTRIBUTION

Students	1,800	AM PK Hr.	502	Exit	238
		PM PK Hr.	42	Exit	102

Independent Variable:	Students	VOLUME (EQUATION)	VOLUME (RATE)	TRIP RATE	UNITS: 1800
AVERAGE WEEKDAY VEHICLE TRIP ENDS					
PEAK		1.38	1997		2,484
HOUR OF ADJACENT STREET TRAFFIC					
A.M.	ENTER	68%			502
between 7 and 9 P.M.	EXIT	32%			238
P.M.	RATE	0.41			738
between 4 and 8	ENTER	29%			42
P.M.	EXIT	71%			102
P.M.	RATE	0.08			144
PEAK HOUR OF GENERATOR					
A.M.	ENTER	74%	422		400
P.M.	EXIT	26%	148		140
P.M.	RATE	0.30	570		540
P.M.	ENTER	34%	104		141
P.M.	EXIT	66%	202		273
P.M.	RATE	0.23	306		414
SATURDAY VEHICLE TRIP ENDS:					
PEAK		0.77			1,368
HOUR OF GENERATOR					
ENTER		74%			200
EXIT		26%			70
RATE		0.15			270
SUNDAY VEHICLE TRIP ENDS:					
PEAK		0.23			414
HOUR OF GENERATOR					
ENTER		33%			12
EXIT		67%			24
RATE		0.02			36

Reference: ITE "TRIP GENERATION", 5TH ED.
 Comments: Per telephone conversation with DOE, 10/21/97, planned student body will be 1,800 to 2,400, 4 tracks (600 per track) with 3 tracks attending at any one time. Schools in ITE trip-gen study indicated 57% of students used bus/transit.

PROJ. GEN. TRIP ASSIGNMENT - THREE ACCESSES

Intersection 1	RT1	RT2	TH	LT	AM		PM		Enter	Exit	PM	Enter	Exit
					Enter	Exit	Enter	Exit					
KAPOLEI PKWY Driveaway 1					48%	241	75%	177	40%	17	40%	41	41
					40%	86	10%	18	40%	7	5%	2	2
					0%	0	30%	53	0%	0	20%	8	8
					20%	48	20%	35	20%	3	30%	12	12
					40%	96	40%	71	40%	7	45%	18	18
TOTAL						241		177		17		41	41
Intersection 2													
					2%	10	2%	5	2%	1	5%	5	5
					0%	0	0%	0	0%	0	0%	0	0
					100%	10	100%	5	100%	1	100%	5	5
					0%	0	0%	0	0%	0	0%	0	0
TOTAL						10		5		1		5	5
Intersection 3													
					50%	251	23%	54	58%	24	55%	58	58
					30%	75	60%	33	40%	10	60%	34	34
					0%	0	0%	0	0%	0	0%	0	0
					70%	176	40%	22	60%	15	40%	22	22
TOTAL						251		54		24		58	58
TOTAL						502		238		42		102	102

Kapolei Pkwy/Driveaway 1 AM Exit is estimated high % due to student drop-offs.

PROJ. GEN. TRIPS DISTRIBUTED TO INTERSECTIONS - 3 ACCESSES

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Fl. Barrette/Kapolei FORT BARRETTE KAPOLEI PKWY.	RT	0%	96	71	0%	7	18	13
	TH	25%	24	18	20%	1	6	6
	LT	75%	72	0	80%	5	0	0

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Kalaui/Road "B" KALAU AVE. REL. ROAD "B"	RT	75%	48	35	75%	3	12	3
	TH	25%	36	0	25%	3	3	3
	LT	25%	12	0	25%	1	9	9

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Kapolei/Road "B" KAPOLEI PKWY ROAD "B" DRY 1	RT	0%	96	18	0%	7	2	2
	TH	100%	96	18	100%	7	100%	2
	LT	0%	0	0	0%	0	0	0

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Kapolei/Kamaaha KAPOLEI PKWY. KAMAHA AVE.	RT	50%	48	7	50%	3	60%	1
	TH	50%	48	11	50%	3	40%	1
	LT	0%	0	0	0%	0	0%	0

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Road "A"/Road "B" ROAD "A" DRY 2 ROAD "B"	RT	10%	10	5	10%	1	5	5
	TH	90%	9	0	90%	0	0	0
	LT	0%	0	5	0	0%	1	5

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Road "A"/Kapolei KAPOLEI PKWY ROAD "A"	RT	0%	9	4	0%	1	5	3
	TH	50%	5	2	50%	0	40%	2
	LT	50%	5	0	50%	0	0%	0

Intersection	AM Enter		AM Exit		PM Enter		PM Exit	
	AM	Enter	AM	Exit	PM	Enter	PM	Exit
Fort Barrette/Dry 3 FORT BARRETTE DRIVEWAY 3	RT	40%	50	82	30%	20	60	60
	TH	0%	0	49	0%	6	30	30
	LT	60%	76	33	70%	14	50%	90

BASE & PROJ. GEN. TRIP DISTRIBUTION - 3 ACCESSES

Fl. Barrette Rd @ Kapolei Pkwy	AM PEAK HOUR			PM PEAK HOUR			
	Base Traffic	Project Traffic	Total	Base Traffic	Project Traffic	Total	
NB Fl. Barrette	RT	47	17	64	93	9	102
	TH	260	20	280	787	21	808
	LT	15	7	22	25	7	32
SB Fl. Barrette	RT	204	204	408	192	192	384
	TH	818	123	941	397	9	406
	LT	279	67	346	440	3	443
EB Kapolei Pkwy	RT	10	18	28	10	3	13
	TH	283	19	302	827	1	828
	LT	62	62	124	234	234	468
WB Kapolei Pkwy	RT	421	28	449	357	7	364
	TH	805	28	833	342	4	346
	LT	102	49	151	71	9	80

Kapolei Pkwy. @ Rel. Rd "B" DRY 1	AM PEAK HOUR			PM PEAK HOUR			
	Base Traffic	Project Traffic	Total	Base Traffic	Project Traffic	Total	
NB Driveway 1	RT 2	53	53	8	8	16	
	RT 1	18	18	2	2	4	
	TH	35	35	12	12	24	
SB Rel. Road "B"	RT	115	71	186	76	18	194
	TH	0	48	48	0	3	51
	LT	53	53	106	39	3	115
EB Kapolei Pkwy	RT	0	96	96	0	7	103
	TH	569	569	1138	1224	1224	2448
	LT	40	40	80	136	136	272
WB Kapolei Pkwy	RT	23	23	46	66	66	132
	TH	1213	35	1248	694	2	696
	LT	0	96	96	0	7	7

Kapolei Pkwy. @ Rel. Road "B"	AM PEAK HOUR			PM PEAK HOUR			
	Base Traffic	Project Traffic	Total	Base Traffic	Project Traffic	Total	
EB Kapolei Pkwy	RT	155	71	226	183	10	193
	TH	487	487	974	1080	10	1090
	LT	0	0	0	0	0	0
WB Kapolei Pkwy.	RT	0	131	131	0	0	131
	TH	1061	8	1069	602	9	611
	LT	8	1	9	18	0	18
NB Road "B"	RT	34	34	68	46	46	94
	TH	175	175	350	158	158	316
	LT	0	0	0	0	0	0

Kapolei High School
 3 Access Driveways - Revised Distribution 2/13/98
 AM PEAK HOUR

02/13/98
 12:03:39

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values
 Intersection Parameters for Int # 0 - Kapolei Pkwy & Ft Barrette Rd

VEHICLE AREA NONCBD
 POSITION 3, 0
 LEVEL OF SERVICE C S 0
 NODE LOCATION 0 0

Approach Parameters

APPLABELS	SB	WB	NB
GRADES	0	0	0
FEEDLEVELS	LOW	LOW	LOW
PARKINGSIDES	NONE	NONE	NONE
PARKVOLUMES	0	0	0
BUSVOLUMES	0	0	0
RIGHTTURNREDS	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	204	941	346	449	833	151	64	280	22
WIDTHS	0	24.0	24.0	12.0	24.0	12.0	24.0	12.0	12.0
LANES	0	2	2	1	2	1	1	2	1
UTILIZATIONS	.95	.95	.95	.95	.95	.95	.95	.95	.95
TRUCKPERCENTS	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
PEAKHOURFACTORS	.95	.95	.95	.95	.95	.95	.95	.95	.95
ARRIVALTYPES	3	3	3	3	3	3	3	3	3
ACTIONATIONS	NO	YES	YES	NO	YES	YES	NO	YES	YES
REQCLEARANCES	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
MINIMUMS	5.0	19.0	5.0	5.0	22.0	5.0	5.0	25.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
INSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	3610	3539	1539	3725	1770	1539	3725	1770

Phasing Parameters

SEQUENCES	S4	NO	NO	NO	NO	NO	NO	NO	NO
PERMISSIVES	NO	YES	YES	YES	YES	YES	YES	YES	YES
OVERLAPS	90	180	10	10	10	10	10	10	10
CYCLES	5.00	5.00	27.00	9.00	26.00	5.00	26.00	5.00	26.00
YELLOWTIMES	4.00	3	0	4.00	6	4.00	6	4.00	6
CRITICALS	3	0	2	3	6	3	6	3	6
EXCESS	0	0	0	0	0	0	0	0	0

Kapolei Pkwy. @ Kamaaha Av NB ROAD 'A'	Base Traffic	Project Traffic	Total
RT	95	3	98
TH	71	2	73
LT	121	0	121
RT	112	65	177
TH	69	5	74
LT	483	0	483
RT	43	0	43
TH	402	43	445
LT	58	28	84
RT	354	0	354
TH	638	66	902
LT	60	4	64

Kapolei Pkwy. @ Rel. Rd. 'B'	Base Traffic	Project Traffic	Total
RT	120	29	149
TH	10	0	10
LT	0	0	0
RT	0	0	0
TH	33	0	33
LT	49	19	67
RT	11	14	25
LT	52	21	73

Road 'A' @ Rd. 'B'	Base Traffic	Project Traffic	Total
RT	0	0	0
TH	16	5	21
LT	61	0	61
RT	148	0	148
TH	9	9	18
LT	0	0	0
RT	8	1	9
LT	156	0	156

Ft Barrette Rd @ Driveway 3 NB Ft Barrette	Base Traffic	Project Traffic	Total
RT	322	10	332
TH	0	0	0
LT	0	0	0
RT	930	14	944
TH	178	0	178
LT	33	0	33
RT	22	0	22
LT	0	0	0

SIGNAL94/TEAPAC(V1 L1.4) - Capacity Analysis Summary

SIGNAL94/TEAPAC(V1 L1.4) - Summary of Parameter Values

Intersection Averages for Int # 0 - Kapolei Pkwy & Ft Barrette Rd
 Degree of Saturation (v/c) .66 Vehicle Delay 19.8 Level of Service C+

Intersection Parameters for Int # 0 - Kapolei Pkwy & Ft Barrette Rd

Sg	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
North	<+>	<+>	<+>	<+>	<+>
South	<+>	<+>	<+>	<+>	<+>
G/C = .056 G/C = .056 G/C = .300 G/C = 1.00 G/C = .289 G = 5.0 G = 5.0 G = 27.0 G = 9.0 G = 26.0 Y+R = 4.0 Y+R = 5.0 Y+R = 5.0 Y+R = 4.0 Y+R = 5.0 OFF = .01 OFF = 10.0 OFF = 15.6 OFF = 51.1 OFF = 65.6					

Q = 90 sec G = 72.0 sec = 80.0% Y = 18.0 sec = 20.0% Ped = .0 sec = .0%

RT TH LT RT TH LT RT TH LT RT TH LT RT TH LT

Group	Width/Lanes	Reqd	g/c	Used	Service Rate	Adj	Volume	v/c	Delay	HCM	L	90% Max
TH+RT	24/2	.350	.378	1259	1364	1146	.840	19.9	19.9	19.9	451	451 ft
LT	24/2	.152	.122	232	433	346	.799	31.8	31.8	31.8	192	192 ft

SB Approach

RT	TH	LT
12/1	12/1	12/1
.107	.131	.079
.467	.322	.067
650	1071	1
718	1200	104
.64	.233	.22
.089	.186	.186
8.6	25.7	25.7
B+	D+	D+
43	120	26

EB Approach

RT	TH	LT
12/1	12/1	12/1
.349	.265	.151
.467	.311	.111
650	1025	84
718	1159	186
.449	.833	151
.625	.719	.766
12.9	19.3	36.1
B	C+	D
303	363	170

WB Approach

RT	TH	LT
24/2	24/2	12/1
.144	.099	.111
.311	.109	.084
1009	84	186
1142	330	.289
.62	.315	24.1
15.2	24.1	70
C+	C	70

Approach Parameters

RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
192	406	443	364	346	80	102	808	32	13	828	234
.0	24.0	24.0	12.0	24.0	12.0	12.0	24.0	12.0	.0	24.0	12.0
.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
3	3	3	3	3	3	3	3	3	3	3	3
NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
5.0	19.0	5.0	5.0	22.0	5.0	5.0	25.0	5.0	5.0	25.0	5.0
1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
0	3518	3539	1539	3725	1770	1539	3725	1770	0	3715	1770

Movement Parameters

RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
192	406	443	364	346	80	102	808	32	13	828	234
.0	24.0	24.0	12.0	24.0	12.0	12.0	24.0	12.0	.0	24.0	12.0
.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
3	3	3	3	3	3	3	3	3	3	3	3
NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
5.0	19.0	5.0	5.0	22.0	5.0	5.0	25.0	5.0	5.0	25.0	5.0
1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
0	3518	3539	1539	3725	1770	1539	3725	1770	0	3715	1770

Sequences

SEQUENCES	NO	NO	NO	NO	NO	NO	NO
PERMISSIVES	56	NO	NO	NO	NO	NO	NONE
OVERLAPS	YES	YES	YES	YES	YES	YES	OFFSET
CYCLES	90	180	10	10	10	10	OFFSET
GREEN TIMES	5.00	7.00	25.00	5.00	8.00	5.00	PED TIME
YELLOW TIMES	4.00	.00	5.00	4.00	.00	5.00	PED TIME
CRITICALS	9	3	8	6	12	5	LEADLAGS
EXCESS	0	0	0	0	0	0	OFFSET

02/13/98 13:14:56

Kapolei High School
 3 Access Driveways - Revised Distribution 2/13/98
 PM PEAK HOUR

02/13/98
 13:19:15

SIGNAL94/TEAPAC[V1 L1.4] - Capacity Analysis Summary
 Intersection Averages for Int # 0 - Kapolei Parkway & Rel. Rd B
 Degree of Saturation (v/c) .57 Vehicle Delay 13.3 Level of Service B

Sq	Phase 1	Phase 2	Phase 3	Phase 4
15	+	+	+	+
16	+	+	+	+
17	+	+	+	+
18	+	+	+	+
19	+	+	+	+
20	+	+	+	+
21	+	+	+	+
22	+	+	+	+
23	+	+	+	+
24	+	+	+	+
25	+	+	+	+
26	+	+	+	+
27	+	+	+	+
28	+	+	+	+
29	+	+	+	+
30	+	+	+	+
31	+	+	+	+
32	+	+	+	+
33	+	+	+	+
34	+	+	+	+
35	+	+	+	+
36	+	+	+	+
37	+	+	+	+
38	+	+	+	+
39	+	+	+	+
40	+	+	+	+
41	+	+	+	+
42	+	+	+	+
43	+	+	+	+
44	+	+	+	+
45	+	+	+	+
46	+	+	+	+
47	+	+	+	+
48	+	+	+	+
49	+	+	+	+
50	+	+	+	+
51	+	+	+	+
52	+	+	+	+
53	+	+	+	+
54	+	+	+	+
55	+	+	+	+
56	+	+	+	+
57	+	+	+	+
58	+	+	+	+
59	+	+	+	+
60	+	+	+	+
61	+	+	+	+
62	+	+	+	+
63	+	+	+	+
64	+	+	+	+
65	+	+	+	+
66	+	+	+	+
67	+	+	+	+
68	+	+	+	+
69	+	+	+	+
70	+	+	+	+
71	+	+	+	+
72	+	+	+	+
73	+	+	+	+
74	+	+	+	+
75	+	+	+	+
76	+	+	+	+
77	+	+	+	+
78	+	+	+	+
79	+	+	+	+
80	+	+	+	+
81	+	+	+	+
82	+	+	+	+
83	+	+	+	+
84	+	+	+	+
85	+	+	+	+
86	+	+	+	+
87	+	+	+	+
88	+	+	+	+
89	+	+	+	+
90	+	+	+	+
91	+	+	+	+
92	+	+	+	+
93	+	+	+	+
94	+	+	+	+
95	+	+	+	+
96	+	+	+	+
97	+	+	+	+
98	+	+	+	+
99	+	+	+	+
100	+	+	+	+

G/C = .289 G/C = .089 G/C = .044 G/C = .422
 G = 26.0 G = 8.0 G = 4.0 G = 38.0
 Y+R = 5.0 Y+R = 4.0 Y+R = .0 Y+R = 5.0
 OFF = .04 OFF = 34.4 OFF = 47.8 OFF = 52.2

90 sec G = 76.0 sec = 84.4% Y=14.0 sec = 15.6% Pad = .0 sec = .04

Lane Group	Width/Lanes	Reqd g/c	Used g/c	Service Rate	Adj	Volume	v/c	HCM Delay	L	90% Max Queue
LT+TH+RT	12/1	.233	.311	327	414	217	.524	17.5	C+	189 ft
SB Approach								17.5	C+	
LT+TH+RT	12/1	.196	.311	247	324	124	.383	16.0	C+	108 ft
NB Approach								16.0	C+	
LT+TH+RT	12/1	.371	.489	1758	1816	1271	.700	12.4	B	411 ft
WB Approach								13.1	B	
LT	12/1	.119	.144	141	249	96	.375	22.9	C	104 ft
TH+RT	24/2	.229	.444	1537	1614	665	.412	11.1	B	234 ft
LT	12/1	.087	.100	65	165	40	.226	24.2	C	46 ft

13.1 B

11.8 B

17.5 C+

16.0 C+

12.4 B

22.9 C

11.1 B

24.2 C

Kapolei High School
 3 Access Driveways - Revised Distribution 2/13/98
 PM PEAK HOUR

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters for Int # 0 - Kapolei Parkway & Rel. Rd B

METROAREA	NONCBD	3.0			
LOSTTIME	C	S			
LEVELOFSERVICE	0	0			
NODELOCATION	0	0			
APPROACH PARAMETERS					
APPLABELS	SB	NB			
TRADES	.0	.0			
PEDLEVELS	LOW	LOW			
PARKINGSIDES	NONE	NONE			
PARKVOLUMES	0	0			
BUSVOLUMES	0	0			
RIGHTTURNONREDS	0	0			
MOVEMENT PARAMETERS					
MOVIELABELS	RT	TH	LT		
VOLUMES	76	3	39		
WIDTHS	.0	12.0	.0		
LANES	0	1	0		
UTILIZATIONS	.95	.95	.95		
TRUCKPERCENTS	2.0	2.0	2.0		
PEAKHOURFACTORS	.95	.95	.95		
ARRIVALTYPES	3	3	3		
ACTIONIONS	NO	YES	YES		
REOCLEARANCES	4.0	5.0	4.0		
MINIMUMS	5.0	25.0	5.0		
IDEALSATFLOWS	1900	1900	1900		
DELAYFACTORS	1.00	1.00	1.00		
NSTOPFACTORS	1.00	1.00	1.00		
GROUPTYPES	NORM	NORM	NORM		
SATURATIONFLOWS	0	1409	0		
RT	TH	LT	RT	TH	LT
66	696	7	2	12	18
.0	24.0	12.0	.0	12.0	.0
.95	.95	.95	.95	.95	.95
2.0	2.0	2.0	2.0	2.0	2.0
.95	.95	.95	.95	.95	.95
3	3	3	3	3	3
NO	YES	YES	NO	YES	YES
4.0	5.0	4.0	4.0	5.0	4.0
5.0	25.0	5.0	5.0	10.0	5.0
1900	1900	1900	1900	1900	1900
1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00
NORM	NORM	NORM	NORM	NORM	NORM
0	1409	0	0	1390	0
0	3670	1770	0	3722	1770

SEQUENCES 16 NO NO NO NO NO NO
 PERMISSIVES YES YES YES YES YES YES
 OVERLAPS 90 180 10 10 10 10
 CYCLES 27.00 8.00 7.00 34.00
 GREENTIMES 5.00 4.00 .00 5.00
 YELLOWTIMES 2.00 6.00 12.00 11.00
 CRITICALS 2 6 12 11
 EXCESS 0

LEADLAGS NONE NONE NONE
 OFFSET .00 .00 .00
 PEDTIME

ATA No. STOP CONTROLLED INTERSECTION LEVEL OF SERVICE ANALYSIS 1961-62

Major Street: MAJOR STREET
 Minor Street: MAJOR STREET
 Peak Hour: 15:00
 Period Distribution: 21:58

Peak Hour Factor: 1.30

MAJOR STREET (Road 8):
 - Lane 1: V1
 - Lane 2: V2
 - Lane 3: V3
 - Lane 4: V4
 - Lane 5: V5

MAJOR STREET (Road 7):
 - Lane 1: V6
 - Lane 2: V7
 - Lane 3: V8
 - Lane 4: V9
 - Lane 5: V10

VOLUME ADJUSTMENTS:
 MOVEMENT NO. 1: 2
 MOVEMENT NO. 2: 45
 MOVEMENT NO. 3: 30
 MOVEMENT NO. 4: 15
 MOVEMENT NO. 5: 15
 MOVEMENT NO. 6: 15
 MOVEMENT NO. 7: 15
 MOVEMENT NO. 8: 15
 MOVEMENT NO. 9: 15
 MOVEMENT NO. 10: 15

STEP 1: FROM MAJOR STREET (7)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 2: FROM MAJOR STREET (8)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 3: FROM MAJOR STREET (7)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 4: FROM MAJOR STREET (8)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

DETAILED LEVEL OF SERVICE SUMMARY:

Movement	Approach	Level of Service	Avg Total Delay (sec)	LOS
MAJOR LEFT TURN (7)	178	A	340	A
MAJOR RIGHT TURN (7)	178	A	340	A
MAJOR LEFT TURN (8)	178	A	340	A
MAJOR RIGHT TURN (8)	178	A	340	A
AVG TOTAL APPROACH DELAY		A	31	A
AVG TOTAL INTERSECTION DELAY		A	31	A

ATA No. STOP CONTROLLED INTERSECTION LEVEL OF SERVICE ANALYSIS 1961-62

Major Street: MAJOR STREET
 Minor Street: MAJOR STREET
 Peak Hour: 15:00
 Period Distribution: 21:58

Peak Hour Factor: 1.30

MAJOR STREET (Road 8):
 - Lane 1: V1
 - Lane 2: V2
 - Lane 3: V3
 - Lane 4: V4
 - Lane 5: V5

MAJOR STREET (Road 7):
 - Lane 1: V6
 - Lane 2: V7
 - Lane 3: V8
 - Lane 4: V9
 - Lane 5: V10

VOLUME ADJUSTMENTS:
 MOVEMENT NO. 1: 2
 MOVEMENT NO. 2: 45
 MOVEMENT NO. 3: 30
 MOVEMENT NO. 4: 15
 MOVEMENT NO. 5: 15
 MOVEMENT NO. 6: 15
 MOVEMENT NO. 7: 15
 MOVEMENT NO. 8: 15
 MOVEMENT NO. 9: 15
 MOVEMENT NO. 10: 15

STEP 1: FROM MAJOR STREET (7)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 2: FROM MAJOR STREET (8)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 3: FROM MAJOR STREET (7)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

STEP 4: FROM MAJOR STREET (8)
 Conflicting Flow: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10
 Potential Capacity: 113
 Movement Capacity: 113

DETAILED LEVEL OF SERVICE SUMMARY:

Movement	Approach	Level of Service	Avg Total Delay (sec)	LOS
MAJOR LEFT TURN (7)	178	A	340	A
MAJOR RIGHT TURN (7)	178	A	340	A
MAJOR LEFT TURN (8)	178	A	340	A
MAJOR RIGHT TURN (8)	178	A	340	A
AVG TOTAL APPROACH DELAY		A	31	A
AVG TOTAL INTERSECTION DELAY		A	31	A

APPENDIX G

**Comments and Response Letter
on
Draft EA**

BENJAMIN J. CAVETANO
GOVERNOR



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

375 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4185

September 28, 1998

Donald K.W. Lau
Housing and Community Development Corporation of Hawaii
677 Queen Street, #300
Honolulu, HI 96813

Attn: Sandy Pfund

Dear Mr. Lau:


Subject: Draft environmental assessment (EA) for Kapolei High School

9 . 1 We have the following comments to offer:

1. Figures 7 and 11: These figures (FIRM map and State Land Use Boundaries map) need to be replaced with clear copies. The latter also requires a legend.
2. Contacts: Notify the City & County of Honolulu Planning Department of the proposed project. Document all contacts in the final EA and include copies of any correspondence.
3. Visual impacts: Include drawings or diagrams of the proposed buildings and any proposed landscaping that show the final appearance of the project. We recommend the use of native Hawaiian plants and shrubs.

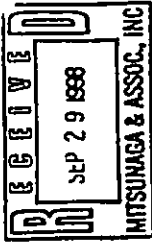
If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,


GARY GILL
Director

c: Byung Lee, Mitsunaga & Assoc.

CLARY GILL
DIRECTOR



Mitsunaga & Associates, Inc.

Architecture • Planning • Engineering
747 AMANA ST., SUITE 218 • HONOLULU, HAWAII 96816
TELEPHONE (808) 943-7882 • FAX (808) 944-2543

December 18, 1998

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

Attention: Ms. Nancy Heinrich

Subject: Kapolei High School
Environmental Assessment (EA)

Dear Mr. Gill:

Thank you for your September 28, 1998 comments concerning the subject project. Our responses to your comments are as follows:

1. FIRM map and State Land Use Boundary map will be replaced with clear copies. The latter will be with a legend.
2. The City's Planning Department has been consulted during the DEA Comment Period, and the Final EA will include copies of all correspondences during the comment period.
3. An illustration will be included in Appendix C. It will show the main entry to the proposed Kapolei High School off Kapolei Parkway as well as the final appearance of the school.

Various native Hawaiian plants and shrubs will be used for the landscaping of the school, including True Kou, Loulu Lelo, Beach Naupaka, Kului, Rockii Hibiscus, Akia, Beach Vitex, Ilima Papa, Kupukupu, Nehe and Pauiliika.

BOALUPE J. CHITTANO
COMMISSIONER

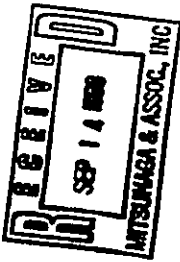


STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
PO BOX 1118 HONOLULU, HAWAII 96810

LETTER NO (P)1581.8

Mr. Byung S. Lee, AICP
Page 2

Letr. No. (P)1581.8



SEP 11 1988

Mr. Byung S. Lee, AICP
Mitsunaga & Associates, Inc.
747 Amana Street, Suite 216
Honolulu, Hawaii 96814

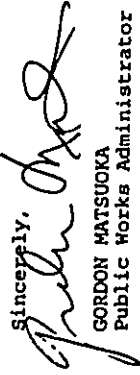
Dear Mr. Lee:

Subject: Kapolei High School
Draft Environmental Assessment (DEA)
DAGS Comments on the DEA Documents

Thank you for allowing the Department of Accounting and General Services (DAGS) the opportunity to review and comment on the DEA document for the subject project. The following comments are provided:

1. Include a cafeteria in the list of facilities for the OEQC bulletin.
2. The eleven (11) anticipated new schools for the Kapolei area discussed on Page 2 should be coordinated with the Department of Education (DOE) information in Table 2, Proposed Feeder Complex (refer to Page 29).
3. DAGS currently understands:
 - A. The DOE statement that the "earliest completion date available for Kapolei High School will be the 2000-2001 school year" should be clarified to indicate the target completion date is subject to the timing and availability of adequate State CIP funding (refer to Pages 4 and 10).
 - B. The estimated construction cost of approximately \$75,000,000 is for "base bid cost plus contingency only."
4. The status on "available potable water allocation" for the school operations should be clarified in the text on Pages 35 and 51.

If there are any questions, please have your staff call Mr. Ralph Morita of the Planning Branch at 586-0486.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

RM:jj
c: RCDCH
MVP
DOE-Facilities Branch

Mitsunaga & Associates, Inc.

Architecture • Planning • Engineering
747 AMANA ST., SUITE 218 • HONOLULU, HAWAII 96814
TELEPHONE (808) 943-7822 • FAX (808) 944-7583

December 18, 1998

Mr. Gordon Matsuoka
Public Works Administrator
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

Attention: Mr. Ralph Morita, Planning Br.

Subject: Kapolei High School
Environmental Assessment (EA)

Dear Mr. Matsuoka:

Thank you for your September 11, 1998 comments concerning the subject project. Our responses to your comments are as follows:

1. Cafeteria is called and listed in the Bulletin as a "Forum" which is a multipurpose gathering place with cafeteria function.
2. The description on page 2 will be revised to read, "a dire need for new school is anticipated."
3. a. The description regarding the target completion date will be revised according to your statement.
b. We concur with your statement regarding the estimated construction cost.
4. The description on page 35 will be revised to read, "Potable and non-potable water allocation for the school is presently available." The description on page 51 will be revised to read, "Potable and non-potable water allocation is already available."

Mr. Gordon Matsuoka
Public Works Administrator
State DAGS
December 18, 1998
Page 2

We appreciate your input for this project.

Very truly yours,

MITSUMAGA & ASSOCIATES, INC.

Byung S. Lee

Byung S. Lee, AICP
Project Planner

RL_dags.doc

cc: HCDCH

BENJAMIN J. CARTLAND
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
400 KOOEPA ROAD, SUITE 100
HONOLULU, HAWAII 96819-1180

September 25, 1998

Mr. Byung S. Lee
Mitsunaga and Associates, Inc.
747 Amana Street, Suite 216
Honolulu, Hawaii 96814

Dear Mr. Lee:

Subject: Kapolei High School
Draft Environmental Assessment

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

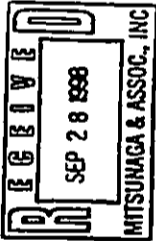
- Please be aware that although Barbers Point Naval Air Station (BPNAS) will be closed in July 1999, the State of Hawaii, Department of Transportation, Airports Division will acquire a portion of the Air Station which will be used for general aviation. The proposed site for Kapolei High School, therefore, will be subject to some adjacent aircraft overflights and noise. The Airports Division has prepared a noise contour map for the proposed use of the airfield.
- Contrary to what was stated on page 33, 3rd paragraph, various other agencies besides the State, like the City and County of Honolulu, Hawaii National Guard and U.S. Coast Guard, will acquire portions of BPNAS.
- Coordination is needed by the City and County of Honolulu and various agencies to manage storm water with respect to new development. The objective is to maintain the existing runoff coefficient, which in turn will not change the hydrograph curves for this drainage basin.

Hono Laka 'oe Ke Ala Ahika
Working Together to Provide Careests of Aloha

KAZUHIKO YAMASHITA
DIRECTOR
QUALITY DIRECTOR
AIRPORTS DIVISION
OLEIWA, OAHU, HI

IN REPLY REFER TO:

AIR-EP
98-0735



Mr. Byung S. Lee
Page 2
September 25, 1998

AIR-EP
98-0735

This objective can be achieved by requiring best management practices for new development which will retain a significant amount of precipitation on the site and then allow the overflow to the next level of the drainage system. This next level of drainage can be captured and retained in dedicated retention basins or retention basins incorporated within parks and open areas. The consequence of not addressing this issue is the increase in frequency and severity of flooding downslope, which in this case is where the airport is located.

Thank you very much for providing us the opportunity to review this document. Please contact Ben Schlapak, Head Planning Engineer, at 838-8821 to clarify any questions you may have.

Sincerely,

Ken A. White
FERRY M. MATSUDA, P.E.
Airports Administrator

c: Aries Consultants, Ltd. (J. Sanders)
Federal Aviation Administration (D. Welhouse)

Mitsunaga & Associates, Inc.

Architecture • Planning • Engineering
747 AMANA ST., SUITE 218 • HONOLULU, HAWAII 96814
TELEPHONE (808) 945-7842 • FAX (808) 948-2543

December 18, 1998

Mr. Jerry M. Matsuda
Airports Administrator
Department of Transportation, Airports Division
State of Hawaii
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

Attention: Mr. Ben Schlapak, Head Planning Engineer

Subject: Kapolei High School
Environmental Assessment (EA)

G - 6

Dear Mr. Matsuda:

Thank you for your September 25, 1998 comments concerning the subject project. Our responses to your comments are as follows:

1. Brief discussion of noise impact as the result of NASBP Redevelopment Plan and noise contour map prepared by Aries Consultants will be added to the EA.
2. The description on page 33 will be revised to read, "NASBP is in the process of being transferred to various State, City and County, and Federal agencies."
3. For the entire Villages of Kapolei development including the proposed Kapolei High School, the Kapolei Drainage Master Plan was prepared by HCDCH, and the City and the Navy accepted the drainage master plan.
According to the plan, Kapolei Golf Course and lower channel were constructed as Best Management Practice to maintain the "pre-development" drainage conditions for the downstream portions of the Makalapa and Makakilo watersheds.

Mr. Jerry M. Matsuda
Airports Administrator
State DOT, Airport Div.
December 18, 1998
Page 2

The City's DPP has been consulted during the DEA Comment Period, and the project design team will keep closely coordinating with the DPP during the design and permit phases of the proposed project.

We appreciate your input for this project.

Very truly yours,

ELTSUNAGA & ASSOCIATES, INC.

Byung S. Lee

Byung S. Lee, AICP
Project Planner

REL_sdot.doc

cc: HCDCH

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 21ST FLOOR • HONOLULU, HAWAII 96813-2017
PHONE: (808) 525-4333 • FAX: (808) 525-4182



JEREMY HARRIS
DATE:

PATRICK OHSUMI
CHIEF PLANNING OFFICER
DONAL HARRIS
DEPUTY CHIEF PLANNING OFFICER
RS8/98-1695

September 30, 1998

Mr. Donald K.W. Lau
Executive Director
Housing and Community Development
Corporation of Hawaii
State of Hawaii
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Lau:

G-7

Draft Environmental Assessment
Kapolei High School - Ewa, Oahu, Hawaii
Tax Map Key: 9-1-16:74 and 909-75

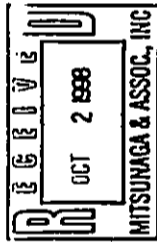
Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Kapolei High School development.

Development of the Kapolei High School in the Villages of Kapolei is consistent with the City's General Plan and its new Ewa Development Plan. Specifically:

1. The proposed development is consistent with the provisions of the City's 1992 General Plan Section I, Population, Objective C Policy 2 which encourages development within the Secondary Urban Center at Kapolei and the Ewa urban fringe, and with Section IX: Health and Education, Objective B which supports the provision of adequate educational facilities.
2. The proposed project is consistent with the "Vision" for Ewa's future, as provided in the new Ewa Development Plan (DP) which became effective on October 22, 1997.
 - a. The site for the proposed school is located within the Ewa DP's Urban Growth Boundary, in the Phase I area identified for Urban Expansion from 1997 to 2005.

Mr. Donald K.W. Lau
Executive Director
Housing and Community Development
Corporation of Hawaii
September 30, 1998
Page 2

- b. The school facilities are needed to support the growth of the City of Kapolei, the Secondary Urban Center, and the Ewa urban fringe areas which is a key element of the DP vision.
- c. The proposed high school will help implement the Ewa DP vision that adequate infrastructure be provided to address current deficiencies and meet the demand expected from planned development by meeting the need for at least one new high school by the year 2000 projected by the State Department of Education (DOE).
- d. Sections II.D.3 and III.C.2 (pages 34, 35 and 50, respectively) of the DEA state that a water allocation for the school is presently available, and that a dual water system is planned with connections to the existing Villages of Kapolei potable system and to the existing non-potable system along Kapolei Parkway.
Use of the dual water system, water efficient landscaping and possible extension of the dual water system to the adjacent multi-family residential Ewa DP vision and policies (pages 2-4, 2-17 and 4-16 to 4-21) to conserve the potable water supply in the area.
- e. Sections III.A.2 and 3. (Page 41) of the DEA states that the project site was under sugar cane cultivation since the later 1800's prior to the initial grubbing and grading for the Villages of Kapolei site in 1980; and that there are no impacts associated with the project with regard to flora and fauna and archeological resources.
As per Section 3.4 of the Ewa DP, the following should be added to clarify the "Mitigation" discussion of the archeological resources:
The State Historic Preservation Officer shall determine the method of preservation, the site boundaries, setback restrictions and criteria for adjacent uses and the appropriateness of public access.
- f. Section III.C.1 (page 49) of the DEA states that over 40% of the students would be from the Kapolei area and that automobile traffic would be reduced by students walking to/from school and the use of vans and buses.



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December 18, 1998

Mr. Patrick T. Onishi
Chief Planning Officer
Department of Planning
City & County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813-4950

Attention: Mr. Ray Sakai
Subject: Kapolei High School
Environmental Assessment (EA)

0
0

Dear Mr. Onishi:

Thank you for your September 30, 1998 comments concerning the subject project. Our responses to your comments are as follows:

1. Your confirmation of the proposed project being consistent with the City's 1992 General Plan (Section I, Population, Objective C, Policy 2) is noted and appreciated.
2. a, b, c & d. Your confirmation of the proposed project being consistent with the City's Ewa DP vision and policies is noted and appreciated.
 - e. The EA will be revised to read: "The State Historic Preservation Officer shall determine the method of preservation, the site boundaries, setback restrictions and criteria for adjacent uses and the appropriateness of public access."
 - f. Regarding car/van pooling, the use of bicycles and traffic assessment report, we discussed the matter with the State DOE and DAGS and provide the following response:

Your statement regarding car/van pooling and the use of bicycles was brought to the attention of the State DOE. The State DOE indicated that high level of bicycle use is not anticipated in high schools.

Mr. Patrick T. Onishi
Chief Planning Officer
Planning Department
City and County of Honolulu
December 18, 1998
Page 2

especially in Hawaii. If there is a demand after the school is built, DOE is willing to provide bike racks accordingly.

DOE encourages car-pooling. However, it cannot be mandatory. It is anticipated that most students, who live beyond walking distance, will use school bus. Busing system would significantly reduce traffic volume generated by the students.

Your statement regarding traffic assessment report was brought to the attention of the State DAGS. The State DAGS indicated that the BPNAS Community Redevelopment Plan (CRP) could not be incorporated into the traffic assessment report since the Commission's March 1997 Summary Report did not provide traffic count data.

The Kapolei High School will be located as planned in the 1987 Kapolei Village Master Plan whereas various roadways and land use recommended in the BPNAS CRP are still being finalized at this time according to the Commission's notice of October 28, 1998 public hearing.

The CPR proposes several new connecting roadways from the base to various roadways to the north, west and east of the base. These additional public accesses will reduce traffic on Fort Barrette Road. It is also anticipated that proposed public and recreational uses of large areas of the base may further reduce peak hour traffic volumes on Fort Barrette Road.

9. The City and the Navy accepted the 1991 Kapolei Drainage Master Plan, prepared by HCDC. According to the drainage master plan, the Kapolei Golf Course and lower channel were constructed to maintain the "pre-development" drainage conditions for the downstream portions of the Makalapa and Makakilo watersheds.

The City's DPP has been consulted during the DEA Comment Period, and we have not received any comment from the DPP. However, the project design team will keep closely coordinating with the DPP during the design and permit phases of the proposed project.

The Coral Pit is an integral part of the BPNAS drainage system since it protects the base from flooding by Makakilo Gulch. At this time it is

Mr. Byung S. Lee
October 8, 1998
Page 2

4. As an additional consideration for improving safety in the project area, preliminary analysis should be conducted to determine whether traffic calming measures, e.g., roundabouts, may be appropriate for locations such as the Kapolei Parkway intersection with Relocated Road "B"/Proposed Driveway 1.
5. To accommodate emergency situations and improve circulation within the campus, a perimeter roadway should be constructed around the baseball/softball fields and football/soccer field areas.
6. On Page 9 of Appendix F, "Traffic Assessment: Kapolei High School", it is stated that approximately 590 parking spaces will be provided. Justification for the parking supply that is proposed should be provided. On-street parking problems may result due to lack of sufficient off-street parking. Contingency plans may need to be developed to provide additional off-street or on-site parking should the project's established off-street parking prove to be insufficient.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

Ceryl D. Soon
CHERYL D. SOON
Director

Mitsunaga & Associates, Inc.

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747 AMANA ST., SUITE 210 • HONOLULU, HAWAII 96814
TELEPHONE (808) 945-7882 • FAX (808) 944-2583

December 18, 1998

Ms. Cheryl D. Soon
Director
Department of Transportation Services
City & County of Honolulu
711 Kapiolani Boulevard, Suite 1200
Honolulu, Hawaii 96813

Attention: Mr. Faith Miyamoto
Subject: Kapolei High School
Environmental Assessment (EA)

Dear Ms. Soon:

Thank you for your October 8, 1998 comments concerning the subject project. Our responses to your comments are as follows:

1. The description of the design charrette on page iii will be revised to read, "The design charrette for Kapolei High School was held over a four-month period from November 1997 through February 1998."
2. Drop-off/pick-up areas will be located off of Kapolei Parkway, and student parking will be primarily along Fort Barrette Road. Visitor and faculty parking will be located off Kapolei Parkway. A roadway connecting the parking areas will alleviate any potential backup.

The project design team will closely coordinate with the DTS and DPP during the design and permit phases of the proposed project. Plans have been forwarded for review.
3. Walkways within the campus will provide near direct access from all points of entry to any building on campus. With widths of six to twelve feet, the walkways will be designed to be generous for both pedestrians and bicycle users.

APPENDIX H

Bibliography

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APPENDIX I

Project Team

PROJECT TEAM

Developer: Makai Village Partnership
Kathy Inoue, Chief Operating Officer
Ranelle Ho, Project Manager
Kathy Kawaguchi, Kapolei High School Project
Coordinator

Planner: Mitsunaga & Associates, Inc.
Byung Soo Lee

Architect: Mitsunaga & Associates, Inc.
Steve Wong
Laurel Nahme
Bill Chang

Charette Facilitator: Cuningham Group
John Cuningham
Bruce Jilk

Civil Engineer: R.M. Towill Corp.
Jim Yamamoto

Landscape Architect: Brownlie and Lee
Richard Brownlie

**Structural Engineer: Mitsunaga &
Associates, Inc.**
Stuart Otake

**Mechanical Engineer: Thermal Engineering
Corp.**
Paul Fukunaga

Electrical Engineer: ECS, Inc.
Vincent Miyagawa

Acoustic Engineer: Y. Ebisu & Associates
Yoshi Ebisu

Soils Engineer: Geolabs, Hawaii
Robin Lim

Graphic Designer: The Design' Ng Co.
Wayne Ng

**Cost Engineer: Cost Engineering of Hawaii,
Inc.**
Victor Tsuha

**Accessibility: Accessibility Planning and
Consulting, Inc.**
Bruce Clark

Food Facilities: Mizo & Associates, Inc.
Irwin Mizo