

1992 - Oahu - FEIS -
Kapolei Sports

FILE COPY

1992

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
KAPOLEI SPORTS AND RECREATION CENTER**

Prepared For:

**Department of Accounting & General Services
State of Hawaii**

Prepared By:

Mitsunaga and Associates, Inc.

OCTOBER 1992

KAPOLEI SPORTS AND RECREATION CENTER

TABLE OF CONTENTS

| | | | | | | | PAGE |
|------------|---|----|----|----|----|----|------|
| 1.0 | INTRODUCTION AND SUMMARY | .. | .. | .. | .. | .. | 1 |
| 1.1 | Purpose and Need for EIS | .. | .. | .. | .. | .. | 1 |
| 1.2 | Background | .. | .. | .. | .. | .. | 1 |
| 1.3 | Location and Ownership | .. | .. | .. | .. | .. | 2 |
| 1.4 | Existing Conditions and Surrounding Uses of the Four Alternate Sites | .. | .. | .. | .. | .. | 3 |
| 1.4.1 | Location of Site on Oahu and in Ewa | .. | .. | .. | .. | .. | 3 |
| 1.5 | Development Summary | .. | .. | .. | .. | .. | 4 |
| 1.6 | Summary of Probable Impacts | .. | .. | .. | .. | .. | 5 |
| 1.6.1 | Noise Quality | .. | .. | .. | .. | .. | 5 |
| 1.6.2 | Air Quality | .. | .. | .. | .. | .. | 5 |
| 1.6.3 | Historic Character | .. | .. | .. | .. | .. | 5 |
| 1.6.4 | Social Impacts | .. | .. | .. | .. | .. | 6 |
| 1.6.5 | Agricultural Resources | .. | .. | .. | .. | .. | 6 |
| 1.6.6 | Traffic | .. | .. | .. | .. | .. | 8 |
| 1.6.7 | Utility Systems | .. | .. | .. | .. | .. | 8 |
| 1.6.8 | Drainage | .. | .. | .. | .. | .. | 8 |
| 1.6.9 | Lighting | .. | .. | .. | .. | .. | 9 |
| 2.0 | DESCRIPTION OF PROPOSED ACTION | .. | .. | .. | .. | .. | 10 |
| 2.1 | Project Overview | .. | .. | .. | .. | .. | 10 |
| 2.2 | Identification of Alternative Sites in Ewa | .. | .. | .. | .. | .. | 11 |
| 2.2.1 | Areas in Campbell Estate's Kapolei Long Range Master Plan | .. | .. | .. | .. | .. | 11 |
| 2.2.2 | Barbers Point Naval Air Station Aircraft Flight Path | .. | .. | .. | .. | .. | 12 |
| 2.2.3 | Project Description | .. | .. | .. | .. | .. | 12 |
| 2.3 | Uses of Facility | .. | .. | .. | .. | .. | 12 |
| 2.3.1 | Public Uses | .. | .. | .. | .. | .. | 12 |
| 2.3.2 | Professional Baseball Training Facility Uses | .. | .. | .. | .. | .. | 13 |
| 2.4 | Infrastructure and Roadways | .. | .. | .. | .. | .. | 14 |
| 2.4.1 | Infrastructure | .. | .. | .. | .. | .. | 14 |
| 2.4.2 | Roadways | .. | .. | .. | .. | .. | 14 |
| 2.5 | Project Costs | .. | .. | .. | .. | .. | 14 |
| 2.5.1 | Off-Site Costs | .. | .. | .. | .. | .. | 14 |
| 2.5.2 | On-Site Development Costs | .. | .. | .. | .. | .. | 15 |
| 2.6 | Development Timetable | .. | .. | .. | .. | .. | 15 |
| 2.6.1 | Approvals Necessary | .. | .. | .. | .. | .. | 15 |
| 2.6.2 | Project Schedule | .. | .. | .. | .. | .. | 15 |

TABLE OF CONTENTS - 3

| | |
|--|-----------|
| 3.12 Infrastructure | 33 |
| 3.12.1 Electricity | 33 |
| 3.12.2 Telephone | 33 |
| 3.12.3 Water.. .. . | 33 |
| 3.12.4 Sewage | 33 |
| 3.12.5 Solid Waste Disposal | 34 |
| 3.12.6 Roads | 35 |
| 3.13 Public Services | 35 |
| 3.13.1 Police Protection | 37 |
| 3.13.2 Fire Protection | 37 |
| 3.13.3 Hospital/Medical | 37 |
| 3.13.4 Bus Service.. .. . | 37 |
| 3.14 Recreational Facilities | 38 |
| 3.15 Commercial Facilities | 38 |
| 4.0 RELATIONSHIP TO LAND USE PLANS AND POLICIES.. .. . | 41 |
| 4.1 Overview | 41 |
| 4.2 Federal Plans, Policies, and Controls | 41 |
| 4.3 State Plans, Policies, and Controls.. .. . | 41 |
| 4.3.1 The Hawaii State Plan, Chapter 226, Hawaii Revised Statutes | 41 |
| 4.3.1.1 Population H.R.S. Section 226-5 | 42 |
| 4.3.1.2 Economy H.R.S. Section 226-6 | 42 |
| 4.3.1.3 Agriculture H.R.S. Section 226-7 | 42 |
| 4.3.1.4 Water H.R.S. Section 226-16 | 42 |
| 4.3.1.5 Transportation H.R.S. Section 226-17 | 42 |
| 4.3.1.6 Housing H.R.S. Section 226-19 | 43 |
| 4.3.2 Hawaii State Functional Plans | 43 |
| 4.3.2.1 State Recreation Functional Plan | 43 |
| 4.3.2.2 State Water Resources Development Plan | 44 |
| 4.3.2.3 State Energy Plan.. .. . | 44 |
| 4.3.2.4 State Health Plan | 44 |
| 4.3.2.5 State Agricultural Plan | 45 |
| 4.3.2.6 State Transportation Plan | 45 |
| 4.4 State Land Use Law | 45 |
| 4.5 The General Plan for the City and County of Honolulu | 45 |
| 4.5.1 Population | 46 |
| 4.5.2 Natural Environment | 46 |
| 4.5.3 Housing | 47 |
| 4.5.4 Transportation and Utilities.. .. . | 47 |
| 4.5.5 Physical Development and Urban Design | 47 |
| 4.6 Relevance to Other Social Services and Policies | 47 |
| 4.7 Ewa Development Plan | 48 |
| 4.8 County Zoning.. .. . | 48 |

TABLE OF CONTENTS - 4

| | | | | | | | | |
|--------------------------|--|----|----|----|----|----|----|-----------|
| 4.9 | Environmental Impact Statement (Chapter 343, HRS) | .. | .. | .. | .. | .. | .. | 48 |
| 4.10 | State Land Bank | .. | .. | .. | .. | .. | .. | 49 |
| 5.0 | ALTERNATIVES TO THE PROPOSED ACTION | .. | .. | .. | .. | .. | .. | 50 |
| 5.1 | No Action Alternative | .. | .. | .. | .. | .. | .. | 50 |
| 5.2 | Alternatives to Ewa | .. | .. | .. | .. | .. | .. | 50 |
| 5.3 | Other Alternatives | .. | .. | .. | .. | .. | .. | 51 |
| 6.0 | IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES & THE RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY | .. | .. | .. | .. | .. | .. | 52 |
| 6.1 | Irreversible and Irretrievable Commitments of Resources | .. | .. | .. | .. | .. | .. | 52 |
| 6.2 | Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity | .. | .. | .. | .. | .. | .. | 52 |
| 7.0 | SUMMARY OF UNRESOLVED ISSUES | .. | .. | .. | .. | .. | .. | 54 |
| 7.1 | Terms of Lease | .. | .. | .. | .. | .. | .. | 54 |
| 7.2 | Land Acquisition | .. | .. | .. | .. | .. | .. | 54 |
| 7.3 | Transportation | .. | .. | .. | .. | .. | .. | 54 |
| 7.4 | Private Use | .. | .. | .. | .. | .. | .. | 54 |
| 8.0 | PARTIES CONSULTED FOR THE PREPARATION OF THE EIS | .. | .. | .. | .. | .. | .. | 55 |
| 8.1 | Federal | .. | .. | .. | .. | .. | .. | 55 |
| 8.2 | State | .. | .. | .. | .. | .. | .. | 55 |
| 8.3 | City and County of Honolulu | .. | .. | .. | .. | .. | .. | 55 |
| 8.4 | Individuals and Organizations | .. | .. | .. | .. | .. | .. | 55 |
| <u>APPENDICES</u> | | | | | | | | |
| APPENDIX A | Preliminary Analysis of Alternative Sites | .. | .. | .. | .. | .. | .. | 57 |
| | Solid Waste Disposal | | | | | | | |
| | Evaluation Criteria | | | | | | | |
| | Development Plans and Proposals | | | | | | | |
| | The Impact on the Profitability of Oahu Sugar Company | | | | | | | |
| | Impacts Associated with Sugar Operations and | | | | | | | |
| | Mitigation Measures | | | | | | | |
| APPENDIX B | Uses of Facility | .. | .. | .. | .. | .. | .. | 82 |
| | Figure 1 Professional Baseball Uses | | | | | | | |
| | Figure 2 Public Uses | | | | | | | |
| APPENDIX C | Maps | .. | .. | .. | .. | .. | .. | 85 |
| | Location Map | | | | | | | |

TABLE OF CONTENTS - 6

| | | | | | | |
|-------------------|--|-----------|-----------|-----------|-----------|------------|
| APPENDIX H | Archaeological Assessment.. | .. | .. | .. | .. | 146 |
| APPENDIX I | Letter and Settlement Agreement between Navy and Campbell Estate | .. | .. | .. | .. | 148 |
| | Relevant Land Use and Height Restrictions for the Four Alternate Sites Figure 1 Easements Map | | | | | |
| APPENDIX J | Bibliography | .. | .. | .. | .. | 182 |
| APPENDIX K | Tables A & B | .. | .. | .. | .. | 186 |
| | A. Schedule of Permits and Approvals | | | | | |
| | B. Preliminary Budget Estimates: On-site and Off-site Costs for Alternative Sites A, B, C & D | | | | | |
| APPENDIX L | Comments on Draft EIS | .. | .. | .. | .. | 192 |

1.0 Introduction and Summary

1.1 Purpose and Need for EIS

Pursuant to Chapter 200 of Title 11, Administrative Rules, Subchapter 5(b), the project is subject to the provisions set forth by Chapter 343, Hawaii Revised Statutes (HRS), because of the proposed use of State funds to acquire and develop the property. The State Department of Accounting and General Services (DAGS) has determined that the proposed project could have significant environmental impacts and that a full Environmental Impact Statement (EIS) shall be prepared in accordance with Chapter 343, HRS. This EIS will provide detailed information on the proposed action, existing environmental conditions, and an assessment of probable impacts and mitigation measures.

1.2 Background

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 recreational facilities have become more acute.

The recreational acreage required to support community sports is directly related to the area's population. Projections of future populations for West Oahu and a summary of population projections by district for the Ewa Oahu area and the recreational acreage required to support sports activities (based on the standard requirement of 2 acres per 1,000 people) reveal a present deficiency of over 30,000 acres, and unless additional facilities are provided this deficiency will increase significantly by year 2000.

The State of Hawaii proposes to build a sports and recreation center at Kapolei in Ewa on Oahu. To this end a feasibility study and preliminary alternate site analysis were completed in June, 1990, designating four possible sites for the facility.

Residents of the Ewa area are expected to use the proposed facilities on a daily basis, whereas people living in the outlying sectors of West Oahu and other areas of Oahu will utilize the sports complex only for major sports and recreational events.

Sports in the Ewa area are strongly supported by this active, sportsminded community. In addition to community uses, the facility has the potential to help develop and diversify Hawaii's economy. Several Japanese professional baseball teams have expressed a desire to utilize such a facility. In this regard, these teams will probably use the facility for about one month during the year. It should be noted that during this month community uses will not be eliminated, but continue, although perhaps at a reduced level of activity. Japanese teams have trained on Maui and Kauai in the past. However, these teams have been restricted by inadequate facilities available there. A survey and marketing study of Japanese professional baseball teams has indicated that one or more teams would conduct spring training in an appropriately equipped Hawaii-based facility. It should also be noted that the Hawaii Winter League has expressed interest in signing a long-term lease for the facility.

The economic implications of the use of the facility by Japanese professional baseball teams are not limited to revenues to Hawaii businesses directly associated with the players and coaches, but also Hawaii would be promoted as a visitor destination through reports of the teams by the media in Japan. Also the major national sporting events, which cannot be held at any existing single site in Hawaii, could be accommodated, thereby furthering the prestige of Hawaii as a sports center in the Pacific.

The development of a sports and recreation center can also serve to bolster tourism, Hawaii's primary industry, by promoting the favorable climate of the state for all sports. Hawaii's year-round temperate climate is a strong attraction for professional teams which need warm climate training facilities.

Benefits to the State of Hawaii would accrue from several sources, including the publicity and possible broadcasting the operations could generate, the attraction of tourists to the facility and to the State of Hawaii associated with the professional teams, tourists, and media.

1.3 Location and Ownership

Four Alternate Sites have been proposed for the project, all located in the Ewa Plain on the island of Oahu. (See Figures 1, 1A, and 2, Appendix C). The general location of the four Alternate Sites was determined by many factors, including availability of land and the plans for a "Second City" in this region. Also considered were the potential of mutually acceptable long range goals of the proposed project and that of the "Kapolei Long Range Master Plan" (April 1990). All four of these Alternate Sites are located on land owned by Campbell Estate. However, an agreement has been reached for two of the four sites to be acquired by the State of Hawaii. (See Section 7.2, Land Acquisition)

1.4 Existing Conditions and Surrounding Uses of the Four Alternative Sites

The existing use of each of the four Alternative Sites is agricultural cultivation of sugar cane. The surrounding uses are also principally agricultural with various residential developments in progress or planned for those areas near the main roadways.

1.4.1 Location of Site on Oahu and in Ewa

It was thought that the site should be located in Oahu, for the following reasons:

1. Land Considerations

The large site required makes it necessary to look in rural areas such as Ewa and Central Oahu, where large open non-committed areas are available, and where disruption of existing uses can be minimized.

2. Infrastructure Considerations

Ewa offers more possibilities than Central Oahu as far as satisfying the need for a large area not selected for development, which at the same time meets infrastructure requirements.

3. Accessibility

Ewa is more centrally located than Central Oahu in terms of accessibility by roadways from major population centers. The creation of the new Kapolei Second City in Ewa and the linkages to existing population centers offered by the H-1, H-2, and H-3 freeways make Ewa more readily accessible to a larger percentage of Oahu residents than Central Oahu.

4. Weather

Since the outdoor functions and nature of activities to take place at the facility necessitate good weather, the lower median rainfall of the Ewa region makes it preferable to Central Oahu.

5. Public Use

Since Oahu has the largest population of all the islands, it would provide the largest base of public users. It should be noted that the planned development of the University of Hawaii West Oahu Campus in Ewa may also widen the use of the facility.

6. Private Use

The Japanese professional baseball teams and other potential U.S. Mainland visiting teams and sports groups prefer Oahu over the neighbor islands as a site for spring training because of its unique features, specifically: the presence of Waikiki, the largest selection of desirable hotels, and the availability of other leisure and recreational facilities, including retail stores, restaurants, and golf courses.

1.5 Development Summary

Project: Kapolei Sports and Recreation Center
Ewa, Island of Oahu

Proposing Agency: Department of Accounting and General Services

Accepting authority: Governor John Waihee

Consultant: Mitsunaga and Associates
747 Amana St., Suite 216
Honolulu, HI 96814
Phone: 945-7882

Proposed Action: Land acquisition and construction of a sports and recreation facility in four alternative sites located in the Ewa area.

Project Location: Ewa, Island of Oahu

Lot Area: Approximately 75 acres per site

Landowner: Campbell Estate (two Alternate Sites)
State of Hawaii (two Alternate Sites)

Existing Use: Agricultural, specifically sugar cane cultivation (four Alternate Sites)

State Land Use: Agricultural (four Alternate Sites)

Development Plan: Agriculture (four Alternate Sites)

Zoning: AG-1 Restricted Agriculture (four Alternate Sites)

1.6 Summary of Probable Impacts

The implementation of the Kapolei Long Range Master Plan in general and the Kapolei Sports and Recreation Center Project in particular is expected to result in a number of short- and long-term impacts on the physical and socio-economic environments and infrastructure systems. First, impacts on the physical environment will occur in the short-term during construction as well as in the long-term during the use of the completed facility. In general, decreases in air and noise quality are expected during the three-year development period. Secondly, short-range and long-range impacts on the socio-economic environment are expected. Finally, impacts on transportation and utility systems, most notably sewer, water and drainage, are a major concern in the short- and long-term. The following is a summary of the probable impacts and appropriate mitigation measures related to the project.

1.6.1 Noise Quality

Crowd noise during games at the facility will have some impact on the general area and environment. However it should be pointed out that Alternate Sites "B" and "C" are substantially affected by aircraft taking off and landing at Barbers Point Naval Air Station. More detailed information is provided in Section 3.5. Each of the four Alternate Sites is adjacent to land under sugar cane cultivation, and as such are subject to noise associated with harvesting. Expected increased urban activity will adversely impact the existing noise levels within any of the sites, particularly during construction periods. In addition, there is a possibility of the resumption of railroad operations. Government controls regarding noise levels will help mitigate the potential impacts from all of these activities.

1.6.2 Air Quality

The project will inevitably result in short- and long-term impacts to the existing air quality. In the short-term the major impact on air quality will be air pollutants from fugitive dust during the construction of the facility. Project adherence to Federal and State regulations governing air quality and infrastructure improvements will help to mitigate the impacts. In the long-term, the exhaust from vehicles used by those who make use of the facility will reduce air quality.

1.6.3 Historic Character

There is concern that the area will lose its historic small-town, rural qualities once the project is built. The State recognizes this as a valid concern, and, to the extent possible, the City will isolate the existing Ewa villages from new development areas. To ensure the preservation of the district, the City will initiate the process of establishing the Ewa Villages, which are adjacent to

Alternate Sites "B" and "C", as a special district. There will be an attempt to develop the Kapolei Sports and Recreation Center with an architectural theme similar to the general area. However, it should be pointed out that no baseball stadium for 5,000 people can be built to easily conform to the rural character of Ewa. A more likely scenario and more reasonable position is that Ewa is being urbanized, and this facility is part of that process.

1.6.4 Social Impacts

Construction activities will have short-term impacts on surrounding activities. Businesses and residents of nearby areas will be temporarily inconvenienced by the construction of buildings and infrastructure. Offsetting these impacts, however, will be the long-term increase in sports and recreational opportunities.

1.6.5 Agricultural Resources

The implementation of the proposed Master Plan will result in the withdrawal of approximately 75 acres of agricultural land from sugarcane production. As the project lands border urban areas, their continued use in agriculture conflicts with longer term County and State plans for urbanizing the Ewa area. Although Oahu Sugar Company (OSCO), which currently farms the land, opposes any reduction in the acreage of land under sugar cultivation, the withdrawal of 75 acres of agricultural land is not expected to have a major impact on OSCO's continued viability. Should any land be removed from sugar cultivation, OSCO has expressed preferences for the selection of the land based upon several factors.

First, OSCO would prefer that any land removed from sugar cultivation interfere least with its planting and harvesting operations. For example, removing a site completely surrounded by cane fields from cultivation would be less desirable than removing a site bounded by another urban use.

Second, OSCO strongly opposes removing any more land from sugar cultivation from the portion of land immediately on the Waianae side of Fort Weaver Road. OSCO has taken this position because this action may stimulate further attempts to reclassify more agricultural land in that area to urban uses. Fort Weaver Road is perceived as both a physical and psychological boundary that serves to restrict the urbanization of agricultural lands. As such, OSCO opposes the selection of either Alternate Site "A" or "D". A further reason that OSCO opposes the selection of Alternate Site "D" in particular is that this site has wells and pipelines that are necessary for the cultivation of agricultural lands in that entire area, not restricted to that site alone. Rather than Alternate Sites "A" or "D", OSCO prefers the expansion of urbanization from the Kapolei Villages area since that area has already been recently reclassified for urban uses.

Third, OSCO has suggested that the proposed Kapolei Sports and Recreation Center may be used as a buffer between agricultural and other uses of land. The cultivation of sugar cane during certain periods involves 24-hour a day operations, generating substantial noise and dust. OSCO has suggested, for example, that Alternate Site "B" could serve as a buffer if it were located adjacent to Horita's planned golf course at Kapolei. See also "Impacts Associated with Sugar Operations and Mitigation Measures" in Appendix A.

It should also be noted that standards and criteria regarding the reclassification of important agricultural lands to the Urban District have been promulgated by the LESA Commission as part of their legislative mandate. Although not officially adopted as public policy, they represent an important step and are presented below:

1. The proposed designation conforms to the Hawaii State Plan.
2. The proposed designation conforms to the County General and/or Community Development Plans.
3. The proposed redistricting is based on a demonstrated need for non-agricultural use, such as housing, employment, economic development or public facilities, which overrides the IAL designation based on agricultural need, impact on production goals and feasibility.

As discussed in Section 4.0 of this report, the proposed action conforms to the intent and spirit of the Hawaii State Plan, and implements General and Development Plan policies regarding the development of the Secondary Urban Center. Moreover, if either Site "B" or "C" is selected it would involve the use of recently acquired state land through the condemnation process for the proposed redistricting based on a demonstrated need for non-agricultural use, including housing, economic development and public facilities. The Ewa Development Plan identifies general areas of urban development and redevelopment including Makakilo, Ewa Plantation Villages, Ewa Beach, West Beach, Ewa Marina, Barbers Point and the City of Kapolei. The Development Plan Special Provisions for Ewa state that: "sufficient prime and other important agricultural lands are to be provided in Ewa in accordance with the general plan policy to encourage the continuation of sugar and pineapple as viable industries (Section 24-3.1)."

In keeping with the intent of the Development Plan Special Provisions encouraging the continuation of sugar as a viable industry, it would seem that based on several recent studies, the overall impact on the sugar industry of withdrawing 75 acres of prime agricultural land from sugar production even in the case of Site "A" and "D" may be minimal. The summary of the results of

Kapolei Town Center (1988), is presented in Appendix A. (See also Section 3.8 of this report).

1.6.6 Traffic

The Traffic Analysis (Appendix F) indicates that the proposed action will impact traffic volumes and flows. For example, Fort Weaver Road will experience decreased traffic efficiency, although this impact will be a collective function of several developments in the vicinity. A summary of these impacts and recommended mitigation measures are included in the discussion on Traffic in Section 3.

1.6.7 Utility Systems

Upgrading of the utility systems in the project area will have positive impacts, as Campbell Estate's Kapolei Long Range Master Plan requires all future systems to be sized to meet the demands of the project site. The utility systems such as water, wastewater, drainage, power, and communication will be upgraded to City and County of Honolulu standards. Historically, flooding has been a problem in the general area of Alternate Sites "B" and "C". The plan proposes to reduce, if not eliminate, the flood hazard, through a combination of mitigative measures. It should also be noted that the utilities will be implementing demand-side management (DSM) programs in the near future which may have a direct impact on the project.

1.6.8 Drainage

Alternate Sites "B" and "C" are both prone to flooding. Both are located on a 100 year flood plain. In addition, the parking lot for the facility will increase drainage problems. While Kalo Gulch, a drainage canal, runs through both of these alternate sites, it is not sufficient to discharge all the runoff during periods of heavy rains. Flooding may be mitigated in two ways.

The first is to construct a drainage channel adjacent to one that Campbell Estate plans to construct. Horita's Kapolei Golf Course development between Alternate Site "B" and Kapolei Villages is intended to serve as the initial repository for the district-wide flood drainage system for the Villages. From there, a controlled volume of flood water will be spilled into a planned 50-foot wide drainage easement, channeling the waters into a coral pit within NASBP property. Should Alternate Site "B" or "C" be selected, on-site retention ponds will be provided, and excess flood waters could be piped or channeled into a drainage channel constructed adjacent to the drainage channel from the golf course.

The second method for increasing drainage is to realign and improve Kaloι Gulch to increase its capacity. It has already been determined that Kaloι Gulch must be modified to be incorporated into the design of the facility.

Should either Alternate Site "B" or "C" be selected as the site for the proposed Kapolei Sports and Recreation Center, appropriate measures will be taken to provide adequate drainage for the facility.

It should also be noted that according to the City and County's Department of Public Works a drainage report should be submitted to The Drainage Section, Division of Engineering, for review and approval.

1.6.9 Lighting

All four alternate sites are adjacent to lands now under sugar cultivation. As such, there is a possibility that housing will be constructed, or at least considered, for these adjacent lands. If improperly designed, night lighting for the stadium and any of the playing fields may have undesirable effects on nearby housing. As such, the proposed Kapolei Sports and Recreation Center will be designed to incorporate sensitive lighting fixtures, and special arrangements will be made to train lights on playing fields so that neighboring properties are not disturbed. No high intensity lights will be used, and no lights will overshoot the stadium or playing fields.

Since Alternate Sites "B" and "C" are located near the airfield at NASBP, the height of the light poles for the facility must be considered. FAA has established requirements for erected objects near airfields, and height restrictions are included in the settlement agreement between the Navy and Campbell Estate. The facility will incorporate light poles of 100 ft. or less, thereby satisfying restrictions contained in the settlement agreement. The precise location of the stadium at either Alternate Site "B" or "C" has not yet been determined. Depending on the stadium location in relation to the Naval airstrip, FAA notification and approval may be necessary.

2.0 Description of Proposed Action

2.1 Project Overview

The initial assessment of project scope and planning issues includes a cursory review of several Alternative Sites within the Honouliuli-Ewa-Kapolei region. This region was targeted by the 1988 State Legislature because of the intent to establish the area as Oahu's "Second City," as well as having a relatively large amount of available land required to accommodate the size of the sports complex. (See Figure 1, Location Map in Appendix C, and Aerial Map in Appendix D.)

Campbell Estate's "Kapolei Long Range Master Plan," April 1990, was utilized as the principal document for basemapping purposes, as it was acknowledged to be the most comprehensive indicator of future, as well as current land uses for the region. The agricultural area generally bounded by (clockwise) Kunia Road, Fort Weaver Road, Mango Tree Road, Waimanalo Road, the eastern limits of HFDC's "Villages of Kapolei" and "Kapolei Knolls," and the H-1 Freeway was immediately determined to be the limits from within which the Alternative Sites were to be selected, due to its being "unclaimed" by both existing/planned developments. (See Figure 9, Roads and Highways in Appendix C.) Furthermore, this land area met the State Legislature's desire to have the facility located within the region of the "Second City."

The selection of Alternative Sites was concerned foremost with impacts on agricultural (sugar cane cultivation) operations. Since agricultural use for the general area is expected to continue until alternative land use proposals are developed, it was decided that sites along the periphery, having least impact on ongoing sugar cane production, was desired. (See Figure 2, Vicinity Map in Appendix C.)

Consideration of other factors included review of land use restrictions and encumbrances. These restrictions apparently impact on Alternate Site "C". Presently a sports stadium is not allowed at "C" and renewed negotiations and amendments may be necessary if Site "C" is selected. This restriction is the result of an agreement between Campbell Estate and the U.S. Department of the Navy relative to a certain zone beneath military aircraft flight patterns above the Kapolei area. All restrictions are binding to any successive owner. The resultant "Kapolei Long Range Master Plan" indicates land uses within this zone which are consistent with the agreement. A golf course development by developer Herbert Horita is scheduled for 1992, as a part of HFDC's "Villages" project; and a low-density residential use is indicated within the zone to the East of HFDC's "Villages 8" subdivision.

Another major concern involved existing and planned improvements for utilities and infrastructure. For the types of programs and activities intended for the sports and recreation center adequate water, sewer, drainage, electricity, and roadway improvements need to be provided.

Since most of the study area is without these improvements, only the acknowledged, formally proposed developments with definitive utilities improvements could be considered. Sites within the study area needed to be associated with regional improvements that were currently available, or at least proposed to be implemented, within a definitive time period. (See Figure 10, Ewa Plain Water Development Corp.- Water Facilities Map in Appendix C.)

Four Alternative Sites were identified for further study. These sites are indicated as Alternate Sites "A", "B", "C", and "D." Site encumbrance and existing/planned utility and roadway improvements are also indicated. (See Figures 4, 4A, 4B, and 4C, Ownership Maps and Figure 5, Existing/Planned Development Map in Appendix C.)

These Alternative Sites are further described in terms of utilities, roadway, drainage, site encumbrances, and land use/compatibility categories. They are intended to provide a cursory understanding of the support systems, possible means of tying into those systems, and a review of the immediate planning issues associated with each of the Alternative Sites. (For further detail, see Preliminary Analysis of Alternative Sites in Appendix A.)

2.2 Identification of Alternative Sites in Ewa

Four Alternative Sites in two general areas were identified (1) along the perimeter of agricultural areas in Campbell Estate's Kapolei Long Range Master Plan (Alternative Sites "A" and "D") and (2) beneath the Barbers Point Naval Air Station aircraft flight path (Alternative Sites "B" and "C"). These two areas were identified for examination as Alternative Sites for the following reasons:

2.2.1 Areas in Campbell Estate's Kapolei Long Range Master Plan

Campbell Estate's long range plan for the Ewa region ("Kapolei Long Range Master Plan," April 1990) was examined for areas proposed for development. Areas which were not indicated for developed land uses were considered available for the facility. These included the four alternative sites; Site "A" TMK 9-1-18:1, Sites "B" and "C" TMK 9-1-16:25, and Site "D" TMK 9-1-17:4 (See Figures 4, 4A, 4B, and 4C, Appendix C)

2.2.2 Barbers Point Naval Air Station Aircraft Flight Path

Also considered were the lands beneath the aircraft flight path extending over Campbell Estate property from Barbers Point Naval Air Station. In an agreement between Campbell Estate and the Navy, land uses beneath this flight path are restricted to limited residential development, golf course, parks, and other recreational activities. This agreement was entered into because of certain environmental concerns, including aircraft noise levels.

This limited development restriction made it a possible area for the subject facility. (See Letter and Settlement Agreement in Appendix I)

For Alternative Site "B," no residential development is allowed. For Alternative Site "C," limited residential development is allowed. For the first fifty (50) acres of Alternative Site "C" adjacent to Barbers Point Air Station, up to two (2) residences per acre is allowed. For the remainder of the Alternative Site "C" area, up to four (4) residences per acre is allowed.

There is a likelihood that residential development beneath the aircraft flight path may not be as desirable a land use as the other areas outside of the flight path. For this reason, the lands beneath the aircraft flight path were considered for the facility.

2.2.3 Project Description

The proposed facility includes a 5,000 seat stadium, four practice fields, two practice infield diamonds, a dormitory with kitchen/dining and meeting rooms, a multi-purpose building with training and weight rooms, lockers and showers, and administration offices, parking, and other training accommodations. All buildings and infrastructure within the project site will be constructed in accordance with established standards. In particular, the stadium will conform to standards for "assembly areas" as specified in the Building Code.

2.3 Uses of Facility

2.3.1 Public Uses

The Facility will be very useful for the general public. It is anticipated that public use will extend throughout most of the year. A number of possible public uses are listed below: (See Figure 2 in Appendix B)

1. Softball/Mountainball
2. Babe Ruth/Little League/Pony League
3. Touch, Flag, Pop Warner football

4. Interscholastic Baseball (OIA, ILH)
5. Soccer, Rugby
6. Tennis
7. Basketball
8. Walking, jogging
9. Picnicking
10. Use of meeting rooms
11. Use of dorm rooms by visiting neighbor island sports teams utilizing the Facility
12. Fairs and carnivals
13. Music festivals
14. Volleyball/badminton
15. "Kiddie" area (sandboxes, jungle gyms, slides, swings)
16. Skateboard and rollerskate areas
17. Kite flying

2.3.2 Professional Baseball Training Facility Uses

The proposed Facility will be constructed and owned by the State of Hawaii and may be used by professional baseball teams from Japan and the U.S. mainland approximately one to two months during their spring training period.

Japanese baseball teams have done some spring training in Hawaii but have been restricted by the inadequate facilities available. A survey and marketing study of Japanese professional baseball teams has indicated that one or more teams would simultaneously conduct spring training in an appropriately equipped Hawaii facility.

A conceptual layout has been prepared using the survey and marketing data from the Japanese baseball teams and also using information from similar mainland complexes. The types of facilities that could support up to two professional teams simultaneously are listed below: (See Figure 1, Appendix B)

1. One 5,000-seat stadium
2. Four practice fields
3. Two infield practice diamonds
4. Two pitching and batting cages and observation towers
5. Two sprint tracks
6. One multi-purpose building with training and weight rooms, lockers and showers, and administration offices
7. One dormitory with kitchen/dining and meeting rooms
8. Press facilities
9. Night lighting
10. Parking

A 70- to 75- acre site would be required.

Benefits to the State of Hawaii would accrue from several sources, including the publicity and possible broadcasting the operations could generate, the attraction of tourists to the Facility and to the State of Hawaii associated with the professional teams, tourists, and media.

2.4 Infrastructure and Roadways

Only Alternative Site "A" meets the project schedule (See Table A in Appendix K) set by the Legislature for construction completion by 1993.

2.4.1 Infrastructure

Only Alternative Site "A" will have the necessary water, sewer, and roadway improvements available by 1993. In fact, it has them currently available with minimal extensions to those systems. As of June, 1991, Oahu Sugar Co. is in the process of installing two pipelines for (nonpotable) irrigation water which run adjacent to Alternate Sites "B" and "C". One piping corridor runs along Mango Tree Road, and the other extends makai from Farrington Highway toward Mango Tree Road. According to OSCO officials, the water cannot be used for drinking purposes, and the pipes themselves cannot be used to carry drinking water because they do not satisfy the standards established by the Board of Water Supply. However, OSCO is willing to cooperate with any efforts to use the piping corridor to install potable water pipes.

2.4.2 Roadways

Only Alternative Sites "A" and "D" can have quick connections to major thoroughfares. Alternative Sites "B" and "C" will be 2,700 feet away from roads scheduled for completion in 1995. Moreover, these will be Kapolei Village subdivision roads and not major thoroughfares.

2.5 Project Costs

2.5.1 Off-Site Costs

Only Alternative Site "A" has minimal off-site costs. The other Alternative Sites do not have all supporting systems within reasonable proximity, and will therefore incur extensive off-site improvement costs. (See Appendix K for details of off-site costs.)

2.5.2 On-Site Development Costs

Detailed preliminary budget estimates for Alternatives Sites A, B, C & D have been prepared in consultation with the staff engineers of Mitsunaga and Associates. (See Table B, Appendix K for details of on-site development costs, improvements, and infrastructure costs for each alternative site.)

2.6 Development Timetable

Before construction can begin, development rights for the subject property must be purchased, and appropriate government approvals must be obtained. The land is currently owned by Campbell Estates so the State of Hawaii must negotiate with representatives of Campbell Estates for the purchase of land and development rights. However an agreement for the State to acquire land that includes Alternate Sites "B" and "C" has already been developed through the State condemnation process and final negotiations were completed in the summer of 1991. (See Appendix C Figures 15 & 15A)

2.6.1 Approvals Necessary

Necessary government approvals for the project include:

1. EIS acceptance
2. Amendment of the property's Development Plan designation from Agricultural to Public Facility
3. Changing the property's zoning from AG-1 Restricted Agriculture to Public Facility
4. Alternate Sites "B" and "C" are traversed by Kaloι Gulch, a drainage canal. The U.S. Army Corps of Engineers has jurisdiction over areas with surface water such as rivers, streams, lakes, wetlands, and shoreline areas. Since the selection of Alternate Sites "B" or "C" will impact Kaloι Gulch, a permit may be needed from the Army Corps of Engineers.
5. Proposed project would also require either a State Land Use Boundary Amendment to the Urban District or a State Special Use Permit (See LUC letter of 1/24/92, Appendix L)

2.6.2 Project Schedule

If all government approvals are obtained in a timely manner, the estimated date for start of construction is September 1993.

2.7 Evaluation of Alternative Sites

Refer to Appendix A, Preliminary Analysis of Alternate Sites and Evaluation Criteria.

3.0 Description of the Existing Environment

3.1 Ewa Development

Designated as Oahu's "Secondary Urban Center," the Ewa Plain has already begun to experience development, and it is expected that the character of the area may change completely within the next 25 year period. Whether located at Alternate Site "A", "B", "C", or "D," the proposed Kapolei Sports and Recreation Project should be considered not in isolation, but as an integral part of the overall development in the Ewa area.

The following is provided as a brief overview of expected development trends within the Ewa region.

No fewer than twelve housing developments are either underway or planned for ground breaking by 1994. According to Campbell Estate projections, approximately 40,000 units will be built by the year 2010.

The 890-acre "City of Kapolei" will include a 570-acre downtown area which is expected to contain more than five million square feet of commercial space when completed. In comparison, downtown Honolulu has approximately eight million square feet of commercial space on 75 acres. Campbell Estate is arranging for construction financing, with actual construction to begin in 1992.

Campbell Estate has also developed plans for an 880-acre Kapolei Business Park. Construction contracts for the first phase of 190 acres are expected to be awarded this year.

Finally, the 1,000-acre Ko Olina resort will include seven hotels with 4,000 rooms, 8,700 residential units, a marina, shopping areas, and another 18-hole golf course.

In summary, the urban development in the Ewa area will be nothing short of massive. The proposed Kapolei Sports and Recreation Project should be considered in light of the scale of this urbanization.

3.2 Geology

3.2.1 Subsurface Composition

Alternative Sites "A," "B," "C," and "D" are located on the Ewa Plain on the island of Oahu. The island of Oahu is of volcanic origin and is characterized by underlying basaltic flows. The Ewa Plain is an emerged coral reef formed during the Pleistocene Period when the ocean level was at a higher elevation. For the most part, the Ewa Plain is flat with a few isolated bluffs eroded by

Honouliuli Stream. It is underlain by calcereous material which has been modified over the millenia so that it is hard but extremely permeable.

In general, the Ewa Plain above an elevation of approximately 100 feet below mean sea level consists of caprock comprising sedimentary deposits that form a wedge which retards the seaward movement of fresh groundwater from the inland basaltic aquifer. At higher elevations the ground surface is made of alluvium and sedimentary deposits washed downslope over the millennia.

3.2.2 Volcanic Activity

The last phases of the Koolau and Waianae volcanoes occurred well over one million years ago. No danger from volcanic activity is expected at Alternative Sites "A," "B," "C" or "D."

3.2.3 Seismic Activity

According to the Uniform Building Code, the entire island of Oahu is within the Zone 1 area, where distant earthquakes may cause structural damage with fundamental periods greater than 1.0 second.

3.2.4 Topography

Alternate Sites "B", "C", and "D" are each generally level. Alternate Site "A" is sloped quite substantially.

3.2.5 Major Or Unique Features

Alternative Sites "A", "B", "C" and "D" are each under sugar cultivation. None of the sites contain any unique geologic feature of importance.

3.2.6 Soils

The Waianae Mountain Range to the north of each of the four Alternate Sites has experienced much soil erosion, and the soils in the lowland Ewa Plains developed in alluvium from basic igneous material. Soil classifications listed below are excerpted from the U.S. Department of Agriculture, Soil Conservation Service's Soil Survey of Island of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, August, 1972.

Alternate Site "A" consists of the following (see Figure 3, Appendix C):

- (a) Molokai Silty Clay Loam, 3 to 7% slopes (MuB)
Runoff is slow to medium, and the erosion hazard is slight to moderate.
- (b) Molokai Silty Clay Loam, 7 to 15% slopes (MuC)
Runoff is medium, and the erosion hazard is moderate. This soil occurs on knolls and sharp slope breaks.
- (c) Waipahu Silty Clay, 0 to 2% slopes (WZA)
Permeability is moderately slow. Runoff is slow to very slow, and the erosion hazard is none to slight.
- (d) Waipahu Silty Clay, 6 to 12% slopes (WZC)
Runoff is medium, and erosion hazard is moderate.

Alternate Sites "B" and "C" consist of the following (see Figure 3, Appendix C):

Honouliuli Clay, 0 to 2% slopes (HxA)
Permeability is moderately slow. Run off is slow, and the erosion hazard is no more than slight. The shrink-swell potential is high.

Alternate Site "D" consists of the following (see Figure 3, Appendix C):

- (a) Wailua Silty Clay, 0 to 3% slopes (WkA)
Permeability is moderate. Run off is slow, and the erosion hazard is no more than slight.
- (b) Helemano Silty Clay, 30 to 90% slopes (HLMG)
Permeability is moderately rapid. Runoff is medium to very rapid, and the erosion hazard is severe to very severe.
- (c) Waipahu Silty Clay, 0 to 2% slopes (WsC)
Permeability is moderately slow. Runoff is slow to very slow, and the erosion hazard is none to slight.
- (d) Kaloko Clay, Noncalcareous Variant (Kfb)
Permeability is slow. Runoff is ponded to very slow, and the erosion hazard none to slight.
- (e) Honouliuli Clay, 0 to 2% slopes, (HxA)
Permeability is moderately slow. Runoff is slow, and the erosion hazard is no more than slight. The shrink-swell potential is high.

3.3 Hydrology/Water Resources

3.3.1 Groundwater

Groundwater in the vicinity of Alternative Sites "A", "B", "C", and "D" occurs in two aquifers, the deeper (and higher quality) Waianae volcanic aquifer and the overlying (mostly brackish to salt water) coral aquifer. Materials of low permeability including marine clay and silt sediments, alluvium and weathered volcanics, separate the two aquifers and form a "caprock". Because of its low permeability, the caprock retards the flow of water between the two aquifers. This barrier may be described as an "aquitard" since these soils and clays are permeable, and there is hydraulic continuity between the Waianae aquifer and the coral aquifer. The light density, high head Waianae aquifer water flows through the aquitard into the coral aquifer to be mixed with the high salinity salt water. Discharge to the sea from the coral aquifer is unrestricted by an aquiclude or aquitard.

The Waianae aquifer is a source of potable fresh water supply and is recharged by infiltration from precipitation in the Waianae Range. The Ewa Plain lies outside the recharge area for the Waianae aquifer.

The coral aquifer is recharged by direct infiltration of rainfall on the Ewa Plain, by the seaward movement of groundwater from the Waianae aquifer, by infiltration of stream runoff, and by infiltration of irrigation water applied in excess of crop requirements. The majority of recharge can be attributable to upward leakage from the underlying Waianae aquifer. The coral aquifer consists of a thin lens of fresh to brackish groundwater which mixes with sea water as it approaches the shore. The movement of groundwater in the coral aquifer is seaward in a southwest direction.

Alternate Sites "A", "B", "C", and "D" lie within the Pearl Harbor Ground Water Control Area (GWCA), withdrawals from which are regulated by the State Board of Land and Natural Resources (BLNR). In 1980, BLNR certified the sustainable yield of the Pearl Harbor subareas within the Pearl Harbor GWCA at 225 million gallons per day (mgd). In 1984, the BLNR established three subareas within the Pearl Harbor GWCA: the Koolau subareas; the Waianae subareas; and the coastal caprock subarea. The sustainable yield for the Koolau subarea was set at 200 mgd. The Waianae subarea included the Waianae basal aquifer and was determined to have a sustainable yield of 25 mgd. At present, the Koolau subarea has an unallocated water resource of 1.70 mgd and the Waianae subarea has an unallocated water resource of 4.46 mgd.

It should be noted that according to the Board of Water Supply's Manager and Chief Engineer, "The developer will be required to obtain a water allocation from either the State Department of Land and Natural Resources (DLNR) or the

Campbell Estate, and the potable water requirements for the proposed project should be determined. Potable water main extensions will be required for Sites B & C along Waimanalo Road and nonpotable water should be used for irrigation and should be of equal or better quality than the underlying aquifer. The use of nonpotable irrigation water should be coordinated with the State Department of Health and DLNR and landscaping should utilize xeriscape principles to reduce irrigation requirements. Approved reduced pressure principle backflow prevention assemblies should be installed on the consumer side of the property line as close to the domestic water meter as physically possible and prior to any branch piping."

3.3.2 Surface Water

Alternative Sites "A", "B", "C", and "D" do not contain any perennial streams, ponds, or wetlands. However, Kaloi Gulch may be considered an "intermittent stream" (see Appendix A) and may therefore necessitate coordination with and approvals by The U.S. Army Corps of Engineers should there be any discharge of fill material or construction of drainage improvements in Kaloi Gulch.

3.3.3 Drainage

There are no constructed drainage systems on Alternative Sites "A", "B", "C", or "D", except for cane field ditches on these sites and Kaloi Gulch adjacent to Alternate Sites "B" and "C". Kaloi Gulch is a modified drainage channel that traverses the eastern portion of Alternative Site "B" and runs adjacent to the northeast corner of Alternative Site "C." Kaloi Gulch ultimately discharges into the ocean.

Kaloi Gulch has inadequate capacity to handle peak storm runoff. Storm waters presently flow over canefield land. However, a portion of existing flows percolate into the local groundwater via ground depressions.

3.3.4 Flooding

Alternate Sites "B" and "C" are within the 100-year floodplain (see Figure 7, Appendix C). This designation indicates an area where flood hazards conceivably occur once every 100 years. The project is not expected to change or adversely affect the floodway.

3.4 Air Resources

3.4.1 Climate

The weather for the general area which includes Alternate Sites "A", "B", "C", and "D" is constant and relatively dry, typifying conditions on Oahu's leeward

coastline. The most reliable climatic information for the general area is available from nearby Barbers Point Naval Air Station. This information, which represents a summary of some 30 years of regular observation, indicates that the Ewa area, in general, receives about 20 inches of rain a year. Most of this rain occurs between the months of November and April. Prevailing tradewinds, with an average velocity of nine knots, blow out of the northeast 85 percent of the time. Southwesterly (kona) winds blow for most of the remainder of the time (see Figure 3.1, Appendix E). During the year, temperatures usually range from 69 degrees F to 91 degrees F. The warmest monthly average is 80.7 degrees F, and coolest monthly average is 72.3 degrees F. The record high temperature is 93 degrees F, and record low is 53 degrees F. For more information, see Table 3.4.1.

3.4.2 Air Quality

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 for each of the regulated air pollutants for the period 1985 to 1989 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 Alternate Sites "A", "B", "C", and "D". 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 each of the four Alternate Sites has probably not been exceeded.

State and Federal AAQS summaries are presented in Table 3.4.2, Appendix E. Readings for particulate matter and sulfur dioxide at Barbers Point and Pearl City are presented in Table 3.4.2A, Appendix E.

While data indicate that there are no air pollution problems, Alternate Sites "A", "B", "C", and "D" are each under cane cultivation, requiring periodic burning. Sugar cane is burned in the fields prior to harvesting to remove unwanted foliage as well as to control rodents and insects. Sugarcane fields are generally harvested every two years. The major air pollution emissions associated with sugarcane burning include particulate, carbon monoxide, and volatile organic compounds.

In accordance with state air pollution control regulations, an agricultural burning permit must be obtained by a field operator before burning can be performed.

Burning cannot be done on "no burn" days when stagnant air conditions are expected to occur. If it is assumed that the remaining fields are harvested every other year and that about 60 acres are burned on a burn day, there would be about 20 days per year when burning will take place on fields nearby each of the Alternate Sites. Depending on field and meteorological conditions, smoke from the fires could potentially impact the project area.

Besides air pollution caused by the burning of sugarcane, several sources of industrial air pollution are located at Campbell Industrial Park, which is located at Barbers Point to the southwest of each of the Alternate Sites, at the following distances:

- (1) Alternate Site "A": 6 miles;
- (2) Alternate Site "B": 3 miles;
- (3) Alternate Site "C": 3 miles; and
- (4) Alternate Site "D": 5 miles.

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 each of the Alternate Sites most of the time, although southwesterly winds, occurring less than 5 percent of the time, will carry emissions toward the Alternate Sites.

3.5 Noise

Aircraft. The major source of noise in the Ewa area is the aircraft taking off from and landing at Barbers Point Naval Air Station (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. The NASBP AICUZ was first established in 1976, updated in 1984, and again in 1989. The 1989 AICUZ map is presented in Figure 3.5, Appendix C. Also presented is Figure 3.5A which depicts aircraft noise level patterns originating from commercial aircraft landing or taking off from nearby Honolulu International Airport (HIA), as such considers the cumulative noise effects from both NAS Barbers Point and HIA as indicated. It should be noted that Figure 3.5A is included as an appendix to the 1989 AICUZ Figure 3.5, Appendix C and is for informational purposes only and is not the Navy's official AICUZ map.

The noise descriptor currently used by federal agencies to assess

environmental noise is the Day-Night Average Sound Level (Ldn). The descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. Sound levels which occur during the nighttime hours of 10:00 p.m. to 7:00 a.m. are increased by 10 decibels (dB) prior to computing the 24-hour average by the Ldn descriptor.

Taken from the 1989 study, Ldn for each of the four alternate sites are as follows:

- (1) Alternate Site "A" - less than 55 Ldn;
- (2) Alternate Site "B" - 55-60 Ldn;
- (3) Alternate Site "C" - 60-65 Ldn for a portion of the site; 55-60 Ldn for the remainder of the site; and
- (4) Alternate Site "D" - less than 55 Ldn.

For purposes of comparison, Table 3.5, Appendix E indicates the allowable noise levels for various zoning districts on Oahu. 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.

Since alternate uses for each of the Alternate Sites may include residential use, certain federal noise standards may be of interest. 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. (See Table 3.5A, Appendix E)

Sugar cane operations. Noise is generated by equipment used during sugar cane harvesting and land preparation. As noted previously, harvesting typically occurs every two years. Operating 24 hours a day, the equipment includes bulldozers (push rakes) and clam shell cranes that load trucks. Land preparation for planting, usually occurring every six years, involves a sequence of operations such as harrowing, plowing, leveling, and stone removal.

According to the State Department of Health (DOH) noise regulations, sugar cane operations are allowed to generate 70 dBA for 10% of the time in any 20-minute period at the property line. However, the regulations also allow conditional permits for agricultural field preparation and harvesting, on the condition that 95 dBA is not exceeded at the property line.

Alternate Sites "A", "B", "C", and "D" are each now under sugar cane cultivation. Whichever site should be chosen for the project, the location of the portion of the existing sugar cane field which will remain after the completion of the project is unclear. Assuming, as a worst-case scenario, that the project and the remaining cane field share an essentially common property line, it is possible that a noise level of up to 95 dBA may be experienced at any of the alternative sites. Cane harvesting or land preparation would cause annoyance to project users. However, due to the rare occurrence of such activities, they should not cause a significant overall noise impact.

3.6 Hazards

Potential hazards associated with Alternate Sites "B" and "C" were identified by the U.S. Navy's Air Installations Compatible Use Zone (AICUZ) Study mentioned earlier. The study established safety zones, along with off-station noise contours associated with NASBP. The safety zones, termed "Accident Potential Zones" (APZ), were identified by the study as areas beyond runway clear zones which possess a significant potential for aircraft accidents. Accident Potential Zone I (APZ I), for example, represents land areas under flight paths having 5,000 or more annual aircraft operations.

An agreement was reached between the Navy and Campbell Estates on matters arising out of the AICUZ Study. The Navy agreed to purchase restrictive easements for \$6.5 million to obviate the need for Accident Potential Zones (APZs) on 750 acres of Campbell Estate Land. To the extent that land uses are consistent with the terms of the agreement, no APZ is necessary with respect to the land. Additionally, the restriction is binding to any successor, assignee, and subsequent owners of the subject property. Also with regard to restrictive use of Alternate Site "B" it should be noted that Site "B" is encumbered by easement 2278 (Area 5) filed under Land Court Application 1067. Site C is encumbered by easement 2280 and 2279 (Areas 3a and 3b, respectively) filed under Land Court Application 1067. (See Figure 1 in Appendix I for details.)

Alternate Sites "B" and "C" are affected by the AICUZ study. For Alternate Site "B", the proposed 5,000-seat capacity sports stadium and recreational facilities appear to be allowable. Although the proposed 100-foot high light poles appear to be allowable, lighting intensity and patterns may be subject to FAA and NASBP review and approval. (See "Relevant Land Use and Height Restrictions for the Four Alternate Sites" in Appendix I)

For Alternate Site "C", some of the proposed uses, activities and improvements appear to be allowable, but others appear not to be allowable. Specifically, "outdoor sports areas and spectator sports" are allowed, but "sports stadiums" appear not to be allowed. (See Appendix I)

Alternate Sites "A" and "D" are not affected by the AICUZ study.

3.7 Aesthetic Resources

Alternative Sites "A", "B", "C", and "D" are located in areas that have been under sugar cane cultivation for many years. There are no natural features of significant aesthetic value in any of these sites.

3.8 Agricultural Resources

Soils in Hawaii have been rated in terms of four classification systems: (1) Land Capability Grouping, (2) Agriculture Lands of Importance to the State of Hawaii, (3) Overall Productivity Rating, and (4) Proposed Land Evaluation and Site Assessment. These classification systems are discussed below.

- (1) *Land Capability Grouping by the United States Department of Agriculture Soil Conservation Service (SCS).*

This classification system rates soils according to eight levels, ranging from the highest classification level, I, to the lowest level, VIII. Alternate Soils in each of the sites are classified as follows:

- (a) Alternate Site "A": I, II, III, and IV
- (b) Alternate Site "B" and "C": I
- (c) Alternate Site "D": I, III, and VII

- (2) *Agricultural Lands of Importance in the State of Hawaii (ALISH), by the SCS, University of Hawaii (UH) College of Tropical Agriculture and Human Resources, and the State of Hawaii, Department of Agriculture.*

This system classifies lands into three categories: (a) "Prime" agricultural land which is land that is best-suited for the production of crops because of its ability to sustain high yields with relatively little input and with the least damage to the environment; (b) "Unique" agricultural land which is non-prime agricultural land that is currently used for the production of specific high-value crops; and (c) "Other" agricultural land which is non-prime and non-unique agricultural land that is of importance to the production of crops. Soils in each of the sites are classified as follows (See Figure 6, Appendix C.):

- (a) Alternate Site "A": Prime and Other
- (b) Alternate Site "B": Prime
- (c) Alternate Site "C": Prime and Other
- (d) Alternate Site "D": Most of site classified as Prime

(3) *Overall Productivity Rating, by the UH Land Study Bureau (LSB).*

This classification rates soils according to five levels, with "A" representing the class of highest productivity and "E" the lowest. Soils in each of the four sites are classified as follows:

- (a) Alternate Site "A": A and B
- (b) Alternate Site "B": B
- (c) Alternate Site "C": A and B
- (d) Alternate Site "D": A, B, D, and E

(4) *Proposed Land Evaluation and Site Assessment (LESA) System, by the State of Hawaii Land Evaluation and Site Assessment Commission*

The proposed LESA classification system rates agricultural lands based upon two characteristics: (1) The quality of the soil (Land Evaluation, or "LE"); and (2) Non-physical characteristics such as agricultural viability (Site Assessment, or "SA"). The LE ratings of the soils on each site are as follows:

- (a) Alternate Site "A": 92, 88, 81, and 74
- (b) Alternate Site "B" and "C": 87
- (c) Alternate Site "D": 93, 92, 87, 76, and 17

These soil-rating systems indicate that, overall, Alternate Sites "A", "B", "C", and "D" each comprised soils that are suitable for agriculture.

Each is located near markets and support services, and fully improved for crop production. However, the Ewa area has been designated by County and State plans as the Secondary Urban Center of Oahu. As such, a significant portion of the Ewa Plain has been redesignated from agricultural to urban uses.

Much of the land on the Ewa Plain is leased by the Estate of James Campbell to the Oahu Sugar Company (OSCO), subsidiary of Amfac/JMB Hawaii. Faced with a \$9 million loss in 1981 due to low sugar prices which were expected to continue, and expected withdrawals of sizable acreage from cane production, OSCO initiated a "survival plan." The plan included terminating the operations of one of its two mills and reducing the acreage under cultivation in order to increase economies of scale. Although the plan has been successful in reducing costs and increasing yields, the future of the company is uncertain.

Price supports for sugar were raised beginning in 1982 and have remained comparatively high, but there is a question whether this will continue. Other uncertainties impacting upon the economic viability of OSCO include the following: (1) Continued union support in reducing costs; (2) Adequate allocation of water to permit full irrigation of plantation lands; and (3) Retention

of sufficient land to permit reasonable economies of scale. Large failures in any of these areas would cause OSCO's demise. Furthermore, OSCO leases expire in 1995 and 1996. Thereafter, lease renewal terms are uncertain. The uncertainties in all of these areas cast a doubt over the ability of OSCO to continue operating indefinitely.

Furthermore, in the event of the closure of OSCO, the potential for diversified agriculture in Ewa is limited. Government policies directing much of Honolulu's future urban development to Ewa will discourage landowners from entering into the kind of long term lease agreements necessary for substantial diversified agricultural production. As such, the future of agriculture in Ewa appears to be limited.

While OSCO is a major employer, the economic impact on the County and the State of Hawaii would be relatively small. OSCO employed 410 people in 1990. In addition to 410 jobs, an estimated 463 indirect jobs would be lost (using the State employment multiplier of 1.13). Over the past 10 years, Oahu's job count has increased an average of nearly 7,000 jobs per year, indicating that the County's economy is large and strong enough to absorb a plantation closure. Additionally, the entire state is currently in the midst of labor shortage. With appropriate skills and/or training, workers directly and indirectly impacted by an OSCO closure could be absorbed elsewhere in the economy.

3.9 Biological Resources

3.9.1 Flora

Alternate Sites "A", "B", "C", and "D" are under sugar cane (saccharum officinarum) cultivation. Agricultural lands are dynamic systems, changing with the different stages of cultivation practices. Cane fields may vary from newly harvested, bare field to short 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*). Wild bitter melon (*Momordica charantia* var. *pavel*) and little bell (*Ipomoea triloba*) are locally common vines found along the margins of the fields. Scrub vegetation can be found along perimeter boundaries of cane fields. No threatened or endangered flora occur at Alternate Sites "A", "B", "C", or "D".

3.9.2 Fauna

For many years, Alternative Sites "A," "B," "C," and "D" have been under sugar cane cultivation, which 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 mongooses.

3.9.3 Unique Habitats

There are no unique habitats located within Alternate Sites "A", "B", "C", or "D."

3.10 Historical and Archaeological Resources

3.10.1 Historical

In 1793 Vancouver 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 necessities 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 only remaining sugar plantation in operation is Oahu Sugar Company. Each of the Alternate Sites is included in the total of 13,500 acres presently under cultivation.

3.10.2 Archaeological Resources

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.

The earliest detailed map of the area (Alexander, 1873) shows no habitation closer than the western edge of West Loch in the vicinity of Papapahu Point. The Monsarrat survey map of 1878 documents substantial settlement at the "Honolulu Taro Lands" in the Papapahu Point area, and it seems clear that in early historic times that was the focus of the population of Honouliuli ahupua'a. The amenities of that area, such as fishponds, taro lo'i, shellfish collecting, and salt drying would have focused population there in prehistoric times, and the name of that place must have secondarily come to apply to the entire ahupua'a.

A search for Hawaiian Land Commission Awards (L.C.A.) in the project area similarly showed no evidence of small private land holdings in the vicinity. The only land commission award in the vicinity is Royal Patent 6071, LCA 11216, Apana 8 to Miriam Ke'ahi-Kuni Kekau'onohi who was granted the ahupua'a of Honouliuli, 'Ewa, O'ahu by Kamehameha III on January 28, 1848.

The earliest archaeological study in Honouliuli by McAllister (1933) documented Site 146. "The 'Ewa coral plains contain many sites throughout the area. The greatest extent of old stone walls, particularly near the Pu'uloa Salt Works, belongs to the ranching period of about 75 years ago [circa 1858]." The only other early documented site in the vicinity was a heiau on Pu'u Kapolei.

In brief, very little is known about the prehistory of the immediate vicinity of Alternate Sites "A", "B", "C", and "D", but there is no indication of occupation or any other utilization. (See Appendix H, Archaeological Assessment of the Four Alternate Sites by DLNR Archaeological staff.)

3.11 Socioeconomic Resources

3.11.1 Demographic

The estimated population of the Ewa District in 1989 was 37,796, or about 4.5% of the total Oahu population. According to an earlier estimate, the distribution of

the population within this area was 34% in the Iroquois Point area (mostly military), 24% in Makakilo, 21% in Ewa Beach, 14% in Ewa, and 8% at Barbers Point area (Figures total more than 100% due to rounding).

By the year 2010, the City and County of Honolulu estimates that the population of the Ewa District will increase by over 300%, to 117,015, or about 12% of Oahu's total estimated population (see Table 3.11.1, Appendix E).

3.11.2 Age Distribution

As a whole, the population of Ewa is slightly younger than the population of the rest of the island. In 1980 the median age on Oahu was 28 years of age, as compared to Ewa's 25.6 years. However, the median age at Honokai Hale area was 33.1. By contrast, and as expected, the military bases contained much younger populations, with median ages of 22.1 at Naval Air Station Barbers Point and 21.3 in the East Ewa Beach/IPP Military Family Housing.

3.11.3 Ethnic Composition

Compared to the population of Oahu, Ewa has significantly higher proportions of Caucasians and Filipinos, and a moderately higher proportion of Hawaiians. On the other hand, there are proportionally fewer Japanese and Chinese. The Naval Air Station Barbers Point and East Ewa Beach/IPP Military Family Housing has large segments of Caucasians. There are high proportions of Filipinos in Ewa, Honokai Hale, Ewa Beach, Makakilo, and the East Ewa Beach/IPP Military Family Housing.

3.11.4 Education

According to the 1980 census, Ewa residents were slightly less educated than the islandwide community. Compared to the 21.7 percent of Oahu residents completing a four-year college, Ewa had only 12.4 percent. A higher proportion of college graduates also lived in Makakilo (18.4%), with the lowest proportion residing in the Ewa to Honokai Hale area (7%). The Barbers Point and Makakilo communities contained the greatest proportion of high school graduates, while the Ewa village community had the least.

3.11.5 Income Profile

As a whole, Ewa's mean family income in 1980 of \$21,000 was lower than the \$27,318 mean family income of Oahu. The mean family income ranged from \$10,377 at the Barbers Point Naval Air Station Barbers Point to \$26,059 in Makakilo.

3.11.6 Community Character and Lifestyle

The Ewa community has its roots in the plantation village. The lifestyle can be characterized as rural, but there is a trend toward an urban bedroom community, a transition to a suburban community. The Ewa district has been designated as Oahu's "Secondary Urban Center," and extensive development projects which have been completed, under construction, and planned can be expected to change the character of the district completely.

3.11.7 Housing and Household Size

According to estimates by the Department of General Planning, the Ewa Development Plan area in 1988 contained 9,945 housing units, or about 3.5% of the total Oahu housing stock of 280,692 units. Existing residential communities in the Ewa area include: Makakilo (2,700 units), Ewa Beach (3,465 units), Ewa Villages (900 units), West Loch Estates (68 units), Ewa Gentry (540 units), Honokai Hale/Nanakai Gardens (286 units), and Naval Air Station Barbers Point (850 military family housing units). Housing ownership in Ewa resembles the overall pattern for Oahu, where 49.8% of dwelling units are owner-occupied.

The average family size in Ewa is 3.96 persons per household, compared with 3.15 for Oahu as a whole. Crowded units, those occupied by more than 1.51 persons per room, are somewhat more common in Ewa than on Oahu in general. By this standard, 8.5% of homes in Ewa are determined to be crowded.

Planned developments within the Ewa area which would substantially increase the housing stock over the next 10 to 15 years include the following: Ko Olina Resort (5,200 units), expansion of the Makakilo area (3,817 units), Ewa Gentry (7,150 units), Ewa Marina (5,000 units), Kapolei Village (4,871 units), Kapolei Knolls (500 units), and West Loch Estates (1,500 units). The development of Ko Olina Phase II would provide a total of approximately 3,500 multi-family units, which will consist of 1,500 low density and 2,000 medium density apartments. Other planned developments within the "Second City" of Kapolei include the residential projects of the Department of Housing and Community Development at Laulani/Fairways Subdivision (1,850 units) and the Ewa Revitalization Project (1,130 units).

3.11.8 Employment Characteristics

Based on the 1980 Census, there are marked differences in labor force characteristics between the population of the Ewa District and the islandwide population. A relatively high proportion of Ewa residents in the labor force are employed in the armed forces, which employ 18% of the Ewa labor force

compared with 10% for the islandwide population. The Ewa labor force contains a higher proportion of blue collar workers (service, farm, precision, craft, repair, laborers) and a lower proportion of white-collar workers (managerial/professional, technical, sales, and administrative) than the rest of Oahu. The proportion of those in agricultural jobs in the Ewa district is three times as high as the general population. The 1980 unemployment levels were almost double that of the general population (8.0% versus 4.6%).

Employment projections for the Ewa Development Plan area reflect a major new employment center designated to be created in Ewa with the development of the Secondary Urban Center. Employment will be concentrated in the Kapolei Town Center, the James Campbell Industrial Park, and the Ko Olina Resort (See Table 3.11.8, Appendix E).

3.11.9 Economic Resources

3.11.9.1 Major Economic Generators

The major economic generators in the Ewa area are the following: the military at Barbers Point Naval Air Station, West Beach Resort Development, Campbell Industrial Park and Oahu Sugar. According to the 1980 census, there were about 6,170 jobs in the Ewa area. The military provided 3,445, or over half of the jobs. In the civilian sector, 2,500 jobs were provided at Campbell Industrial Park and 450 by Oahu Sugar Company.

Most of Ewa's past economic activity has been in the southern and eastern portions, centering on sugar and military activities. The easternmost part of Ewa includes U.S. Naval operations and the Iroquois Point housing along Pearl Harbor's West Loch. Barbers Point Naval Air Station is located on Ewa's southern shores.

Sugarcane cultivation has consumed the most land in Ewa. Several operations were consolidated in 1970 under operations of a single plantation, the Oahu Sugar Co., now one of two remaining Oahu plantations. In 1981, Oahu Sugar Co. had 18,000 acres under cultivation in Ewa and Central Oahu. The acreage has been reduced by about a third since then. Almost all of Oahu Sugar's lands are secured through leases which are due to expire in the mid-1990's.

Along the coast in 1958, the Estate of James Campbell, Ewa's largest non-governmental land owner inaugurated the Campbell Industrial Park, which now includes oil refineries and other industrial facilities. A total of 2,400 acres is approved for industrial use, of which approximately 1,200 acres have been developed to date.

3.11.9.2 Projections of Increased Employment

Several major projects have been planned which will result in a significant increase in the number of jobs in the Ewa area. These include: Barbers Point Deep Draft Harbor, Ko Olina, Kapolei Town Center, Ewa Marina, and the expansion of Campbell Industrial Park. In all, a total of 24,400 new jobs are expected to be created between 1988 and 2005. (See Table 3.11.9.2, Appendix E)

3.12 Infrastructure

3.12.1 Electricity

Electric power to the Ewa Plain area, including the vicinity of Alternate Sites "A", "B", "C", and "D", is provided by Hawaiian Electric Company (HECO). Existing power facilities that supply the Ewa area include the Kahe and Waiiau Power Plants. Overhead lines closest to each of the four Alternate Sites are as follows:

- (1) Alternate Site "A": 46 KV lines run along Farrington Highway.
- (2) Alternate Sites "B" and "C": 46 KV lines parallel to the NASBP mauka boundary.
- (3) Alternate Site "D": 46 KV lines run along Fort Weaver Road.

The HECO Environmental Department has noted that "HECO will provide power to the site from substations located outside of the development. New power distribution lines will be extended to the development from HECO's distribution system in the vicinity of the Alternate Sites." Impacts upon each alternate site are as follows (see Location Map, Figure 1A): Sites B and C will be impacted by the preferred alignment of the proposed Waiiau-CIP 138kV Part 1 transmission lines.

Site A will be impacted by an alternative alignment of the proposed Waiiau-CIP 138kV - Part 2 transmission lines.

Site D will not be impacted by any of the alternative alignments of the proposed Waiiau CIP 138kV - Parts 1 and 2 transmissions lines.

3.12.2 Telephone

Hawaiian Telephone Company provides existing service to the Ewa area.

3.12.3 Water

Alternate Sites "A", "B", "C", and "D" are presently served by an agricultural water system maintained by Oahu Sugar Company. The major regional

infrastructure in the area consists of the following: (1) A 30-inch main along Farrington Highway that transmits water to Makakilo, Campbell Industrial Park, and the Waianae Coast; and (2) A 16-inch transmission main along Fort Weaver Road. The distances of each of the four Alternate Sites from the nearest water main are as follows (See Figure 10, Appendix C):

- (1) Alternate Site "A" is adjacent to the Farrington Highway water main.
- (2) Alternate Site "B" is 3,300 feet away from the Farrington Highway water main.
- (3) Alternate Site "C" is 6,300 feet away from Farrington Highway water main.
- (4) Alternate Site "D" is adjacent to the Fort Weaver Road water main.

Alternate sites "A", "B", "C", and "D" are situated within the Pearl Harbor Groundwater Control Area. Proposed uses of waters from the Pearl Harbor aquifer are regulated by the Commission on Water Resource Management, which implements the State Water Code. The Commission requires a developer application for a water allocation permit from the Pearl Harbor Groundwater Control Area. Sustainable yield is one of the requirements addressed during the permit process.

3.12.4 Sewage

The Ewa area is largely sewered by the City and County's Honouliuli Wastewater Treatment Plant (WWTP), which lies adjacent to Barber's Point Naval Air Station (NASBP) (See Figure 12, Appendix C). The primary treated wastewater is disposed of via the Barbers Point Ocean Outfall.

The present capacity of the WWTP is 25 MGD. However, there are plans for the facility to increase its capacity by 13 MGD. According to the City and County's Division of Wastewater Management, "No new connections will be allowed to the Honouliuli WWTP until at least 1993 when the expansion of the primary treatment capacity from 25 mgd to 38 mgd is completed. The recently issued 301(h) permit, however, includes a limitation of the mass emission rate (MER) discharged from the plant. The City intends to apply for an increase in the MER. If the request is denied, connections cannot be allowed until the end of 1995 when secondary facilities are projected to be constructed."

Relative to the four Alternate Sites, there is an 8 inch gravity sewer line along Farrington Highway which would need to be increased in capacity, a 30 inch gravity sewer line along the North boundary of NASBP, and an 18 inch gravity sewer line along Fort Weaver Road (See Figure 12, Appendix C).

- (1) Alternate Site "A" is adjacent to the Farrington Highway sewer line.
- (2) Alternate Site "B" can be connected to the sewer line running along the NASBP boundary. This can be done by extending a new sewer lateral to the planned roadway corridor, continuing West to HFDC's planned alignment of a 50 foot wide drainage easement bordering NASBP flight path boundary, extending South to the existing 30-inch main. This connection would require approximately 2,600 feet of main.
- (3) Alternate Site "C" can be connected to the sewer line running along the NASBP boundary in a similar fashion as Alternate Site "B". Alternate Site "C" would require approximately 2,000 feet of main.
- (4) Alternate Site "D" is adjacent to the Fort Weaver Road sewer line. However, a new sewer force main of approximately 3,500 feet could be required as an alternative solution, should the tie into the existing line be denied due to maximum capacity.

It should also be noted that according to the City and County's Department of Public Works, sewer adequacy is contingent upon the submittal of separate "Application for Sewer Connection" forms for each of the four proposed sites and subsequent approval by the Division of Wastewater Management. At present, the DWM is not issuing any sewer connection approvals since the Honouliuli Wastewater Treatment Plant (WWTP) is approaching its design capacity of 25 mgd. However, they are currently re-evaluating the projected wastewater flow requirements of the WWTP. A more definite determination of sewer connection status will be possible after the re-evaluation is completed. According to the Land Planning Division of Campbell Estate the analysis of present use should be supplemented with an analysis of the adequacy of existing and proposed lines to handle the anticipated load from the facility, prior to construction.

3.12.5 Solid Waste Disposal

Whether located at Alternate Site "A", "B", "C", or "D", the solid waste from the facility will be transported by a private firm to the H-Power Plant at Campbell Industrial Park, Waimanalo Gulch Landfill and/or the Waipahu Incinerator for disposal. Provisions for alternate systems will also be included in the project design. (See Appendix A)

3.12.6 Roads

- (1) Alternate Site "A" is bounded by three roads: the H-1 Freeway along the North (Mauka) Boundary; Kunia Road along the East; and Farrington

Highway along the South (Makai) frontage. Access to the site is via Farrington Highway (See Figure 9, Appendix C).

- (2) Alternate Sites "B" and "C" are not served by any road except for Waimanalo Road, a "cane haul road" maintained by Oahu Sugar Co., that runs along South (Makai) boundary of Alternate Site "B" and along the North (Mauka) boundary of Alternate Site "C" (See Figure 9, Appendix C).

HFDC plans to construct a two-lane improved roadway within a 56-foot wide R.O.W. to serve Kapolei's Villages 4, 5, and 6, by 1995. This roadway is to be along the planned roadway corridor which passes along the South (Makai) boundary of Alternate Site "B" and along the North (Mauka) boundary of Alternate Site "C". Since future extension toward Ewa Marina has not been confirmed, there is a possible need to include within the project scope a portion of roadway improvements, for approximately 2,000 to 2,700 feet, to tie into HFDC's roadway below Villages 4, 5, and 6. However, the roadway is intended to be only a subdivision-community roadway, and access for the facility is not plausible.

Still another alternative is the State DOT-suggested secondary highway extending from a point on Farrington Highway, North (Mauka) of Alternate Sites "B" and "C" through the cane fields. This may be one of the most costly and least attractive alternatives to consider, and will compete with on-going sugar cane cultivation by Oahu Sugar Co. Timing is contingent upon continued growth in Ewa.

- (3) Alternate Site "D" is adjacent to Fort Weaver Road, which is to the east of the site. Mango Tree Road, a "cane haul road" runs along the South (Makai) boundary of the site (See Figure 9, Appendix C).
- (4) It should also be noted that according to the Director of the State Department of Transportation, "The applicant must coordinate with affected developers on appropriate internal roadway connections and other infrastructure, commit to participate in regional roadway improvements on a prorata share basis, and submit plans for roadway construction work within the State highway right-of-way for our review and approval."

It has also been suggested by the City and County Department of Transportation Services that all necessary improvements be completed prior to the opening of the facility at the chosen site.

3.13 Public Services

3.13.1 Police Protection

The Ewa district is under the jurisdiction of the Pearl City Police Station. According to the City and County Police Department's Support Services Bureau, "A major concern of our department is how the anticipated increase in population will affect traffic conditions in the area. We are in support of measures, such as those proposed in the Traffic Analysis for alternatives A, B, C, and D, that will minimize the effects of increased traffic. Also, the collective result of the proposed Sports and Recreation Center and other developments that will make up the "second city" in Ewa will definitely increase the demand for police services provided by the Pearl City District. Our ability to adequately meet the greater demand will depend primarily on the availability of funds for sufficient police personnel, equipment, and facilities: another district and two substations. The increase in facilities and workforce is essential to our efforts to proactively prepare for the needs of the growing community: more beats, more patrol units, effective traffic management within and to/from Ewa, and the necessary support staff."

3.13.2 Fire Protection

Fire protection for Alternate Sites "A" and "D" would be provided by the Waipahu Fire Station. Fire protection for Alternate Sites "B" and "C" would be provided by the Ewa Beach Fire Station.

The Fire Department is currently planning a number of improvements to accommodate the development in the Ewa area. The Campbell Industrial Park Fire Station is scheduled to begin construction in late 1992. Ewa Tenny Village Fire Station is listed as beyond six years and the relocation of the Ewa Beach Fire Station to the entrance of the Ewa Marine Project is not scheduled until 1995.

3.13.3 Hospital/Medical

The Waipahu Clinic offers a variety of services for physical, occupational and speech therapy, public health nursing, children's health, mental health, and Hansen's disease. The newly constructed St. Francis Hospital-West near the northern end of Fort Weaver Road provides hospital emergency services. The Moanalua Kaiser Medical Center also provides these services.

The Waipahu Fire Station contains an ambulance unit which serves Pearl City, Waipahu, Ewa Beach, Makakilo and parts of Waianae. Also eight-hour services are provided to the Makakilo Fire Station by the Waipahu unit.

3.13.4 Bus Service

Public transportation service on the Island of Oahu is supplied by the City and County of Honolulu's Department of Transportation Services. Bus service is typically dependent upon demand and the availability of resources.

The nearest bus routes to the Alternate Sites are as follows:

- (1) Alternate Site "A": Bus runs on Ft. Weaver Rd., adjacent to the site. The bus route would have to be modified to enter the site since it cannot stop on the roadway.
- (2) Alternate Sites "B" and "C" are each adjacent to a "cane haul" road approximately one mile from the nearest bus route.
- (3) Alternate Site "D" is adjacent to Old Ft. Weaver Rd., which is served by an existing bus route.

3.14 Recreational Facilities

Alternate Sites "A", "B", "C", and "D" are each located in the Ewa area. Recreational facilities in the Ewa area are designated as regional parks, community parks, neighborhood parks, and beach/shoreline parks. Regional parks are large recreational complexes. Community parks serve an approximate population of 10,000 people and normally include playfields, courts, and a recreation building. Neighborhood parks serve an approximate population of 5,000 people and normally include playfields, courts, and a comfort station. Beach/shoreline parks are day use parks primarily for swimming, sunbathing, and picnicking. (See Figure 14 in Appendix C.)

The existing parks in the Ewa area are as follows:

Existing Parks in the Ewa Area

| <u>Name</u> | <u>Type</u> | <u>Size (acres)</u> |
|--------------------------|--------------|---------------------|
| Barbers Point Beach Park | beach | 11.73 |
| Ewa Beach Community Park | community | 13.253 |
| Ewa Beach Park | beach | 4.88 |
| Ewa Mahiko Park | neighborhood | 10.00* |
| Kahe Point Beach Park | beach | 4.47 |
| Kamokila Park | community | 5.888 |
| Kapolei Park | regional | 28.024 |
| Makakilo Community Park | beach | 18.26* |
| Makakilo Park | neighborhood | 4.013 |

| <u>Name</u> | <u>Type</u> | <u>Size(acres)</u> |
|----------------------------------|-----------------|--------------------|
| Mauna Lani Neighborhood Park | neighborhood | 4.013 |
| Onuela Beach Park | beach | 30.00 |
| Puuloa Playground | neighborhood | 4.34 |
| West Beach Shoreline Park, north | beach | 10.00* |
| West Beach Shoreline Park, south | beach | 18.26* |
| West Loch Shoreline Park | community/beach | 39.00 |

Source: Department of Parks & Recreation, Index of Oahu Parks and Facilities, 1988. (unless otherwise noted updated via comments on DEIS 1992)

**Final Environmental Impact Statement Kapolei Town Center, Appendix H, August 1988.*

In addition, a number of parks are planned and proposed for the Ewa area, as follows:

Proposed for the Ewa Area
(Sites Undetermined)

Makakilo Neighborhood Park #1
Makakilo Neighborhood Park #2
Honokai Hale District Park
Waimanalo Village Community Park
Waimanalo Village Neighborhood Park
Makakilo District Park
Ewa Beach District Park
Ewa Beach Neighborhood Park
Nanikai Gardens Neighborhood Park

Parks Planned for the Ewa Area

West Beach Neighborhood Park
Kapolei Regional Park
Renton Village District Park
Ewa Mahiko District Park

Source: Final Environmental Impact Statement Kapolei Town Center, Appendix I, August 1988. (updated via comments on DEIS 1992)

Alternate Sites "A" and "D" are near the Waipahu/Pearl City area. The parks in that area are as follows:

Existing Parks in the Waipahu/Pearl City Area

| <u>Name</u> | <u>Type</u> | <u>Size (acres)</u> |
|---------------------------------|--------------|---------------------|
| Crestview Community Park | community | 8.143 |
| Hans L'Orange Park | neighborhood | 6.928 |
| Hoaeae Community Park | community | 10.103 |
| Makalena, Ted Golf Course | golf course | 150.759 |
| Manana Kai Neighborhood Park | neighborhood | 4.351 |
| Manana Neighborhood Park | neighborhood | 4.015 |
| Pacheco Playground | neighborhood | 4.590 |
| Pacific Palisades Entrance Park | urban | 4.246 |
| Pacific Palisades Playground | community | 8.420 |
| Pearl City Kai Playground | community | 6.670 |
| Pearl City Recreation Center | district | 9.947 |
| Waiau District Park | district | 31.428 |
| Waiau Kai Gardens Park | urban | 2.346 |
| Waiau Neighborhood Park | neighborhood | 4.574 |
| Waipahu Cultural Garden Park | regional | 48.228 |
| Waipahu Field | district | 13.825 |
| Waipahu Uka Park | neighborhood | 4.0 |
| Waipio Neighborhood Park | neighborhood | 4.675 |
| West Loch Park | neighborhood | 6.025 |

Source: Department of Parks & Recreation, Index of Oahu Parks and Facilities, 1988.

3.15 Commercial Facilities

Commercial areas in the Ewa district include the Ewa Beach Shopping Center and the professional service complex (approximately 73,000 square feet of commercial retail floor space and 13,500 square feet of office space).

4.0 Relationship to Land Use Plans and Policies

4.1 Overview

This section will describe the proposed action in relation to the applicable policies and controls of the Federal, State, and City and County agencies.

4.2 Federal Plans, Policies, and Controls

The Ewa Villages, which are just east of Alternate Sites "B" and "C", are being considered for placement on the Federal Register of Historic Places, pursuant to the Code of Federal Regulations (CFR), (36 CFR 65.2). In May 1990, a representative of the U.S. National Park Service (NPS) interviewed interested parties and agencies to gather information on the appropriateness of this nomination. The NPS will be acting on the nomination in 1991. As mentioned earlier, the City and County of Honolulu is also proposing the preservation of the Ewa Villages by incorporating provisions for and implementing design guidelines for the rehabilitation of structures in the Villages.

The Ewa Villages eligibility for nomination to the National Register of Historic Places triggers the applicability of Section 106 of the National Historic Preservation Act (NHPA). The review process must be completed prior to the irrevocable commitment of any resources. To proceed with compliance under Section 106, the State Historic Preservation Office (SHPO) has been contacted for assistance. While the Ewa Villages are in the general area east of Alternate Sites "B" and "C", there are no present Federal plans, policies, or controls which will restrict the building of a sports and recreation center.

4.3 State Plans, Policies, and Controls

A number of State plans, policies, and controls provide guidelines for development within the State of Hawaii. These guidelines include the Hawaii State Plan, State Functional Plans, and the State Land Use Law.

4.3.1 The Hawaii State Plan, Chapter 226, Hawaii Revised Statutes

The Hawaii State Plan is a guide for the future long-range development of the State which identifies goals, objectives, policies, and priorities that are to be pursued. The overall theme of the Hawaii State Plan incorporates the following major components:

- Individual and family self-sufficiency
- Social and economic mobility
- Community or social well-being

Specifically the Hawaii State Plan details objectives and policies in various areas such as population, the economy, physical environment, facility systems, socio-cultural advancement, agricultural lands, and fiscal management. The Kapolei Sports and Recreation project is consistent with many of the goals and policies of the Hawaii State Plan.

4.3.1.1 Population H.R.S. Section 226-5

The Kapolei Sports and Recreation project, as a public sports facility, fulfills this policy of directing population growth toward Ewa, decentralizing public facilities, and increasing recreation opportunities for Hawaii's people.

4.3.1.2 Economy H.R.S. Section 226-6

Interest has been expressed by professional Japanese baseball teams to use the facility as a training site. This use will directly generate revenues from fees for the use of the facility and money spent by players and coaches. Hawaii's visitor industry will also indirectly benefit by reports of the baseball teams by the media in Japan.

4.3.1.3 Agriculture H.R.S. Section 226-7

All four Alternate Sites "A", "B", "C", & "D" are located in the State Agricultural District. Each Alternate Site consists of soils that are appropriate for agricultural use. However, the project will not significantly affect the economic viability of OSCO nor limit the growth of diversified agriculture. As such, the project is not inconsistent with the major thrust of the agricultural portion of the Hawaii State Plan and the State Agricultural Functional Plan, which are intended to preserve the economic viability of sugar and pineapple and to promote the growth of diversified agriculture.

4.3.1.4 Water H.R.S. Section 226-16

The development of water sources for the development area is contingent upon approval by the DLNR, as the development area is within the Pearl Harbor Groundwater Control Area. Non-potable water will be utilized to irrigate the playing fields, open space, and landscaped areas of the project site. Facilities for the development, transmission, storage, and distribution of potable and non-potable water requirements of the project will be installed by the State.

4.3.1.5 Transportation H.R.S. Section 226-17

The project will incorporate measures that encourage the use of mass transit and multiple ridership of private vehicles. These measures are intended to minimize traffic impacts and address the State Plan objective of integrated

multi-modal transportation systems. In addition, the proposed Ewa Region Highway Transportation Master Plan, of 1992, identifies roadway improvements to accommodate forecasted traffic for planned growth in the Ewa region. However, it should be noted that as of February 1992 the State Department of Transportation had not completely accepted or agreed with the Master Plan.

4.3.1.6 Housing H.R.S. Section 226-19

Various housing projects in the Ewa area are intended to address the need for affordable housing. These include the Ewa Villages project, which is just east of Alternate Sites "B" and "C", and Kapolei Villages, just west of Alternate Sites "B" and "C". The majority of the housing units will be targeted for the affordable income group. Alternate Sites "B" and "C" are in an area which allows housing, but high noise levels may cause annoyance. It should be noted that this level of noise is allowable for a sports or recreation facility. As a public facility the proposed Kapolei Sports and Recreation Project would not be inconsistent with housing objectives of the State Plan.

4.3.2 Hawaii State Functional Plans

The Hawaii State Plan, Chapter 226, HRS, provides a long-range guide for Hawaii's future and establishes a statewide planning system. The 1984 State Legislature, by concurrent resolution, adopted twelve Functional Plans to serve as guidelines for the State of Hawaii as a means of furthering the Hawaii State Plan. The project conforms with the applicable objectives and policies of these Functional Plans.

4.3.2.1 State Recreation Functional Plan

The State Recreational Functional Plan assesses present and potential demand and supply of outdoor recreation resources to guide State and County agencies in the following areas:

- acquiring or preserving lands of recreation value,
- providing adequate recreation facilities and programs, and
- ensuring public access to recreation areas.

The plan identifies objectives, policies, and implementing actions in the areas of land use planning, conservation and resource management, recreation facilities and programs, access and coordination. Those objectives relating to recreation facilities and programs are relevant to the Kapolei Sports and Recreation Center in the following ways:

- a) The project is comprehensive in that it looks at developing a sports complex. Project efforts focus on multi-use facilities, but also are

directed towards those sports activities currently which have no or minimal facilities in the area and on Oahu.

- b) This facility addresses the requirements of a physical plant, and also includes programmatic requirements, as well as land and financial resources.
- c) While capital improvement expenditures will launch the Kapolei Sports and Recreation Center, operating funds are equally important to the success of this facility. It seems that it will be equally important to have sports personnel who are specialists in their field of expertise, as well as recreation generalists and to maintain the facility in top shape throughout the year.

The State Recreation Functional Plan implies that sports needs are met as long as recreational needs are accommodated and vice versa.

4.3.2.2 State Water Resources Development Plan

The Kapolei Sports and Recreation Center project will reduce the availability of water within the Pearl Harbor Ground Water Control Area. The potable water demand associated with the facility is less than that associated with sugar cane cultivation, which it will replace.

4.3.2.3 State Energy Plan

Located at any of the Alternate Sites, the facility will be located in an easily serviceable and concentrated area that is adjacent to existing urban development. It is expected that the developer will use the most energy efficient design/technologies to meet the energy requirements of the State Energy Functional Plan and more specifically Section 226 - 18 HRS. These include efficient energy-saving technologies which can be used in the facility's air conditioning, water heating, and lighting systems. High efficiency motors and chillers, a heat recovery system, and energy-saving metal halide and fluorescent lamps and ballasts are among the items which will be considered in the design of the facility.

4.3.2.4 State Health Plan

As a recreational public facility the project will further the goals of the State Health Plan in promoting exercise and wellness. Also users of the Kapolei Sports and Recreation Center will have access to health care facilities available at the Kaiser Permanente Leeward Clinic and the St. Francis Medical Center-West. The Leeward Clinic is designed to serve the basic health needs of those residing in the area from Waipahu to Waianae, and offers a variety of services

such as physical, occupational and speech therapy, public health nursing, children's health, Hansen's disease, and complete mental health. Recently completed, the St. Francis Hospital-West facility offers a comprehensive emergency and ambulatory care center, a full service hospital, a major medical office building, a medical education center, day care facilities, and a "wellness" center.

4.3.2.5 State Agricultural Plan

While the project will result in a decrease of the availability of agricultural land, the area to be withdrawn will not adversely affect the agricultural industry. The anticipated impact on overall agricultural activity on Oahu and the State will be insignificant.

4.3.2.6 State Transportation Plan

Traffic management and ride-share plans are being proposed as part of the Kapolei Sports and Recreation project. The plans are expected to contribute significantly towards meeting the State Transportation Plan objective of developing a balanced, multi-modal transportation system. Ewa residents will remain in Ewa for sports and recreation activities and Oahu residents will be Ewa bound to use the facility. Therefore, the project is also expected to divert town-bound traffic and thereby minimize the potential for greater interchange congestion. Times of maximum use of the facility will be early evening and weekends and therefore will not have a major impact on traffic during normal peak work schedules, as shown in the traffic impact assessment in Appendix F.

4.4 State Land Use Law

The State Land Use Commission has classified all land in the state into one of four classifications: Urban, Rural, Agricultural, and Conservation. All four project sites lie on agriculturally zoned parcels of land and within the agricultural district boundaries, as shown in Figure 11, Appendix C. (See also LUC letter of 1/24/92, Appendix L)

4.5 The General Plan for the City and County of Honolulu

This is the island's statement of long range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of Oahu. This plan is a guide in eleven areas of concern, such as housing, population, and public safety.

One area of concern addressed in the General Plan is culture and recreation. The use of leisure time is addressed through objectives and policies encouraging visual and performing arts and the provision of a wide range of

recreational facilities and services that are readily available to all residents. The objectives and policies which are relevant to this project include:

- a) The provision of a wide range of recreational facilities and services that are readily available to all residents of Oahu. (Objective D)
- b) Development and maintenance of a system of regional parks and specialized recreation facilities. (emphasis added) (Policy 2)
- c) Provide for recreation programs which serve a broad spectrum of the population. (Policy 7)
- d) Encourage the after-hours, weekend, and summertime use of public schools facilities for recreation. (Policy 10)

The Kapolei Sports and Recreational Facility is consistent with objectives and policies which encourage providing a system of specialized recreation facilities and services which is accessible to Oahu's residents.

The City's Recreation Long Range Plan also called for organized and supervised physical recreation which emphasized sports and physical fitness with service requirements to include "standard and competition level playfields, courts, jogging trails and fitness courses", etc. (City and County of Honolulu Department of Parks and Recreation 1980). The Kapolei Sports and Recreation Center is a consolidated attempt to provide these service requirements. While individual parks may have one or a limited number of these facilities, this proposed facility will be a sports complex developed to ensure that a multitude of these service requirements are provided in a comprehensive fashion.

4.5.1 Population

This section is concerned with growth management of the island's population and promoting a balance between society, the economy and the environment. Also indicated by this section is a policy concerning growth of a "secondary urban center located in the West Beach to Makakilo area, which will relieve developmental pressures in the urban fringe areas". The Kapolei Sports and Recreation Project is consistent with providing appropriate public facilities consistent with the population goals in the area.

4.5.2 Natural Environment

This section is directed at preserving and enhancing the natural environment of Oahu. It should be pointed out that as with any urban development, it would be difficult to preserve the natural environment with the type of facility proposed.

4.5.3 Housing

Affordable housing with support facilities, as well as housing proximity to employment, recreation, and commercial centers are the concerns stated within this section. The Kapolei Sports and Recreation Center does not satisfy affordable housing goals of this plan. However, as a public facility it does provide support facilities and recreation facilities to the various housing developments in the area. Also, it will occupy only 75 acres of land which may have been used for housing. The dwelling unit-per-acre ratio for those lands beneath the NASBP flight path may preclude residential development desirability, from a marketing perspective. Alternate Sites "B" and "C" are located beneath that flight path.

4.5.4 Transportation and Utilities

The consideration for efficient and cost-effective transportation means is emphasized in this section, as well as the provision for a variety of modes of transportation. Utility objectives include adequate amounts of water, efficient waste disposal systems, and high levels of service for all utilities. The proposed project is designed to accommodate efficient access roads and utility systems to adequately serve the community. In addition, ride-sharing and provisions for the bus service will be encouraged.

4.5.5 Physical Development and Urban Design

This section focuses on the coordination and sequencing of "all new developments" and the preservation of the physical character of older developments. This section also encourages development of the secondary urban center in the West Beach-Makakilo area while maintaining cooperation with government agencies and those affected in the sugar industry. The Kapolei Sports and Recreation Center project is planned to be developed as part of the overall phased withdrawal of sugarcane fields.

4.6 Relevance to Other Social Services and Policies

A contemporary perspective on recreation related plans recognizes the interrelationship of the goals of sports and recreation programs and those goals associated with health and human services. Common to both are plans and programs whose purpose includes the development of mentally and physically healthy citizens. Concerns which range from maintaining a cohesive family unit to a wholesome and healthy form of stress reduction for all types of people can be linked to organized sports and recreational activities for the spectator and/or participant. As such, a first class multi-purpose community-based facility assists in furthering the goals of multi-service social service programs related to

children, teenagers, and young adults as well as senior citizens in the Ewa area.

4.7 Ewa Development Plan

The Ewa Development Plan of the City and County of Honolulu acts as a detailed structure of General Plan objectives for that area. The Plan area includes the area of coral plain from Waipahu and Pearl Harbor boundaries to Nanakuli. Regarding development of the Ewa area, the updated and current amended General Plan (Resolution 88-404, CD-1, FD-1) states:

"Encourage 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" (Section on Population, Objective C, Policy 2 of the General Plan).

The Kapolei Sports and Recreation project is consistent with the Plan objectives and design elements. At present, the four Alternate Sites are designated mainly as Agricultural. Other designations within the project site boundaries of Alternate Sites "B" and "C" may include public facility and residential uses based on a land bank agreement reached between the State and Campbell Estate in April, 1991. (See Figure 8A in Appendix C) It should also be noted that according to Chief Planning Officer of the Department of General Planning for the City and County of Honolulu, "The Development Plan Special Provisions for Ewa do not specifically address design considerations for a sports complex. Therefore, an amendment to the Special Provisions may be needed to address the issue of height controls for the project. In addition to the possibility of a text amendment to the Special Provisions, the proposed project would require a Development Plan Public Facilities Map amendment to add a symbol for a site determined park which is to be funded within the next six years."

4.8 County Zoning

The City and County of Honolulu has designated all four Alternate Sites as agriculture in the Ewa Development Plan and has zoned all four Alternative Sites AG-1 Restricted Agriculture (See Figure 11, Appendix C). Therefore, Development Plan and Zoning amendments are necessary prior to construction.

4.9 Environmental Impact Statement (Chapter 343, HRS)

Prior to the implementation of the Kapolei Sports and Recreation Center Project, acceptance of a Final EIS is required. This document has been prepared in accordance with Chapter 343 of the HRS, which outlines the

necessary procedures and contents of an EIS. The Chapter states, "environmental review at the state and county levels shall ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations." The requirement of an EIS was determined pursuant to Chapter 200 of Title 11, Administrative Rules, Subchapter 5b.

4.10 State Land Bank

The Department of Land and Natural Resources has designated all agriculturally designated lands west and north of the Ewa Village part of the East Kapolei project (State Land Bank). An agreement signed by the State and Campbell Estate in April 1991 provides for the purchase of additional land by the State for the State Land Bank. The agreement restricts use of the designated portions of land for 16 years for agriculture, housing, public facility (emphasis added), golf course, and neighborhood convenience such as gas stations and convenience stores. The state is restricted from using these land banked portions for industrial and regular and/or major commercial projects for 16 years from the date of the agreement. This means that the non-land banked portions of Campbell Estate will have exclusive industrial and commercial use within the present boundaries of Campbell Estate until the year 2007.

Alternate Sites "B" and "C" fall within the landbanked portion. Since the proposed Kapolei Sports and Recreation Center is a public facility, both Alternate Sites "B" and "C" meet conditions for the restricted uses within the 16 year period. However, specific designation of any of the landbanked portions of land for public facility and the Kapolei Sports and Recreation Center as the acceptable public facility would be an issue which would need to be resolved between the various State agencies such as the Office of State Planning (OSP), Department of Land and Natural Resources (DLNR), and Department of Accounting and General Services (DAGS). (See Figures 15 & 15A, State Condemnation of Ewa Land in Appendix C)

According to the Land Planning Division of Campbell Estates, "Sites B and C, which are within the condemnation area, should be given priority consideration for a sports facility consistent with the restrictive easements affecting those sites." It should be pointed out that the Housing Finance and Development Corporation (HFDC) will be assisting in the master planning of land adjacent to The Villages of Kapolei and will also be involved in the siting of the proposed Kapolei Sports and Recreation Center. It should also be noted that given the existing maps and pending land use boundary changes which are continually under review in this geographic area, the exact location or site boundaries of the ultimate project site may be slightly changed. The definitive location and/or configuration of the ultimate project site will be done at the master planning/site design stage.

5.0 Alternatives to the Proposed Action

5.1 No Action Alternative

A "no action" alternative would result in continuation of existing conditions for the project site. The site would most likely continue to be used for sugarcane cultivation for the near future, until 1995, whereupon uncertainties about lease agreement and renewal remain in question. However, as surrounding development occurs as part of the Secondary Urban Center, agriculture activities would probably be eliminated.

Advantages of the "no action" alternative are few. These advantages include: no further expenditures of resources required by public and private agencies; continued sugarcane cultivation of the site; and no adverse impacts on the project site generated by development.

The primary disadvantage of this non-project alternative would be the absence of an Ewa community and West Oahu based Sports and Recreation Center with a unique mix of recreation opportunities to suit families of all income levels and residents of all ages. Additionally, losses resulting from this alternative would include lost recreation and employment opportunities, as well as lost tax revenues from food and beverage businesses within the facility and surrounding commercial enterprises that would arise to service facility participants.

5.2 Alternatives to Ewa

Since Oahu has the largest population of all the islands, it would provide the largest base of public users. The large site required makes it necessary to consider rural areas such as Ewa and Central Oahu where large open non-committed areas are available, and where disruption of existing uses can be minimized. Ewa offers more possibilities than Central Oahu as far as satisfying the need for a large area not targeted for development which at the same time meets infrastructure requirements. Ewa is more centrally located than Central Oahu in terms of accessibility by roadways from major population centers. The creation of the new Kapolei second city in Ewa and the linkages to existing population centers offered by H-1, H-2, and H-3 make Ewa more readily accessible to a larger percentage of Oahu residents than Central Oahu. Since the outdoor functions and nature of activities to take place at the Facility necessitate good weather, the lower median rainfall of Ewa makes it preferable over Central Oahu.

5.3 Other Alternatives

It should be noted that the Department of General Planning of the City and County of Honolulu suggested possibility of a joint development between the City and State that would include: (1) the selection of a mutually agreed upon site; (2) a shared funding agreement scheme; (3) an agreed upon site plan; (4) a joint maintenance agreement; and (5) an agreement on whom will be responsible for conducting the public recreation programs for the complex. The City and County of Parks and Recreation also suggested a jointly planned facility between State of Hawaii and City and County of Honolulu.

6.0 Irreversible and Irretrievable Commitments of Resources & the Relationship Between Short-Term Uses and Long-Term Productivity

6.1 Irreversible and Irretrievable Commitments of Resources

Development of the Kapolei Sports and Recreation Center will involve the irretrievable loss of certain environmental and fiscal resources. However, the costs associated with the use of these resources should be evaluated in light of recurring benefits to the residents of the region, City and County of Honolulu, and State of Hawaii.

It is anticipated that the construction of the proposed project will commit the necessary construction materials and human resources for project completion. Human resources will be committed to planning, design, engineering, construction, landscaping, as well as sales, management, service offices, and maintenance. Reuse for much of these materials and resources is not practical. Although labor is compensated during the various stages of development, labor expended for project development is non-retrievable.

The project will result in a commitment of the land for an indefinitely long period, and it is unlikely that the land would revert to another use. Commitment for the project will foreclose the use of the land for agriculture. The ultimate development of the project area will alter approximately 75 acres of the Ewa Plain, irreversibly committing the site to recreational uses resulting in an irretrievable loss of prime agricultural land. However, sufficient prime agricultural lands remain to accommodate all projected agricultural requirements, including those of the Oahu Sugar Company.

The general appearance of the project site will be changed significantly and altered from its present rural, agricultural character.

The proposed project will result in increased traffic volumes traveling to and from the project site, thus decreasing the efficiency of the vicinity roadways, and subsequently, creating vehicular pollution emissions particularly during peak hours of use in the early evenings on weekdays and all day on weekends. However, noise quality will be minimally affected by the development, and similar to air quality, will remain in compliance with State standards.

6.2 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

No short-term exploitation of resources resulting from development of the project site will have long-term adverse consequences. The appearance of the project site will be altered from its present open sugarcane and rural residential environment to that of a completed Sports and Recreation Center. Although the

Kapolei Sports and Recreation Center will probably lose some of its rural and historic character, the intent of the plan is to retain and/or restore as much of the original quality as possible. This will be accomplished by sensitivity to design and respect for residents of the existing villages, and visual integration with the surrounding area.

Long-term community gains resulting from development of the project include public and some commercial uses which will likely benefit future Ewa homeowners, the landowners, private businesses, and the City and State governments. As the project develops, its productivity in terms of generating tax revenues will increase. Income from recreational activities, personal, and excise taxes are expected to more than offset expenses associated with expanded public facilities and services to meet the requirements of the development and population growth.

7.0 Summary of Unresolved Issues

7.1 Terms of Lease

Sites "A" and "D" are located on land leased by the Estate of James Campbell to OSCO. To date, there has been no indication as to whether the lease between the Estate and OSCO will or will not be renewed in 1995.

7.2 Land Acquisition

As indicated previously, Alternate Sites "A", "B", "C", and "D" were owned by the Estate of James Campbell. In April 1990, the State signed an agreement for acquisition of property from the Estate to be landbanked for 16 years. This property included Alternate Sites "B" and "C" which were purchased by the State after negotiations were completed in July 1991. (See Figures 15 and 15A, Appendix C) Alternate Sites "A" and "D" will require purchase of land from Campbell Estates if either of these sites is selected.

7.3 Transportation

Scheduling and financing of the proposed roadway improvements, as described in the Traffic Analysis (Appendix F) will be resolved through the on-going planning process with the State Department of Transportation and major developers of the Ewa region.

7.4 Private Use

The proposed Kapolei Sports and Recreation Center is a public facility and as such is primarily for public use. Private use arrangements will have to be determined by the State Department of Accounting and General Services (DAGS), the agency responsible for the administration of the facility.

8.0 Parties Consulted for the EIS Draft

8.1 Federal

U.S. Department of Agriculture, Soil Conservation Service
U.S. Naval Air Station Barbers Point
U.S. Department of the Interior, Fish and Wildlife Service
Federal Aviation Administration, Flight Standards District Office

8.2 State

Housing Finance and Development Corporation
Land Use Commission
Office of State Planning
Department of Business, Economic Development & Tourism
Department of Land and Natural Resources
Department of Agriculture
Department of Health
Department of Human Services
Department of Transportation
Office of Environmental Quality Control
U.H. Environmental Center
State Historic Preservation Office
UH College of Tropical Agriculture and Human Resources
Legislative Reference Bureau
Stadium Authority

8.3 City and County of Honolulu

Department of General Planning
Department of Land Utilization
Department of Transportation Services
Department of Public Works
Department of Housing and Community Development
Building Department
Board of Water Supply
Fire Department
Police Department
Department of Parks and Recreation

8.4 Individuals and Organizations

Waipahu Neighborhood Board No. 22
Ewa Neighborhood Board No. 23
Friends for Ewa
Waipahu Business Association
Oahu Sugar Company

Estate of James Campbell
Historic Hawai'i Foundation
Hawaiian Electric Company Inc.
Outdoor Circle
Sierra Club
GTE Hawaiian Telephone Company
Representative Paul Oshiro
Representative Annelie Amaral
Senator Mike Crozier
Senator Norman Mizuguchi
Oahu Metropolitan Planning Organization
Carol A. Ferguson (Land Evaluation and Site Assessment)

Appendix A

Preliminary Analysis of Alternative Sites

Evaluation Criteria

Development Plans and Proposals

Impact on The Profitability of Oahu Sugar Company

Impacts Associated with Sugar Operations and Mitigation Measures

ALTERNATIVE SITE "A"

UTILITIES

WATER

1. Available: Board of Water Supply system, 1-30" concrete cylinder pipe and 1-20" C.I. pipe water mains, within adjacent Farrington Highway R.O.W.
2. Source: "Kunia 228 Reservoir," 1.5 M.G. capacity for potable; must drill/tap into ground water supply for irrigation uses.
3. Potential: New 12" potable water service line, to connect to existing 20" C.I. water main. Excavation, hook up and roadway patching estimated for 1 day completion; 2 days absolute maximum. Minimal disruption to vehicle traffic expected.

SEWER

1. Available: C&C 8" gravity sewer line, within adjacent Farrington Highway R.O.W.
2. System: Collection areas include residential subdivision Makai of H-1 Freeway, between Kunia Road and Waikele Stream; commercial and light industrial districts along Farrington Highway and Makai to West Loch, Pearl Harbor; terminating at "Kunia Pumping Station," and eventually feeding to Honouliuli STP via Fort Weaver Road/Geiger Road.
3. Potential: New sewer lateral, to connect to improved (currently 8") sewer line. Minimal disruption to vehicle traffic expected.

ROADWAYS

1. Site bounded by H-1 Freeway along Mauka (North) boundary; Kunia Road along East; Farrington Highway along Makai (south) frontage; and adjacent agricultural (sugar cane) operation along West boundary.
2. Access to site is appropriately via Farrington Highway due to H-1 Freeway off-ramp and Kunia Road being restrictive (volume and vehicular speed), and their being physically inaccessible (elevated above site).
3. Considerations:
 - A. Impacts onto Farrington Highway and junction at Kunia Road.
 - B. Impacts onto Kahi Mohala and St. Francis Medical Center West.

- C. Farrington Highway is 2-lane roadway and in need of resurfacing.
- D. Possible access frontage could be considered inappropriate, due to configuration and layout of roadway network. May need to consider feeder road from Farrington Highway at a point west of Kahi Mohala site, involving bridging over Honouliuli Stream.

DRAINAGE

- 1. Site drains toward and under Farrington Highway, and leads into Pearl Harbor's West Loch. Major drainage way adjacent to the site, in West direction, runs from Honouliuli Gulch Mauka of H-1 Freeway to Honouliuli Stream, through the City and County's "West Loch Golf Course".
- 2. Potential: Although on-site retention ponds will be provided, excess flood waters should be piped or channeled into the adjacent drainage system.

SITE ENCUMBRANCES

- 1. Site is owned by Campbell Estate, and currently leased to Oahu Sugar Co. for sugar cane cultivation. Lease agreement terminates in June 1995; Oahu Sugar Co. will be accorded first rights for continued lease agreement with the Estate.
- 2. Should Oahu Sugar Co. continue with sugar cane cultivation operations, alternative means for accommodating cane hauling, irrigation and harvesting will need to be provided, and damages to Oahu Sugar Co. for "lost income" may be due.
- 3. Grading and cane burning, and pesticides/fertilizer applications will impact activities and improvements at the training facility.

LAND USE/COMPATIBILITY

- 1. Existing Land Use: Agricultural (sugar cane cultivation).
- 2. Adjacent Land Uses, Current: Agricultural (sugar cane cultivation) to the West; improved roadways (H-1 Freeway to the North; Kunia Road to the East; Farrington Highway to the South).
- 3. Adjacent Land Uses, Planned (Including Site): C&C Department of Parks and Recreation is proposing a regional sports and recreational complex ("Honolulu Youth Sports Facility") which is larger in scope and scale than the proposed Professional Baseball Training Facility. This may appear to be in conflict with the recreational opportunities aspect of the State's proposal. The apparent differences lie in the C&C's proposal to incorporate a more comprehensive, diverse recreational

complex for public use, as opposed to the State's proposal of ultimately targeting selected user groups and its tourism/economic development opportunities.

4. Regional: Residential subdivision across Kunia Road, to the East; medical/psychiatric facilities across Farrington Highway (St. Francis Medical Center West, Kahi Mohala).

ALTERNATIVE SITE "B"

UTILITIES

WATER

1. Available: Board of Water Supply system, 1-30" concrete cylinder pipe, within Farrington Highway R.O.W. Approximately 3,300 feet away from site.
2. Source: Campbell Estate currently developing new water wells in mountains above Makakilo for future City of Kapolei and other Ewa developments; having a difficult time in adequate water source development. Must drill/tap into ground water supply for irrigation uses.

Considerations: Horita's Kapolei Golf Course development will necessitate drilling/tapping into ground water supply for irrigation uses; perhaps co-develop with golf course. Golf course planned for 1992 completion, according to HFDC.

3. Potential: New 12" Potable water service line, possibly installed simultaneously with Kapolei Golf Course development (1992 completion).

SEWER

1. Available: C&C 30" gravity sewer line along North (Mauka) boundary of NAS Barbers Point, feeding into Honouliuli STP. Sewer line is within a 15' wide City and County sewer easement that is also within a 100' wide roadway corridor owned by Campbell Estate.
2. System: Makakilo sewer line, scheduled for upgrades with future development of Ewa plains.
3. Potential: New sewer lateral extending to planned roadway corridor; continue West to HFDC's planned alignment of 50' wide drainage easement bordering NAS Barbers Point flight path boundary (Compatible Land Use Map), extend South (Makai) to existing 30" sewer main. Approximately 2,600 feet of main.

ROADWAYS

1. None currently serving site, except for Waimanalo Road, a "cane haul road" maintained by Oahu Sugar Co., along South (Makai) boundary of site.
2. HFDC plans to construct a 2-lane improved roadway within a 56-foot wide R.O.W. to serve Kapolei's Villages 4, 5 and 6, by 1995. This roadway is to be along the planned roadway corridor which passes along the South (Makai) boundary of the site. Since future extension toward "Ewa Marina" has not been confirmed, there is a possible need to include within the

project scope a portion of roadway improvements, for approximately 2,700 feet, to tie into HFDC's roadway below Villages 4, 5, and 6. However, the roadway is intended to be only a subdivision/community roadway, and access for the facility is not plausible.

An alternative to this action is to improve Waimanalo Road toward the East until it meets Mango Tree Road at a point North (Mauka) of Tenney Village. Both roads are utilized by Oahu Sugar Co., as "cane haul roads," and may be incompatible as major users will be competing for access. Both roads are currently private roads, and not accessible.

Still another alternative is the State DOT-suggested secondary highway extending from a point on Farrington Highway, immediately North (Mauka) of the candidate site, through the cane fields. This may be the least attractive and one of the most costly alternatives to consider, and will compete with on-going sugar cane cultivation by Oahu Sugar Co. Timing is contingent upon continued growth in Ewa.

3. Considerations: Pending traffic analyses, may need to consider 2 traffic lanes in the same egress direction, to handle peak volume. May lead to a necessity for adding traffic lanes to HFDC's 1995 roadway below Villages 4, 5, and 6, widening Fort Barrette Road to H-1 Freeway, and adding controlled intersections enroute.

Alternatives involve high roadway construction or improvement costs, and require extensive planning, coordination, marketing, and approving processes. It may appear that utilization of HFDC's Villages 4, 5, and 6 roadway, with modifications, is the most practical alternative to be pursued.

However, with due consideration for HFDC's roadways within Villages of Kapolei as being intended for subdivision/community use, it appears that as a major thoroughfare to service the baseball training facility, it may not be a plausible alternative. Other major thoroughfares should be considered, but none is available in the foreseeable future.

DRAINAGE

1. Horita's Kapolei Golf Course development is intended to serve as the initial repository for the "Villages" district-wide flood drainage system. From there, a controlled volume will be spilled into a planned 50-foot wide drainage easement, channeling flood waters into a coral pit within NAS Barbers Point property. This drainage easement borders NAS Barbers Point flight path boundary (Compatible Land Use Map), along its western periphery.

2. Potential: Although on-site retention ponds will be provided, excess flood waters could be piped or channeled into a drainage channel, constructed adjacent to the HFDC-constructed drainage channel.
3. Considerations: Kaloi Gulch, an "intermittent stream" draining the greater area of the sugar cane fields below Puu Makakilo, runs within and through the eastern portion of the site. Kaloi Gulch passes between Varona Village and Tenney Village and then to the East of NAS Barbers Point, eventually reaching the sea at Oneula Beach Park. As an alternative, Kaloi Gulch could be considered for handling excess flood waters from the Baseball Training Facility complex.

On the other hand, flood waters from the uplands coursing through Kaloi Gulch may impact upon the candidate site, and channel improvements in the form of realignment and channeling will be necessary, and could possibly be integrated into the facility development.

It should be noted that according to the Assistant to the Commander of Naval Base Pearl Harbor, "The proposed drainage plan for both Sites "B" and "C" is to provide on-site retention ponds, with two alternatives to handle excess runoff: either a connection to the Kapolei Golf Course (Villages of Kapolei Regional Drainage Plan); or to a realigned and improved Kaloi Gulch. The complete drainage studies for the Villages of Kapolei or the Ewa Gentry and Ewa Marina developments should be revised to include the runoff contribution from this proposal if the appropriate study has not accounted for the proposed area. The Navy would request assurances from the developer and the State that NAS Barbers Point will not experience any runoff or flooding greater than it has experienced historically without the proposed developments. Also for Alternate Sites "A" and "D", we would recommend that the potential drainage discharge and non-point source pollution impacts into West Loch and nearby wildlife refuge be addressed."

SITE ENCUMBRANCES

1. As part of the settlement agreement between the U.S. Navy and the Campbell Estate, land use restrictions were agreed to. The restrictions are binding to any successor, assignee, and subsequent owners. See LAND USE/COMPATIBILITY, paragraph 5.
2. Site is owned by Campbell Estate, and currently leased to Oahu Sugar Co. for sugar cane cultivation. Lease agreement terminates in June 1995; Oahu Sugar Co. will be accorded first rights for continued lease agreement with the Estate.

Waimanalo Road, a "cane haul road" immediately adjacent to and contingent with the site, is used by Oahu Sugar Co. and is a part of their lease agreement with Campbell Estate. The

apparent most practical roadway access, linking with HFDC's roadway serving Villages 4, 5, and 6, will be directly conflicting with Waimanalo Road if existing sugar cane operations continue until lease termination, in June 1995.

3. Kalo'i Gulch, running within and through the eastern portion of the candidate site, will necessitate flood water transmission, and major earthwork improvements.
4. Should Oahu Sugar Co. continue with sugar cane cultivation operations, alternative means for accommodating cane hauling, irrigation and harvesting will need to be provided, and damages to Oahu Sugar Co. for "lost income" may be due.
5. Grading and cane burning, and pesticides/fertilizer applications will impact activities and improvements at the training facility.

LAND USE/COMPATIBILITY

1. Existing Land Use: Agricultural (sugar cane cultivation).
2. Adjacent Land Uses, Current: Agricultural (sugar cane cultivation).
3. Adjacent Land Uses, Planned: Horita's Kapolei Golf Course along western boundary; 4-lane secondary highway linking "City of Kapolei" and "Ewa Marina" below southern (Makai) boundary; 4-lane State DOT-suggested secondary highway bisecting Ewa plain, from Makakilo uplands, along eastern boundary.

Campbell Estate's "Kapolei Long Range Master Plan," April 1989, indicates a continued agricultural (sugar cane cultivation) land use on the Alternative Site. South (Makai) of the site, opposite the future roadway connecting the City of Kapolei and Ewa Marina, land use is indicated as principally residential, with public facility, commercial/office, and park uses immediately adjacent to the East. That principally residential land use is not a part of the current HFDC "Villages of Kapolei" project.

It should also be noted that upon selection of the final site, if "B" is the site, there must be considerations of any potential conflict caused by the development of Site "B" with the City's proposed rapid transit system alignment in Ewa. Eventual development of Alternative Site B for this sports complex, will need to take into consideration accessibility to a rapid transit station in order to reduce traffic congestion and parking requirements.

4. Regional: NAS Barbers Point to the South, Villages of Kapolei and City of Kapolei to the West.

5. In accordance with the settlement agreement between the U.S. Navy and Campbell Estate, the uses, activities and improvements proposed for the Professional Baseball Training Facility appears consistent with the Compatible Land Use Map ("CLUM") and its allowable uses. Proposed 5,000-seat capacity (maximum) sports stadium and recreational facilities appear appropriate. Proposed 100-foot high light poles appear allowable; however, lighting intensity and patterns may be subject to FAA and NAS Barbers Point review and approval.

ALTERNATIVE SITE "C"

UTILITIES

WATER

1. Available: Board of Water Supply system, 1-30" concrete cylinder pipe, within Farrington Highway R.O.W. Approximately 6,300 feet away from site.
2. Source: Campbell Estate currently developing new water wells in mountains above Makakilo for future City of Kapolei and other Ewa developments; having a difficult time in adequate water source development. Must drill/tap into ground water supply for irrigation uses.

Considerations: Horita's Kapolei Golf Course development will necessitate drilling/tapping into ground water supply for irrigation uses; perhaps co-develop with golf course. Golf course planned for 1992 completion, according to HFDC.

3. Potential: New 12" potable water service line, possibly installed simultaneously with Kapolei Golf Course development (1992 completion).

SEWER

1. Available: C&C 30" gravity sewer line along North (Mauka) boundary of NAS Barbers Point, feeding into Honouliuli STP. Sewer line is within a 15' wide City and County sewer easement that is also within a 100' wide roadway corridor owned by Campbell Estate.
2. System: Makakilo sewer line, scheduled for upgrades with future development of Ewa plains.
3. Potential: New sewer lateral extending to planned roadway corridor; continue West to HFDC's planned alignment of 50' wide drainage easement bordering NAS Barbers Point flight path boundary (Compatible Land Use Map), extend South (Makai) to existing 30" sewer main. Approximately 2,000 feet of main.

ROADWAYS

1. None currently serving site, except for Waimanalo Road, a "cane haul road" maintained by Oahu Sugar Co., along North (Mauka) boundary of site.
2. HFDC plans to construct a 2-lane improved roadway within a 56-foot wide R.O.W. to serve Kapolei's Villages 4, 5 and 6, by 1995. This roadway is to be along the planned roadway corridor which passes along the North (Mauka) boundary of the site. Since future extension toward "Ewa Marina" has not been confirmed, there is a possible need to include within the

project scope a portion of roadway improvements, for approximately 2,000 feet, to tie into HFDC's roadway below Villages 4, 5, and 6. However, the roadway is intended to be only a subdivision/community roadway, and access for the facility is not plausible.

An alternative to this action is to improve Waimanalo Road toward the East until it meets Mango Tree Road at a point North (Mauka) of Tenney Village, plus a new trunk to extend to the candidate site. Both roads are utilized by Oahu Sugar Co., as "cane haul roads," and may be incompatible as major users will be competing for access. Both roads are currently private roads, and not accessible.

Still another alternative is the State DOT-suggested secondary highway extending from a point on Farrington Highway, immediately North (Mauka) of the site, through the cane fields, plus a new trunk to extend to the site. This may be the least attractive and one of the most costly alternatives to consider, and will compete with on-going sugar cane cultivation by Oahu Sugar Co. Timing is contingent upon continued growth in Ewa.

3. Considerations: Pending traffic analyses, may need to consider 2 traffic lanes in the same egress direction, to handle peak volume. May lead to a necessity for adding traffic lanes to HFDC's 1995 roadway below Villages 4, 5, and 6, widening Fort Barrette Road to H-1 Freeway, and adding controlled intersections enroute.

Alternatives involve high roadway construction or improvement costs, and require extensive planning, coordination, marketing, and approving processes. It may appear that utilization of HFDC's Villages 4, 5, and 6 roadway, with modifications, is the most practical alternative to be pursued.

However, with due consideration for HFDC's roadways within Villages of Kapolei as being tended for subdivision/community use, it appears that as a major thoroughfare to service the baseball training facility, it may not be a plausible alternative. Other major thoroughfares should be considered, but none is available in the foreseeable future.

DRAINAGE

1. Horita's Kapolei Golf Course development is intended to serve as the initial repository for the "Villages" district-wide flood drainage system. From there, a controlled volume will be spilled into a planned 50-foot wide drainage easement, channeling flood waters into a coral pit within NAS Barbers Point property. This drainage easement borders NAS Barbers Point flight path boundary (Compatible Land Use Map), along its western periphery.

2. Potential: Although on-site retention ponds will be provided, excess flood waters could be piped or channeled into a drainage channel, constructed adjacent to the HFDC-constructed drainage channel.
3. Considerations: Kaloi Gulch, an "intermittent stream" draining the greater area of the sugar cane fields below Puu Makakilo, runs adjacent to the Northeast corner of the site. Kaloi Gulch passes between Varona Village and Tenney Village and then to the East of NAS Barbers Point, eventually reaching the sea at Oneula Beach Park. As an alternative, Kaloi Gulch could be considered for handling excess flood waters from the Baseball Training Facility complex.

On the other hand, flood waters from the uplands coursing through Kaloi Gulch may impact upon the site, and channel improvements in the form of realignment and channeling may be necessary, and could be possibly integrated into the facility development.

SITE ENCUMBRANCES

1. As part of the settlement agreement between the U.S. Navy and the Campbell Estate, land use restrictions were agreed to. The restrictions are binding to any successor, assignee, and subsequent owners. See LAND USE/COMPATIBILITY, paragraph 5.
2. Site is owned by Campbell Estate, and currently leased to Oahu Sugar Co. for sugar cane cultivation. Lease agreement terminates in June 1995; Oahu Sugar Co. will be accorded first rights for continued lease agreement with the Estate.

Waimanalo Road, a "cane haul road" adjacent to the candidate site (between 300' to 500' from site), is used by Oahu Sugar Co. and is a part of their lease agreement with Campbell Estate. The apparent most practical roadway access, linking with HFDC's roadway serving Villages 4, 5, and 6, will be directly conflicting with Waimanalo Road if existing sugar cane operations continue until lease termination, in June 1995.

3. Kaloi Gulch, running adjacent to the Northeast corner of the site, will necessitate flood water transmission, and earthwork improvements.
4. Should Oahu Sugar Co. continue with sugar cane cultivation operations, alternative means for accommodating cane hauling, irrigation and harvesting will need to be provided, and damages to Oahu Sugar Co. for "lost income" may be due.
5. Grading and cane burning, and pesticides/fertilizer applications will impact activities and improvements at the training facility.

LAND USE/COMPATIBILITY

1. Existing Land Use: Agricultural (sugar cane cultivation).
2. Adjacent Land Uses, Current: Agricultural (sugar cane cultivation).
3. Adjacent Land Uses, Planned: Horita's Kapolei Golf Course to the Northwest; 4-lane secondary highway linking "City of Kapolei" and "Ewa Marina" above northern (Mauka) boundary; 4-lane State DOT-suggested secondary highway bisecting Ewa plain, from Makakilo uplands, immediately to the North; residential subdivision to the West; 50-foot drainage easement and channeling immediately adjacent to western boundary.

Campbell Estate's "Kapolei Long Range Master Plan," April 1989, indicates a principally residential land use on the site, with public facility, commercial/office, and park use immediately adjacent to the East. North (Mauka) of the Candidate Site, opposite the future roadway connecting the City of Kapolei and Ewa Marina, land use is indicated as continued agricultural (sugar cane cultivation).

HFDC's "Villages of Kapolei" is not associated with the planned residential development indicated on the Long Range Master Plan.

4. Regional: NAS Barbers Point to the South, Villages of Kapolei and City of Kapolei to the West.
5. In accordance with the settlement agreement between the U.S. Navy and Campbell Estate, some of the uses, activities and improvements proposed for the Professional Baseball Training Facility appears to be in conflict with the provisions contained in the Compatible Land Use Map ("CLUM") and its allowable uses. "Outdoor sports areas and spectator sports" are allowed, but "sports stadiums" appear to be not allowed.

Considerations: At the appropriate time, NAS Barbers Point should be consulted for input and clarification. There is an immediate concern that the State's initial inquiry on "sports stadium" compatibility may require a substantial amount of preparation, review and discussion with NAS Barbers Point officials, and may have a significant impact on the performance time for this study.

It should also be noted that the Department of Housing and Community Development of the City and County of Honolulu suggests that Alternative "C" may have a significant impact upon the adjacent residences of Varona Village which is a component of DHCD's Master Planned Ewa Villages Revitalization Project. The Director of DHCD has requested that information on probable impacts on physical and socioeconomic environments and infrastructure systems of the surrounding area be provided

if Alternate "C" is selected as the final site. The Director also recommended the consultants and the State coordinate their efforts with DHCD during the planning and construction phases of the project.

It should also be noted the according to the Operations Division of the Department of the Army, "any discharge of fill material into Kaloí Gulch for the construction of drainage improvements would require a Department of the Army permit". The Operations Division also suggests that when plans for the improvements are drawn up they should be coordinated with the Corps' Operations Division.

ALTERNATIVE SITE "D"

UTILITIES

WATER

1. Available: Board of Water Supply system, 1-16" concrete cylinder pipe within adjacent Fort Weaver Road R.O.W. Water line is concrete jacketed for 125 feet at the location of Mango Tree Road entrance to the cane fields.
2. Source: "Kunia 228 Reservoir," 1.5 M.G. capacity for potable; existing ground water pumping station within Candidate Site can be used for irrigation purposes.
3. Potential: New 12" potable water service line, to connect to existing 16" concrete cylinder water main. Excavation, hook up and roadway patching estimated for 1 day completion; 2 days absolute maximum. Minimal disruption to vehicle traffic expected.

SEWER

1. Available: C&C 18" gravity sewer line, ending South of Alternative Site, within adjacent Fort Weaver Road R.O.W.
2. System: 18" extension from 84" main within Geiger Road R.O.W. leading to Honouliuli STP.
3. Potential: New 6" force main from Alternative Site to a point approximately 3,500 feet South, tying into existing sewer system.

ROADWAYS

1. Site fronted by Fort Weaver Road to the East; Mango Tree Road, a "cane haul road" maintained by Oahu Sugar Co., along South (Makai) boundary of site.
2. Access to site is via Fort Weaver Road.
3. Considerations:
 - A. Posted speed limit along Fort Weaver Road is 45 MPH; intersection with traffic lights may be required, depending upon the anticipated volume by traffic.
 - B. State-proposed major roadway paralleling Mango Tree Road ties into Fort Weaver Road at South boundary of site.

DRAINAGE

1. Site drains North and under Fort Weaver Road via City and County's West Loch Golf Course, into Pearl Harbor's West Loch.
2. Potential: Although on-site retention ponds will be provided, excess flood waters could be piped or channeled, along current route or pattern, in the northerly direction. May involve off-site drainage improvements through Honouliuli residential area, meeting with West Loch Golf Course drainage system.

SITE ENCUMBRANCES

1. Site is owned by Campbell Estate, and currently leased to Oahu Sugar Co. for sugar cane cultivation. Lease agreement terminates in June 1995; Oahu Sugar Co. will be accorded first rights for continued lease agreement with the Estate.
2. Should Oahu Sugar Co. continue with sugar cane cultivation operations, alternative means for accommodating cane hauling, irrigation and harvesting will need to be provided, and damages to Oahu Sugar Co. for "lost income" may be due.
3. Grading and cane burning, and pesticides/fertilizer applications will impact activities and improvements at the training facility.

LAND USE/COMPATIBILITY

1. Existing Land Use: Agricultural (sugar cane cultivation).
2. Adjacent Land Uses, Current: Agricultural (sugar cane cultivation) to the West; improved roadway (Fort Weaver Road) to the East; commercial/light industrial to the North, along Old Fort Weaver Road; educational to the South (Hale O'Ulu School).
3. Adjacent Land Uses, Planned (Including Site):
 - A. Campbell Estate's "Kapolei Long Range Master Plan," April 1989, indicates a continued agricultural (sugar cane cultivation) land use on the site. Northwest of the site, between Old Fort Weaver Road and West Loch Golf Course, residential land use is indicated. Across the bifurcated Fort Weaver Road, land uses are indicated as residential, with a commercial zoning immediately across the Old Fort Weaver Road/Fort Weaver Road intersection. The Hale O'Ulu School site is indicated as a continued Public Facility land use.

B. The City & County's Department of Housing and Community Development (DHCD) is currently proposing a new residential development, "West Loch Knolls," for the major portion of the site. DHCD has indicated a "threat of condemnation" to landowner Campbell Estate, and is currently assessing land costs for consideration of a purchase offer. It appears that the City's housing plans for the site are imminent.

4. Regional: West Loch Estates and Golf Course to the Northeast; agricultural (sugar cane cultivation) to the East.

Solid Waste Disposal

Solid waste will be generated by the project site during construction and after development. Based on typical generation rates, 8-9 tons/per week is estimated to be generated from the facility, requiring 2 truck trips per week for collection. It is anticipated that private collection companies will service this facility. Generation of municipal wastes will be a long term impact of development. Refuse from the proposed Kapolei Sports and Recreation Center development is not expected to have a significant impact on the Leeward Oahu solid waste disposal facilities. Combustible refuse will be disposed at the H-POWER wastes energy recovery facility, with the remaining refuse to be land filled at the municipal Waimanalo Gulch landfill. Generation of construction wastes as a result of clearing and grubbing the site will be a short term impact. Most of these wastes will be combustible, and the contractor will be responsible for removal of the wastes from the site.

As noted by the State's Department of Health Solid Waste Division, the State (HRS 342H: 25% by 1995 and 50% by 2000) and City and County of Honolulu (ordinance 89-114: 50% by 1995 and 75% by 2000) have established aggressive waste diversion goals. Therefore, provision for alternative systems will be included in the project design, focusing on Internal separation mechanisms for recycling and composting. Also, as H-Power is reaching capacity and the Waimanalo Gulch Landfill is filling up faster than anticipated, the contractor must observe the State's and City's goals for minimization and diversion of both construction and operational wastes.

Evaluation Criteria for the Four Alternative Sites

A. Criteria for which Alternative Sites were considered equal

The four Alternative Sites were considered equal for the following criteria:

1. Site Criteria

- a. Size
- b. "Buildability"
- c. Shape
- d. Industrial and Agricultural Nuisances
- e. Soil Suitability for Construction

2. Community Criteria

- a. State Land Use District
- b. General Plan and Development Plan
- c. Zoning
- d. Existing Land Use and Displacement
- e. Interference with Institutions/Public Facilities
- f. Effects Upon Adjacent Land Uses
- g. Proximity to Commercial Centers
- h. Relationships to Population Centroids
- i. Aesthetic Values

3. On-Site Facility Construction Cost

Since the facility design will be essentially the same for any of the four Alternative Sites, the on-site construction cost will be approximately the same for any of them. This information is provided in the report by Mitsunaga and Associates in Appendix K.

Development Plans and Proposals

Developments approved and proposed for the Ewa/Central-Oahu area which would affect OSCo acreage are shown in the Table below. As indicated, an estimate 3,883 acres of OSCo's remaining sugarcane land has been proposed for development.

In this listing of major developments, it should be noted that the landowner for the proposed Kunia Golf Course lacks land withdrawal rights before the lease expires in 1996. Also, this and other projects lack development approvals. Furthermore, lands for some projects are to be withdrawn gradually from sugar production as they are needed for development, while lands for other projects have been or will be withdrawn during a single harvesting cycle. Projects in this latter category include those by the State and by a few private developers.

Table **PLANNED AND PROPOSED DEVELOPMENTS
AFFECTING OSCo ACREAGE: 1990**

| <u>Project</u> | <u>Sugarcane Acreage</u> |
|---|------------------------------|
| Ewa Marina, Phase II | 389 |
| Ewa Marina, Phase I (partially approved) | 410 |
| Kapolei Golf Course Addition, State of Hawaii | 58 |
| Villages of Kapolei, State of Hawaii (approved) | 375 |
| Kapolei Business-Industrial Park | 145 |
| Royal Kunia, Phase II | 838 |
| Ewa Gentry (partially approved) | 311 |
| City of Kapolei, Campbell Estate (partially approved) | 641 |
| Ko Olina Resort (approved) | 281 |
| West Loch Estates, City and County of Honolulu (approved) | 151 |
| Kunia Golf Course | 190 |
| Eventual Remnant Property | 94 |
| Total | 3,883 |

Source: Proposed Ewa Marina, Phase II Impact on Agriculture in Application to Amended General Plan of City and County of Honolulu (March 1991)

Impact on the Profitability of Oahu Sugar Company

Amfac's Oahu Sugar Company (OSCo) currently manages an approximately 14,200 acre plantation on lands which cover portions of Central Oahu on each side of Kunia Road above Pearl Harbor, and portions of the Ewa Plain to the west of Pearl Harbor. Nearly all the land which OSCo farms is leased, primarily from the Estate of James Campbell (applicant) and Robinson Estate. Leases for the former's lands are scheduled to expire in 1995 with the latter's expiring one year later. Both leases allow for partial withdrawal of lands for urbanization. OSCo currently operates two mill trains in tandem at their Waipahu processing facility.

A report prepared for the applicant (Larson, 1986), included in this report as Appendix B and summarized below, evaluated the impact of a phased withdrawal of about 700 acres on the profitability of the Oahu Sugar Company.

The report identified five major factors that determine the continuing profitability of OSCo:

- 1) Sugar production in Hawaii will depend upon the continued protection of the U.S. sugar industry by the U.S. Congress.
- 2) It is very likely that profitable OSCo operations will require about 100,000 tons of sugar annually in a double mill train system and 80,000 tons with a single mill train.
- 3) Operating cost reductions and yield increases will continue to be the primary objective of OSCo management.
- 4) Long-term crop land withdrawals for urban use remain compatible with profitable sugar operations at OSCo.
- 5) No alternative crop prospects were found that are economically feasible sugar crop replacements at OSCo.

A ten-year summary of HSPA data on the sugar industry shows that OSCo has averaged 100,000 tons annually with a range of 91,800 to 114,300 tons. In 1985 OSCo produced 97,500 tons of sugar harvested from 6,560 acres to report a record yield of 14.87 tons per acre (TSPA).

Over the past ten years, OSCo has increased average plantation yields from 11.0 TSPA in 1977 to the current 14.87 TSPA. By keeping production levels constant, the increased efficiencies of its operation have allowed it to reduce total plantation size by 4,400 acres between 1980 and 1983. The trend in increasing yields is expected to continue although the easiest yield improvements have already been made. If plantation projections attain 16 and 17 TSPA, then total plantation requirements will drop to under 12,000 acres while continuing to operate at 100,000 tons annually.

A recent report prepared for the Village Park Expansion EIS (July 1986) (Proposed Village Park Expansion: Impact on Agriculture. Decision Analysts Hawaii, Inc, February 1986) noted that OSCo could switch to a single train milling operation, releasing approximately 6,200 acres of land, and still remain viable.

"OSCO could reduce acreage and production substantially without losing economies of scale. Of significance, Amfac's Kekaha Sugar Company, Inc., which has climatic conditions similar to those of OSCo and similar yield potential, is one of the most profitable sugar operations in the State. Yet this plantation has only about 8,000 acres under cultivation, and produces only about 55,000 tons of sugar per year versus 14,200 acres and 90,000 to 95,000 tons per year for OSCo. Assuming OSCo could be reduced to a level similar to that of Kekaha Sugar Company without losing its economies of scale, which is regarded by Amfac as possible, then about 6,200 acres could be freed (14,200-8,000)..." (Decision Analysts Hawaii, 1986)

Impacts Associated With Sugar Operations:

In addition to assessing the impact of the project on the surrounding areas, the reverse problem of impacts of air pollution sources located in the surrounding area on the residents of the project is also of concern. For the Kapolei Sports and Recreation Center, the issue of primary concern is the ongoing sugarcane operations in the fields adjacent to the project. Insofar as air quality is concerned, sugarcane burning and cane haul road usage present the two greatest potential problems.

Assessments of the potential worse-case impacts on the proposed project from sugarcane burning indicate that State and/or national AAQS for both particulate matter and carbon monoxide could be exceeded for a distance of about one mile or more downwind of the fire. Cane fields located to the east, while more distant, present the greatest potential for impact due to the prevailing winds.

Even though the main cane haul road in the vicinity of the project is paved, fugitive dust concentrations may exceed State and national AAQS at times for a distance of about 1,000 feet (300 meters) downwind. Except for occasional brief periods, prevailing winds in the area will carry the dust away from the nearest residents of the proposed project.

A. Sugarcane Burning

Sugarcane fields are generally harvested every two years. Prior to harvesting, sugarcane is burned in the field to remove unwanted foliage as well as to control rodents and insects. The major air pollution emissions associated with sugarcane burning include particulate, carbon monoxide and volatile organic compounds.

Within about two miles of the proposed project there currently are about 25 cane fields varying in size from roughly 50 to 200 acres each which total about 2,800 acres. These fields will have the greatest potential impact on the development.

Construction of the proposed project will remove approximately 75 acres of land from sugarcane cultivation and thus provide a benefit to current nearby residents in that this will eliminate some sugarcane burning emissions that will otherwise occur in the area.

In the case of Alternate Sites "B" and "C", the nearest remaining cane fields will be located to the north and to the west of the project site where the usual prevailing northeast trade winds will move the smoke away from the development. Although located somewhat farther away from Site "B" and "C" and closer to Site "A" and especially Site "D", smoke from the closest cane fields directly to the east across Fort

Weaver Road will likely have the greatest potential for impacting the project site. Depending on the site these fields range is located from about one-half to one and one-half mile from the project site. If these cane fields are burned during periods when winds are from the east or east-northeast, exceedances of the State and/or national AAQS for particulate matter and for carbon monoxide are possible within the area which will be occupied by the project.

B. Cane Haul Road Usage

Several cane haul roads exist in the vicinity of the projects. The closest and most frequently used is Mango Tree Road which provides a major east-west route for cane haul trucks in the area. Presently, this haul road is paved and passes right between alternate sites "B" and "C".

Fugitive dust emissions emanating from paved haul roads are primarily a function of the amount of dirt on the road, vehicle speed, weight and number of wheels, and local climate. Much of the dust generated will be in the form of larger particles that will settle to the surface within a short distance of the roadway. Larger dust particles do not generally constitute a health hazard but mainly are a nuisance. However, dust particles smaller than 10 microns in diameter can remain suspended indefinitely and inhaled rather readily. Thus, it is the smaller particles that are of most concern. The recently revised national AAQS pertain to particulate matter less than 10 microns in diameter, while the State standards pertain to total suspended particulate generally taken to be particles less than 30 microns in diameter. Dispersion calculations indicate that both the national and the State 24-hour air quality standards for particulate matter could be exceeded for a distance of about 1,000 feet (300 meters) downwind under these conditions.

Mitigation Measures

A. Government Regulations

Strict compliance with State of Hawaii Air Pollution Control Regulations regarding establishment of a regular dust-watering program and covering of dirt-hauling trucks will be required to effectively mitigate fugitive dust emissions from construction activities. Twice daily watering is estimated to reduce dust emissions by up to 50 percent. Use of chemical wetting agents or soil stabilizers may increase control efficiency. Paving of parking areas and establishment of landscaping early in the construction schedule will also help to control dust. Further mitigation can be achieved by limiting the total area that can be disturbed at any given time and/or by using wind screens. Increased vehicular emissions due to disruption of traffic by construction equipment and/or commuting construction workers

can be alleviated by moving equipment and personnel to the site during off-peak traffic hours.

B. Traffic and Roadway Improvements

Options available to mitigate traffic related air pollution are to improve roadways, reduce traffic or reduce individual vehicular emissions. Long term projections of carbon monoxide emissions from vehicular traffic associated with the completed development are based on the traffic impact study findings.

C. Sugar Operation

Harvesting sugarcane without burning would be the most effective means to mitigate impacts on the project from this source of air pollution, but studies conducted during the past few years have indicated that this is not an economically viable solution in Hawaii. Given that burning is a necessity, adherence to State regulations pertaining to agricultural burning will help to minimize impacts on the proposed project. In accordance with these regulations, field operators must apply for burning permits for all fields to be harvested. Applications must include maps of areas to be burned showing fields by number and acreage, direction of prevailing winds, locations of residences, schools, commercial establishments, public buildings, airports and public utilities, the designation of fields to be burned under specified wind conditions and other information. Burning is prohibited during periods of stagnation. Burning of the fields adjacent to the project should not be permitted when wind conditions will carry the plume over the proposed facility.

Impacts can be further lessened by keeping cane haul roads clean and free of debris. Maintaining a separation distance of about 1,000 feet (300 meters) between the project site and the cane haul roads is recommended, although prevailing winds in the area should allow a smaller buffer.

D. Alternative Mitigating Measures

Aside from improving roadways, air pollution impacts from vehicular emissions can be mitigated by reducing traffic through the use of mass transit and car pooling and/or by adjusting local school and business hours to begin and end during off peak times of use of the proposed facility. Emissions from individual vehicles can be reduced in the vicinity of intersections by lowering speed limits (and thus reducing accelerating emissions). It is estimated that lowering the speed limit on Fort Weaver Road from 45 mph to 35 mph will reduce emissions (and hence carbon monoxide concentrations) at the Renton Road intersection by about 20 to 25 percent. Although it is conceivable that the

efficiency of motor vehicle engines and/or emission control equipment will be improved or that vehicles will be developed which burn cleaner fuels at some point in the future, it is unlikely that these developments will occur before project completion in 1995. With regard to cleaner burning fuels, vehicles burning methanol or compressed natural gas or powered by electrical motors are some of the possibilities for technological development that are currently being contemplated. Lastly, even without technological breakthroughs, it is also possible that at some point in the future the State may decide to adopt a motor vehicle inspection and maintenance program which would ensure that emission control devices are properly maintained and thereby reduce emissions, or the State may adopt more restrictive emission control standards.

Source: Final Environmental Impact Statement for The Ewa Villages Master Plan by RMTC, February 1991)

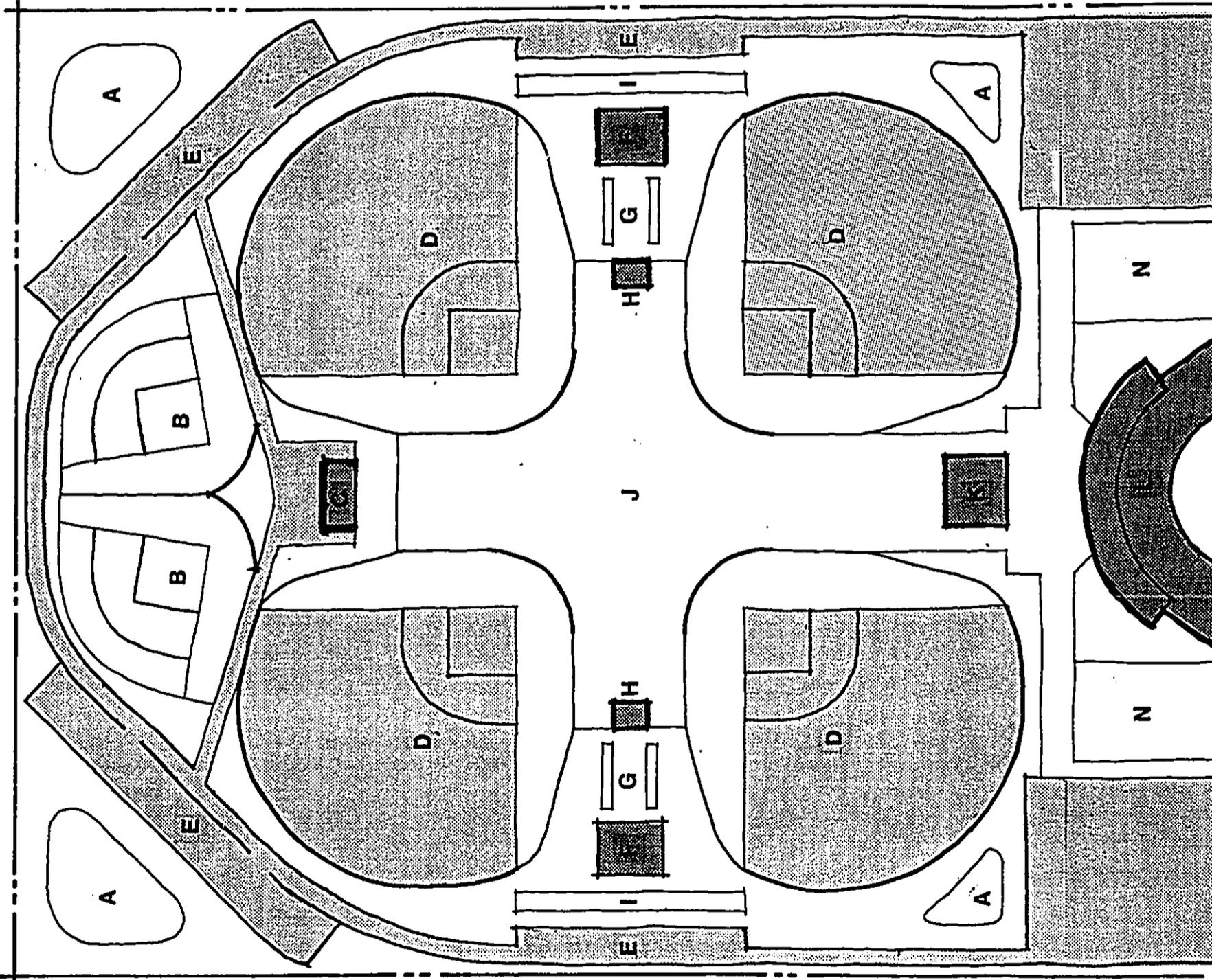
Appendix B

Figures 1 & 2

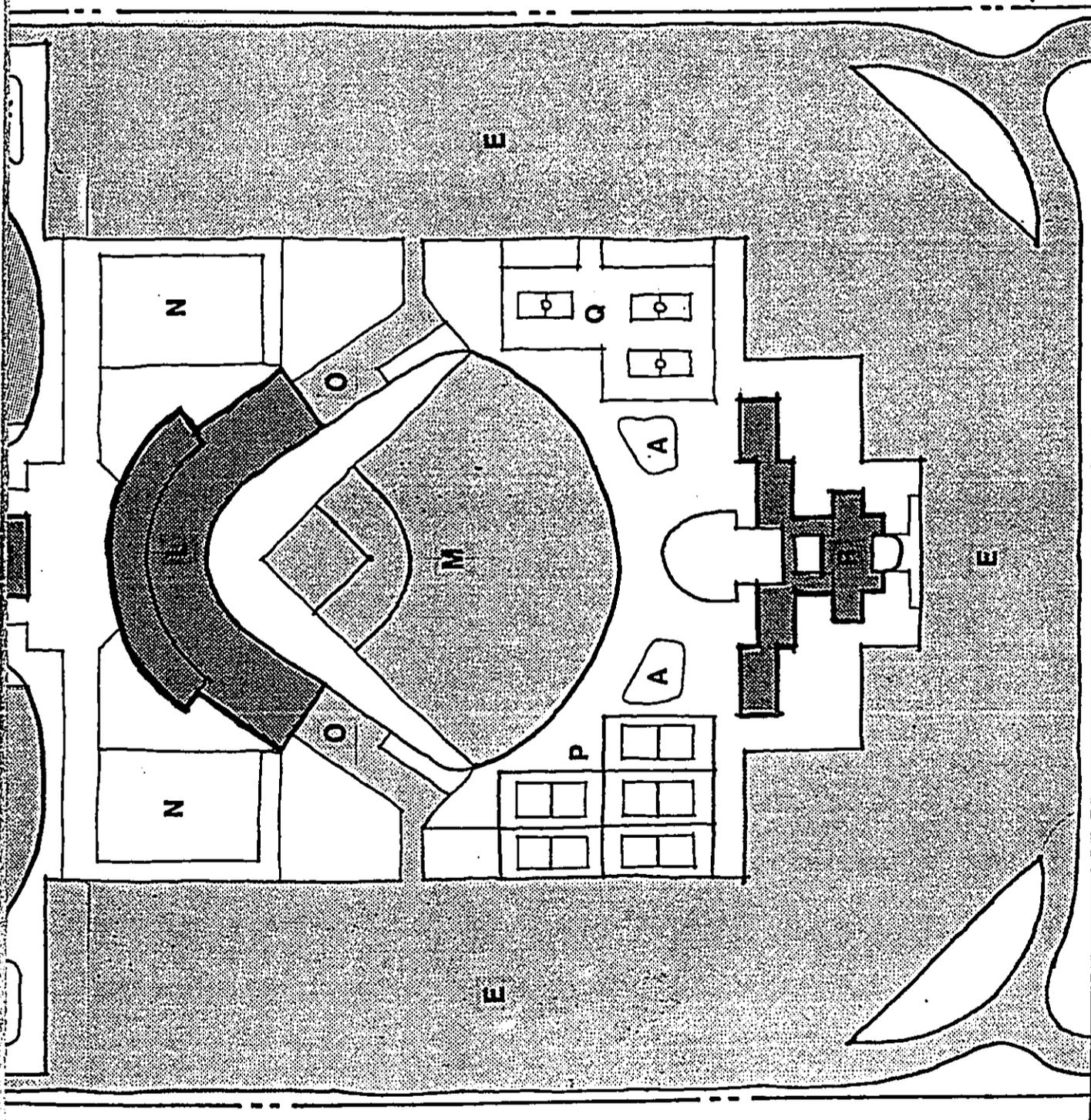
LEGEND

- A. RETENTION PONDS
- B. PRACTICE INFIELDS
- C. MAINTENANCE AREA
- D. PRACTICE FIELDS
- E. PARKING
- F. BATTING CAGES
- G. PITCHING BULLPEN
- H. OBSERVATION TOWER
- I. SPRINT TRACK
- J. SEE FIGURE 2
- K. MULTI-PURPOSE BUILDING
(Administrative, Lockers/Showers,
Weight/Training Rooms, concessions,
Restrooms)
- L. 5,000-SEAT GRANDSTAND
- M. STADIUM
- N. EXERCISE AREAS
- O. SERVICE ACCESS
- P. { SEE
FIGURE
Q. } 2
- R. DORMITORY
(Including Kitchen/Dining, Meeting Rooms)

LEGEND  STRUCTURES



STRUCTURED



KAPOLEI SPORTS AND RECREATION CENTER
ALTERNATIVE SITES ANALYSIS REPORT

FIGURE 1
PROFESSIONAL BASEBALL USES

DEPARTMENT OF ACCOUNTING AND
GENERAL SERVICES
STATE OF HAWAII
HONOLULU, HAWAII

PREPARED BY:
MITSUNAGA & ASSOCIATES, INC.
HONOLULU, HAWAII

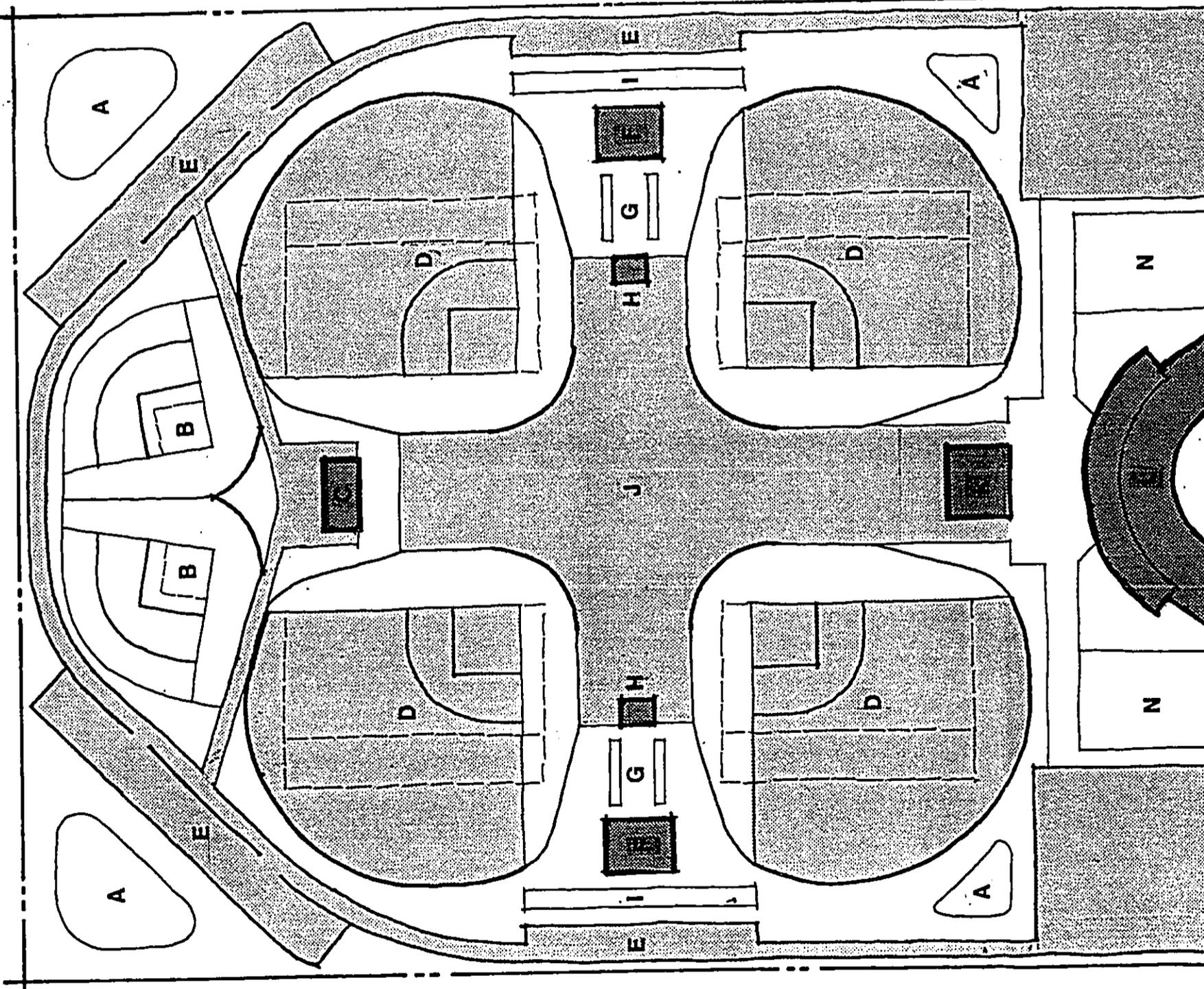
200 100 0 200 400 FEET



GRAPHIC SCALE

LEGEND

- A. RETENTION PONDS
- B. LITTLE LEAGUE, BABE RUTH, PONY LEAGUE
- C. MAINTENANCE AREA
- D. SOLID LINES (Mountain Ball, Softball)
DASHED LINES (Flag, Touch, Pop Warner Football, Soccer, Rugby)
- E. PARKING
- F. BATTING CAGES
- G. PITCHING BULLPENS
- H. OBSERVATION TOWERS
- I. RUNNING TRACKS
- J. MULTI-USE PLAZA (Fairs, Carnivals, Music Festivals, Volleyball/Badminton Courts, Kiddie Area)
- K. MULTI-PURPOSE BUILDING (Showers, Concessions, Restrooms)
- L. 5,000-SEAT GRANDSTAND
- M. STADIUM (LH/OIA Baseball, Fairs, Carnivals, Music Festivals, Concessions, Restrooms)
- N. EXERCISE AREAS
- O. SERVICE ACCESS
- P. TENNIS COURTS
- Q. BASKETBALL COURTS
- R. DORMITORY (Including Kitchen/Dining, Meeting Rooms)



LEGEND

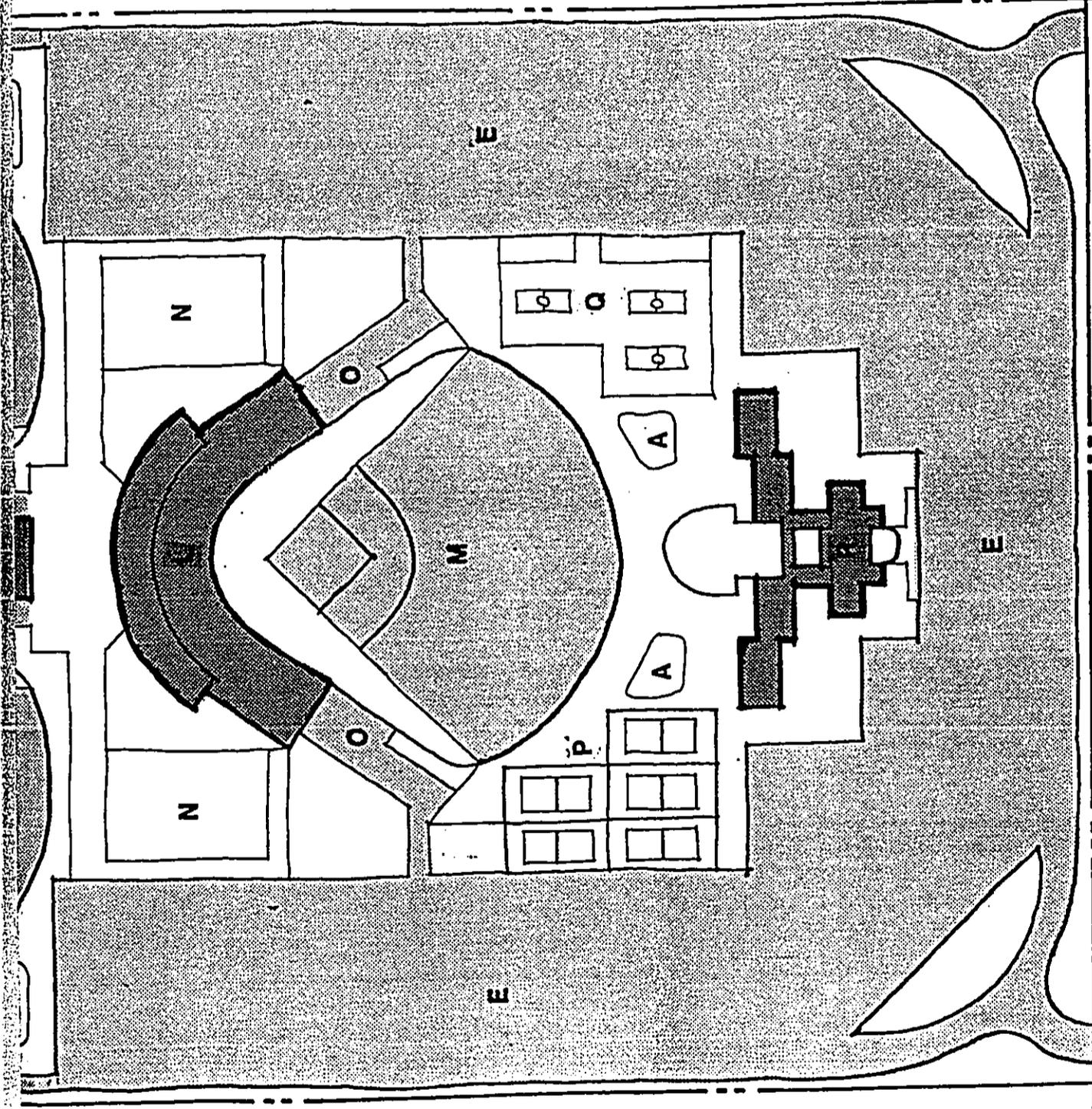
STRUCTURES



LEGEND



STRUCTURES



GRAPHIC SCALE

**KAPOLEI SPORTS AND RECREATION CENTER
ALTERNATIVE SITES ANALYSIS REPORT**

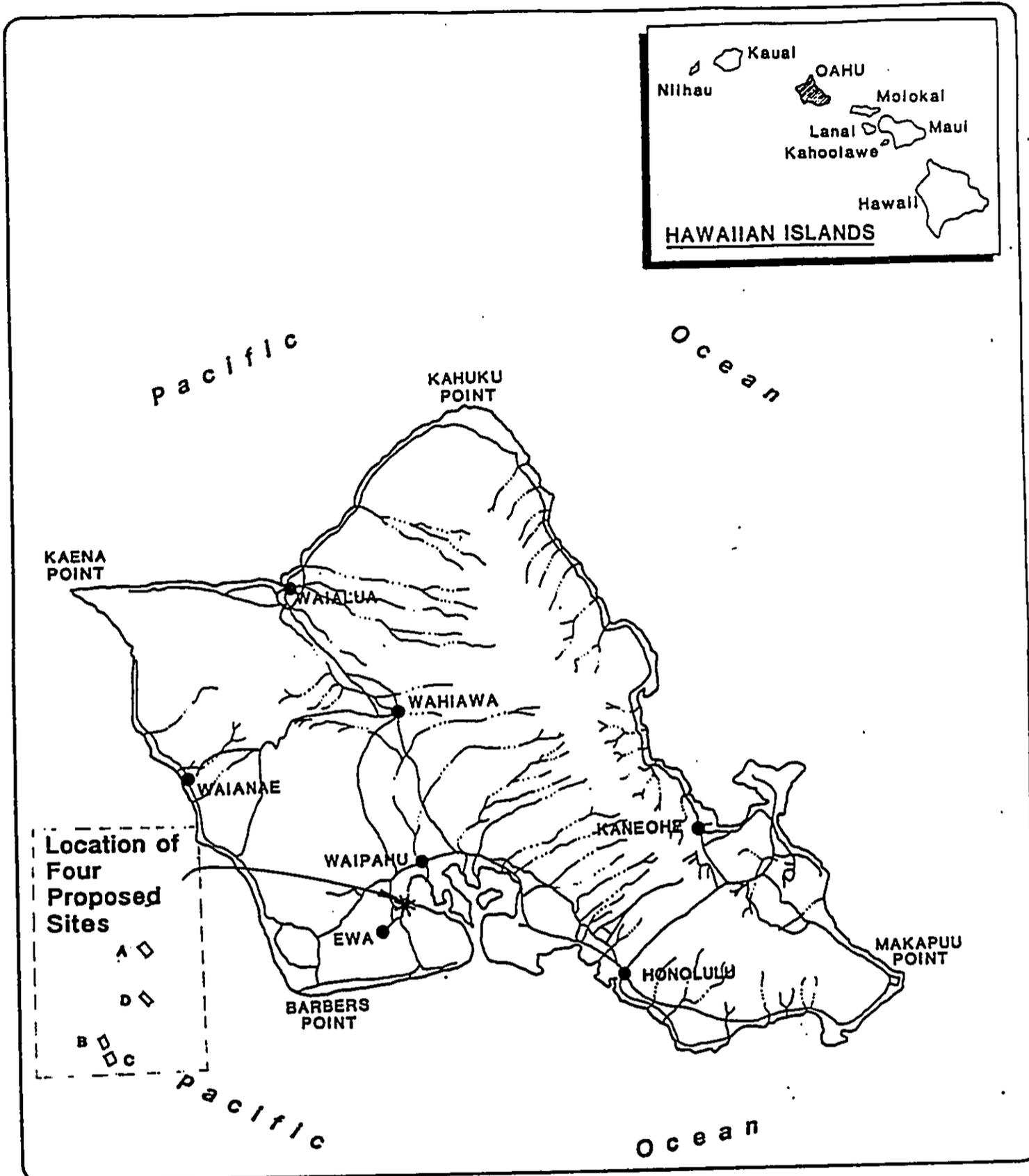
**FIGURE 2
PUBLIC USES**

**DEPARTMENT OF ACCOUNTING AND
GENERAL SERVICES
STATE OF HAWAII
HONOLULU, HAWAII**

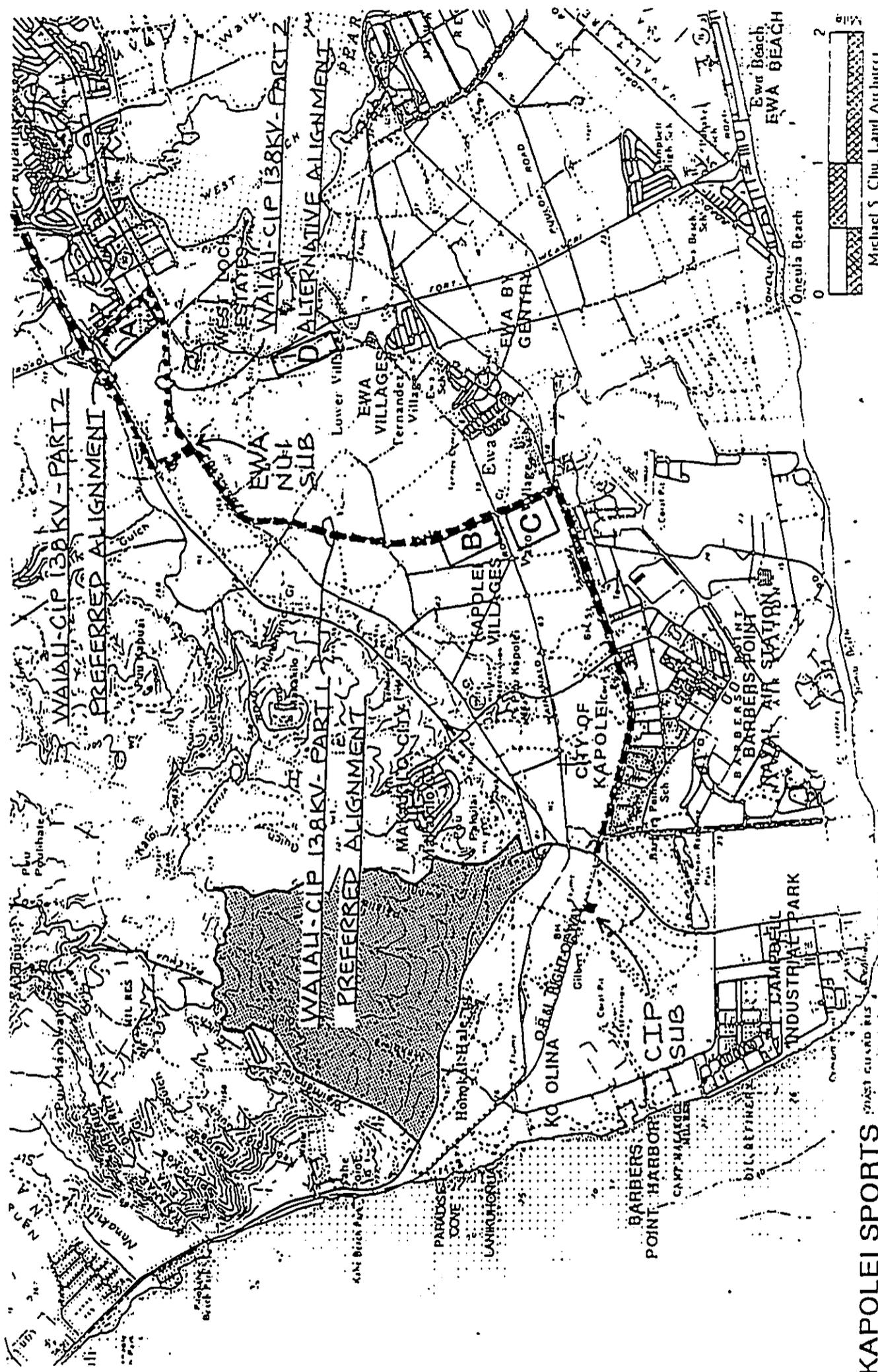
**PREPARED BY:
MITSUNAGA & ASSOCIATES, INC.
HONOLULU, HAWAII**

Appendix C

Maps

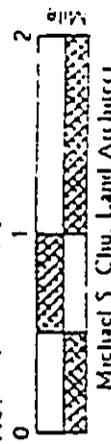
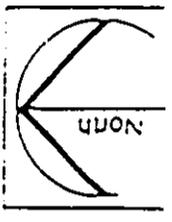


| | | |
|--|---|---|
| <p>Kapolei Sports and Recreation Center Project Ewa, Oahu State of Hawaii, DAGS</p> | <p>0 3 6 12 SCALE IN MILES</p> | <p>FIGURE 1 LOCATION MAP R.M. TOWILL CORPORATION</p> |
|--|---|---|



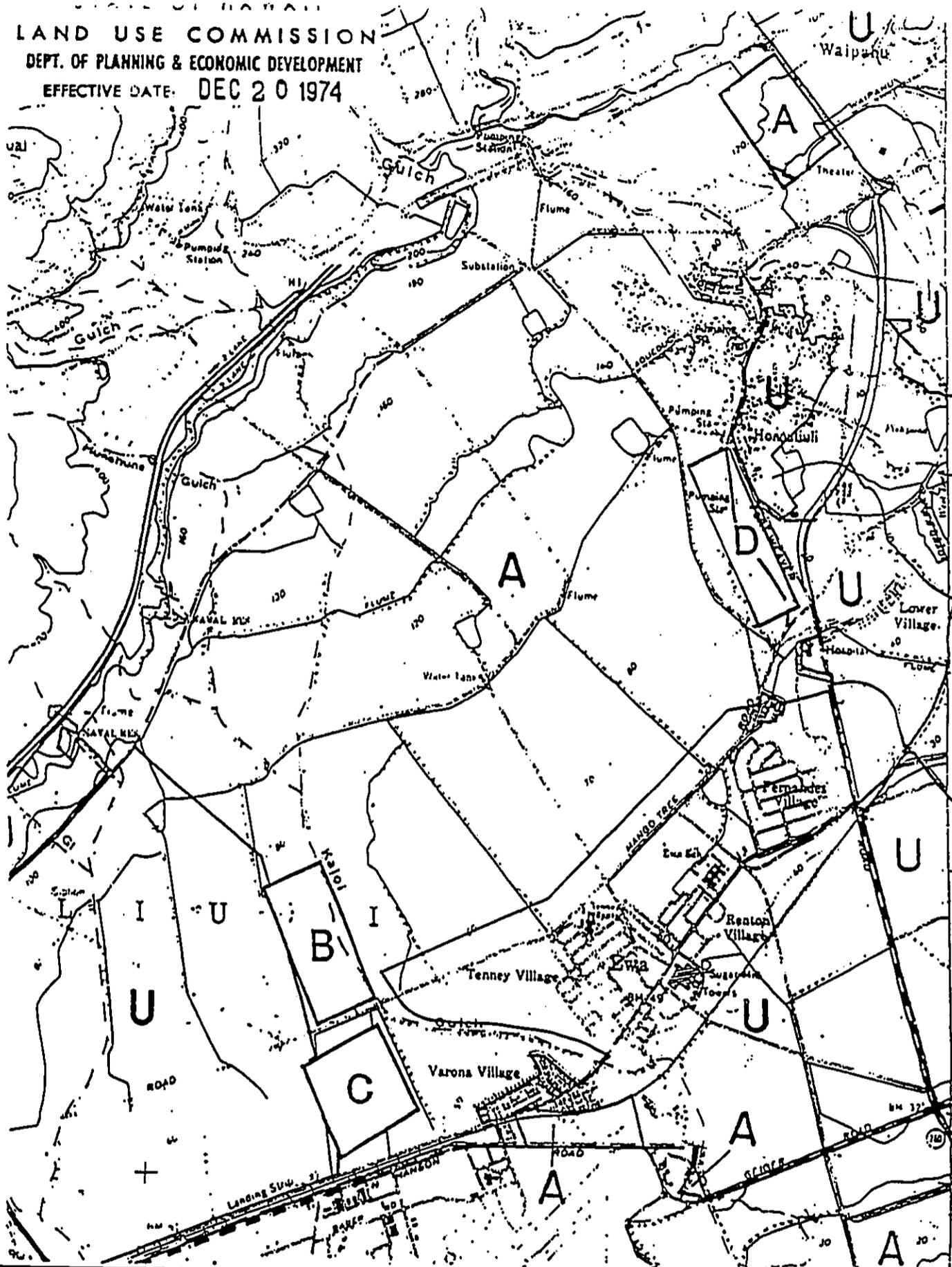
KAPOLEI SPORTS AND RECREATION CENTER PROJECT
ALTERNATIVE SITES A, B, C, D

FIGURE 1A
LOCATION MAP



Michael S. Chu, Land Architect

STATE OF HAWAII
 LAND USE COMMISSION
 DEPT. OF PLANNING & ECONOMIC DEVELOPMENT
 EFFECTIVE DATE: DEC 20 1974



**Kapolei Sports and
 Recreation Center
 Project**
 Ewa, Oahu
 State of Hawaii, DAGS

Districts

- U = Urban
- R = Rural
- A = Agricultural
- C = Conservation

Figure 2

VICINITY MAP

MPAC INC

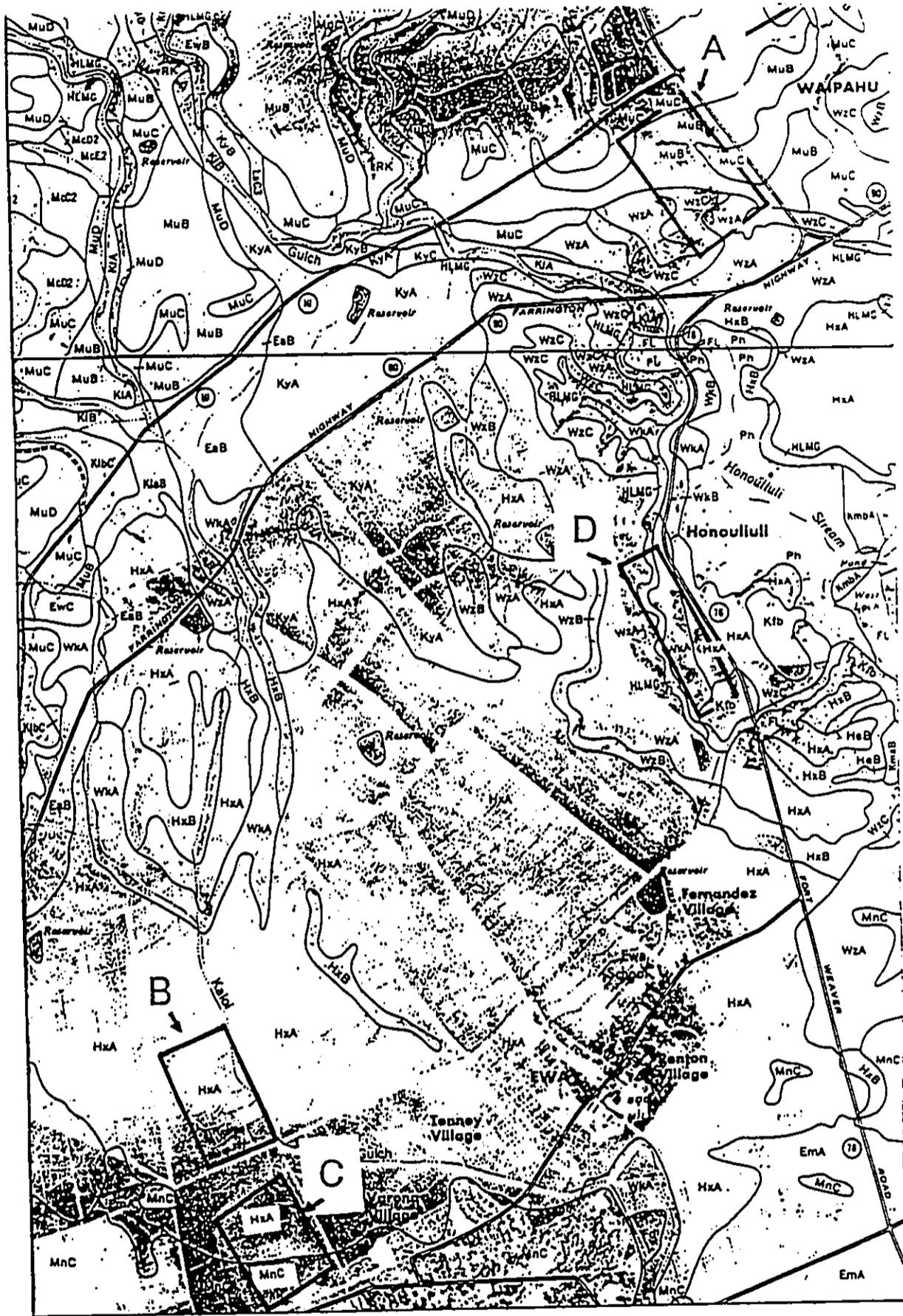
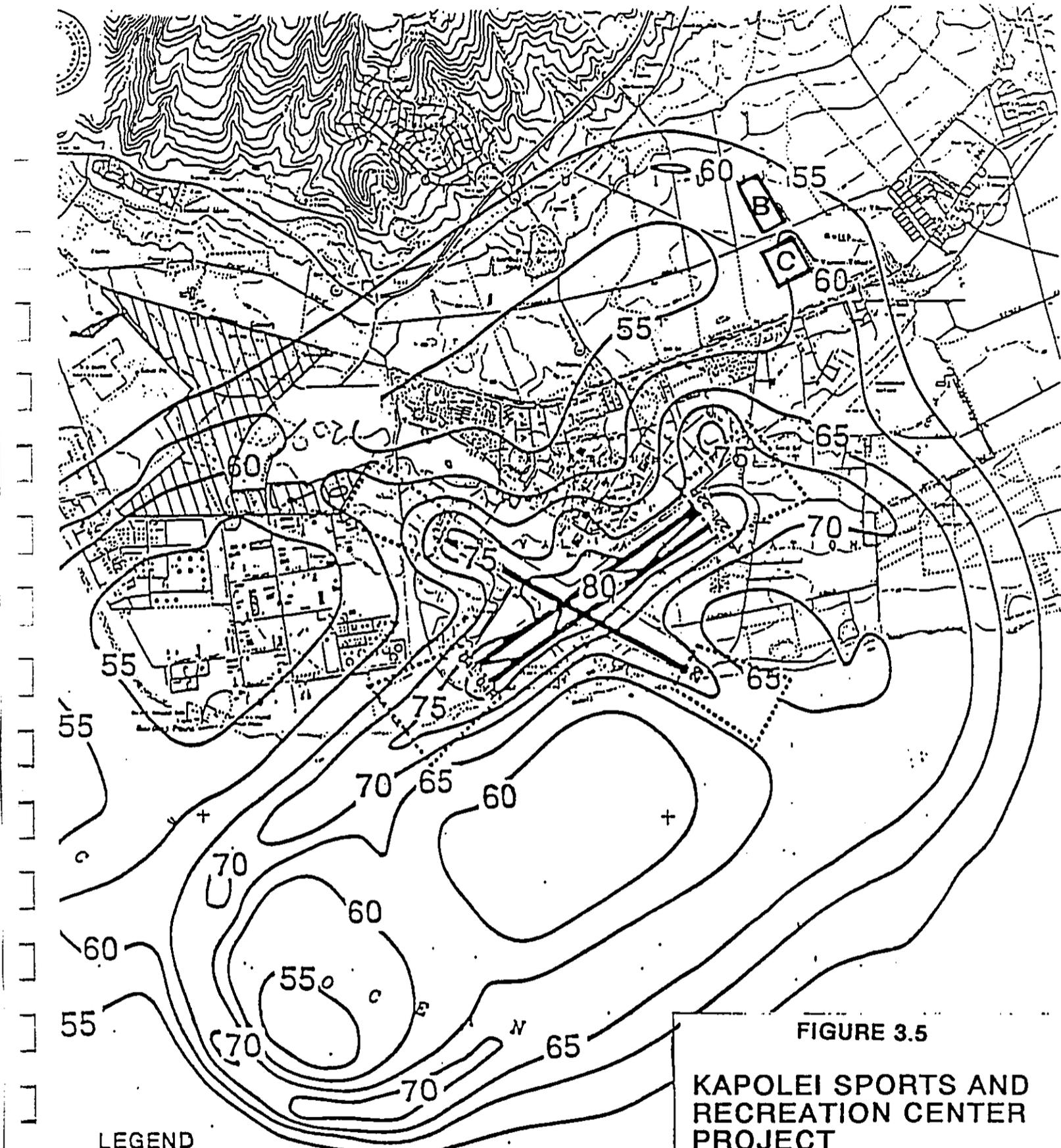


FIGURE 3

Kapolei Sports and Recreation Center Project
 Ewa, Oahu
 State of Hawaii, DAGS

SOILS MAP
 MPAC INC



LEGEND

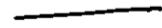
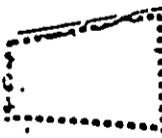
-  NOISE LEVEL CONTOUR (Ldn)
-  CLEAR ZONE

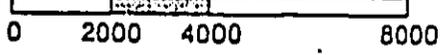
FIGURE 3.5

KAPOLEI SPORTS AND RECREATION CENTER PROJECT

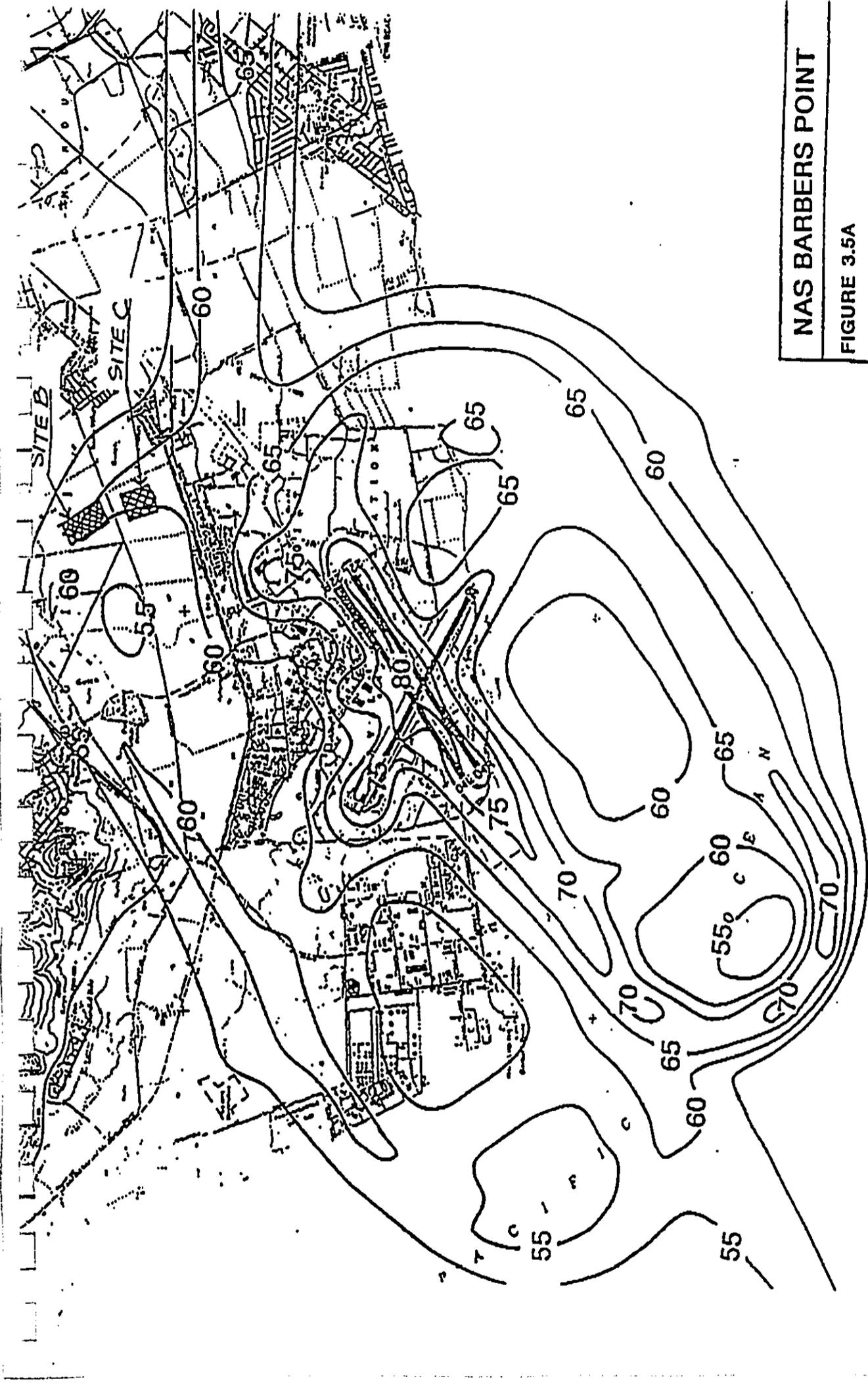
ALTERNATIVE SITES B & C

NAS BARBERS POINT
1989 AICUZ

SCALE IN FEET



HARRIS MILLER MILLER & HANSON INC.



Appendix To Figure 3.5
 Patterns indicate combined LDN noise contours generated by
 both NASBP and Honolulu International Airport.
 Unofficial AICUZ Map. For information only.

**Kapolei Sports and
 Recreation Center
 Project**
 Ewa, Oahu
 State of Hawaii, DAGS

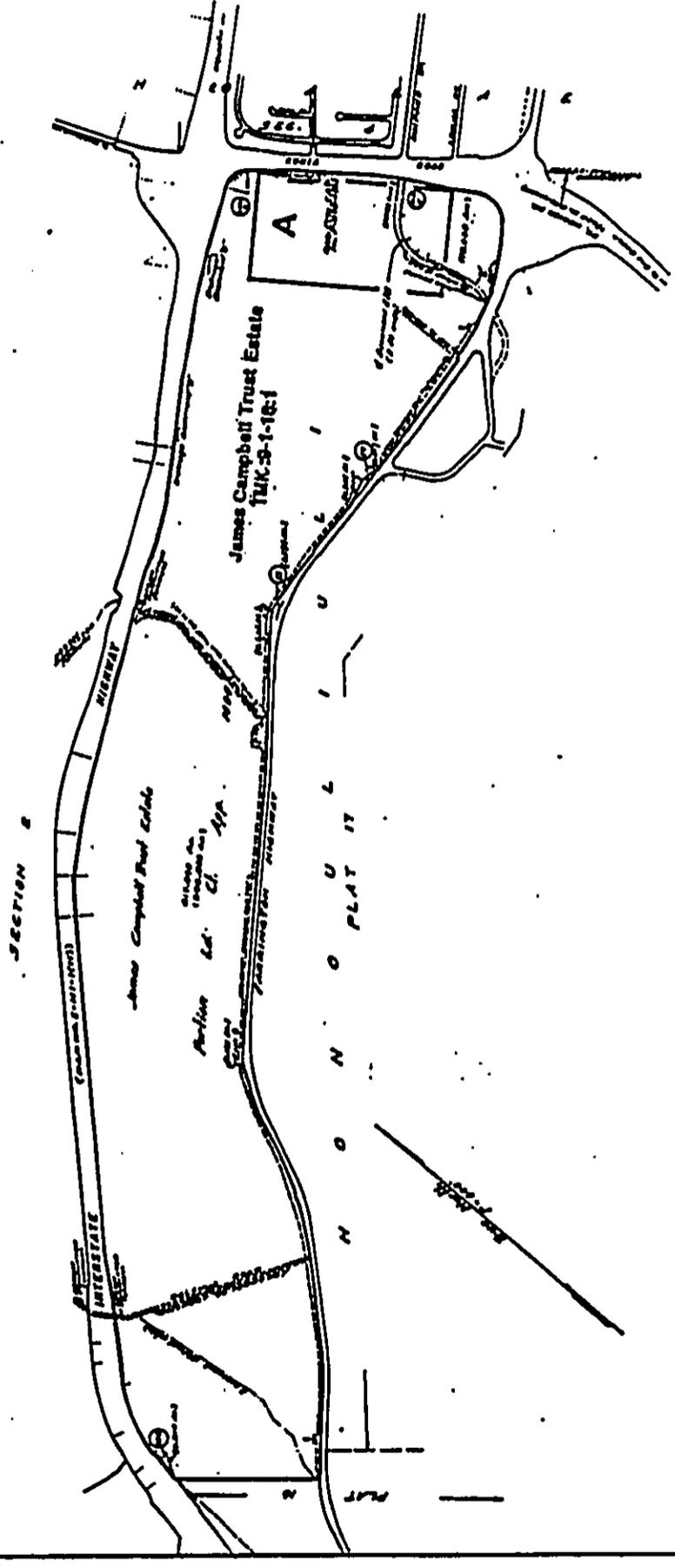
NAS BARBERS POINT

FIGURE 3.5A

**Ldn for both NASHP and
 Honolulu International Airport**

SCALE IN FEET
 0 2000 4000 8000

HARRIS MILLER MILLER & HARRIS



PLANNING MAPS BUREAU
DEPARTMENT OF LAND AND NATURAL RESOURCES
TAX MAP

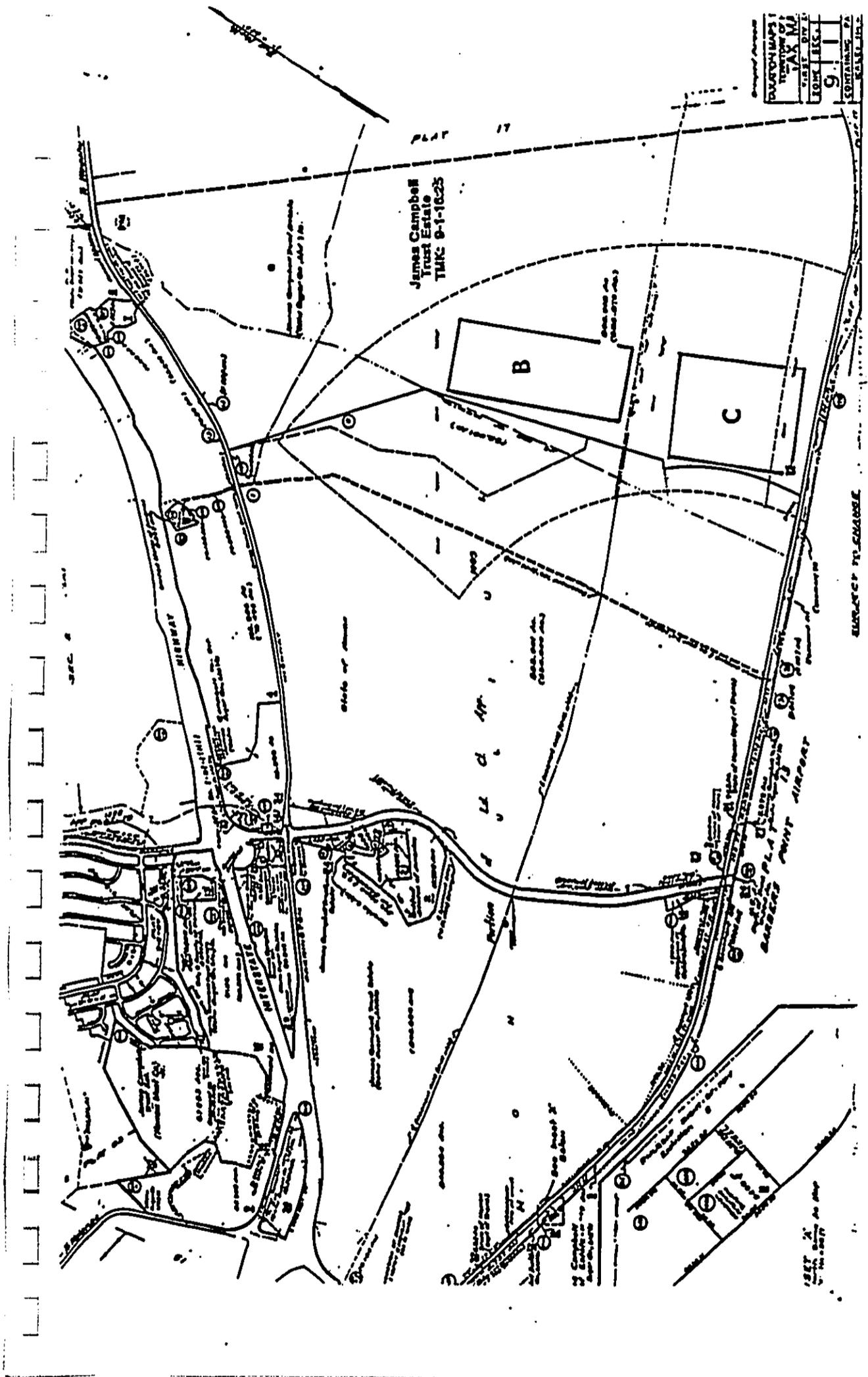
| | |
|---------------------|------|
| FIRST EDITION | PLAT |
| ZONE REC. | 18 |
| CONTAINING PARCELS | |
| SCALE: 1" = 100 FT. | |

SUBJECT TO CHANGE

Kapolei Sports and Recreation Center Project
Ewa, Oahu
State of Hawaii, DACS

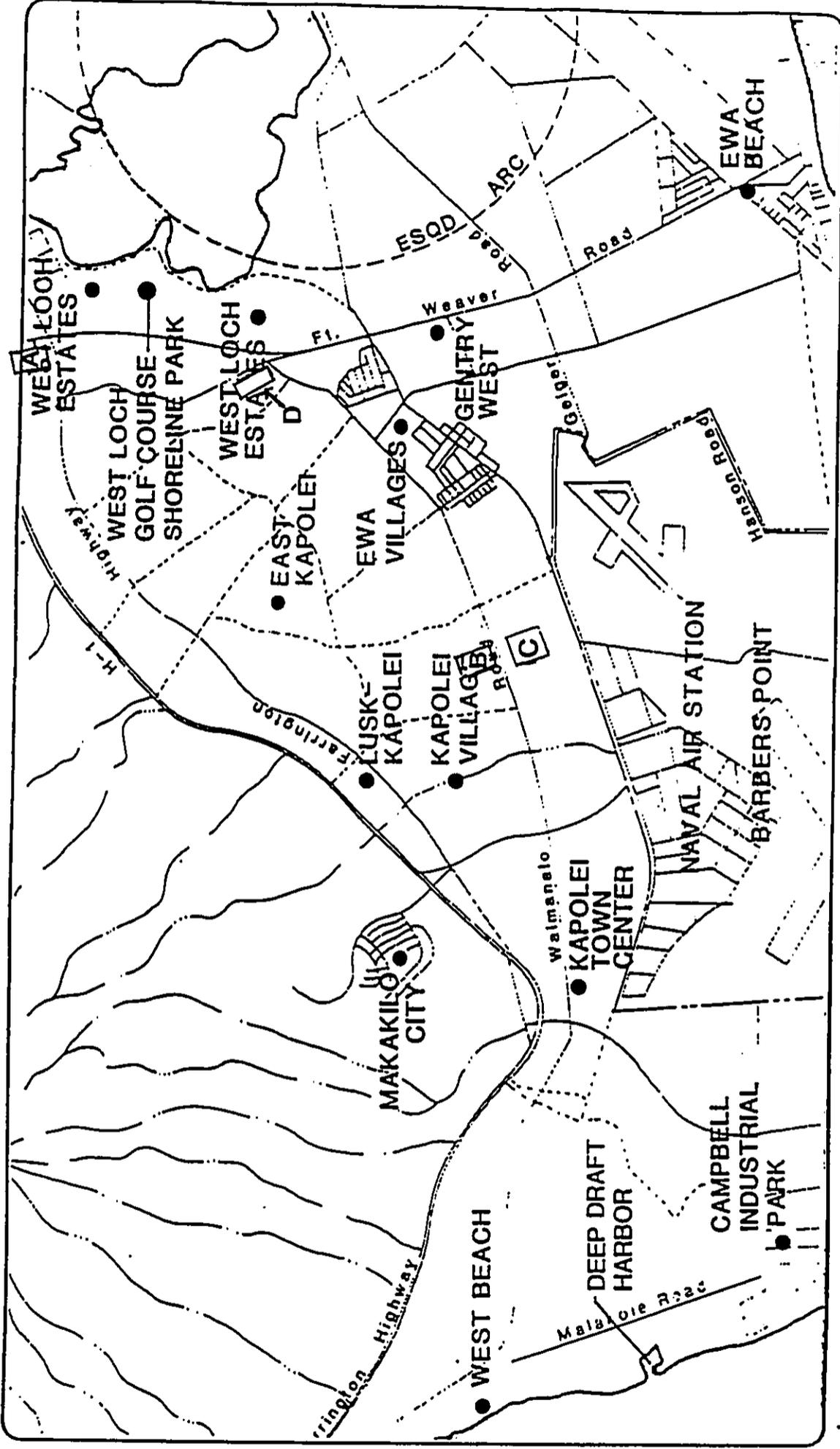
FIGURE 4A

OWNERSHIP MAP



**Kapolei Sports and
 Recreation Center
 Project**
 Ewa, Oahu
 State of Hawaii, D.A.G.S.

FIGURE 4 B
OWNERSHIP MAP



Kapolei Sports and Recreation Center Project
 Ewa, Oahu
 State of Hawaii, DAGS

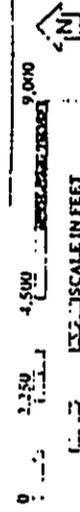
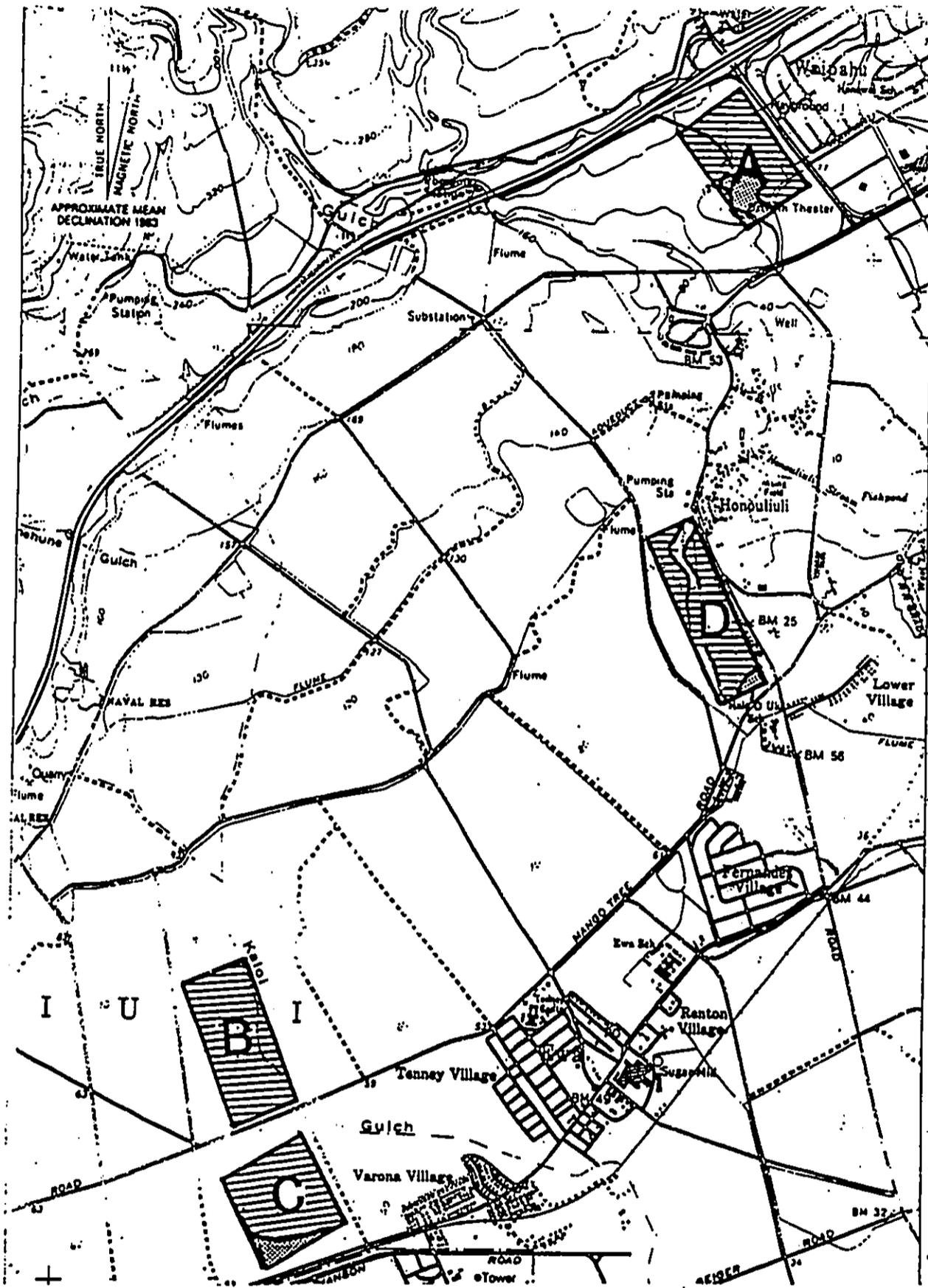
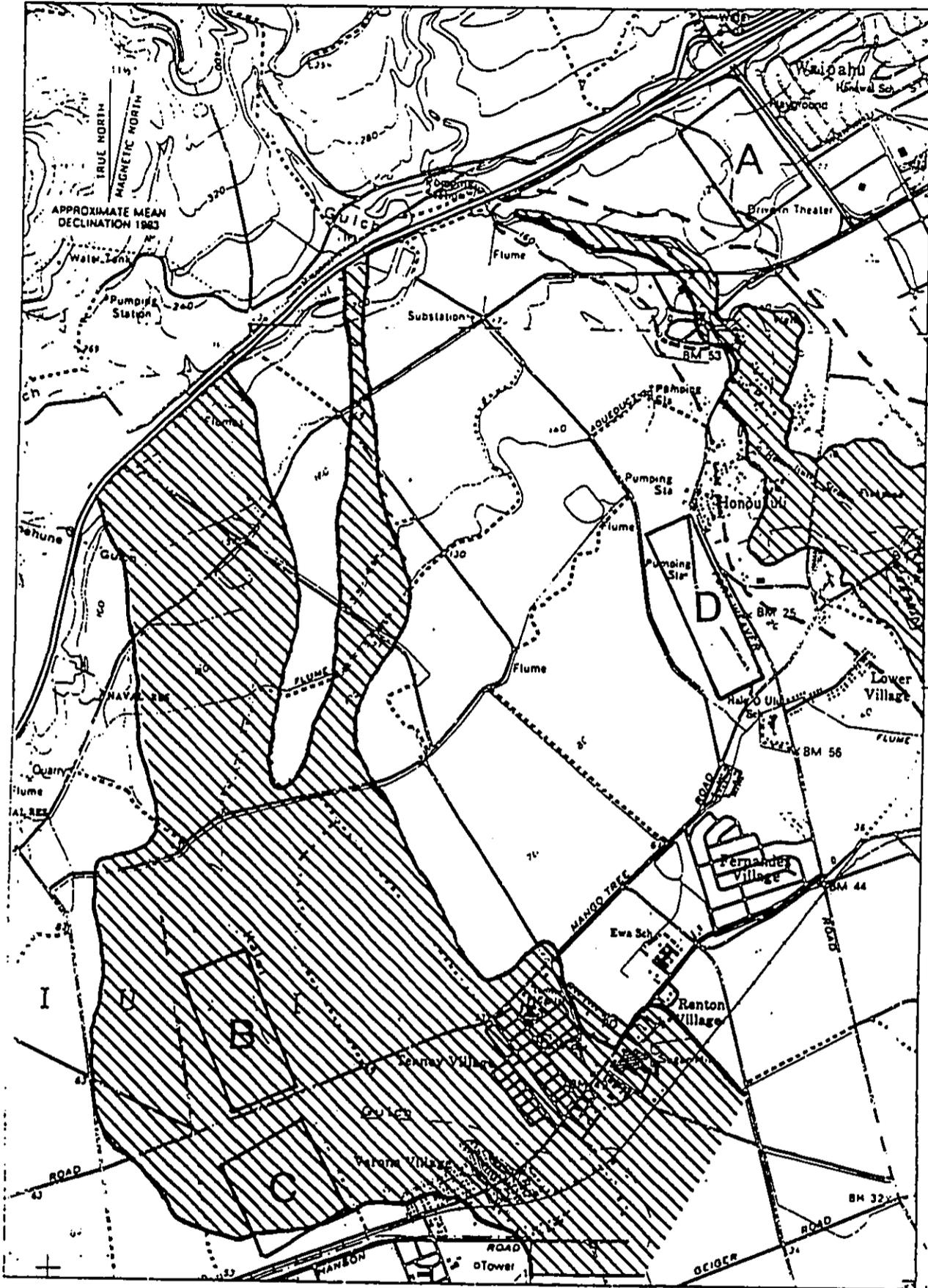


FIGURE 5
EXISTING/PLANNED DEVELOPMENTS MAP
 R.M. TOWILL CORPORATION



SCALE 1:24,000
 1 MILE
 1000 FEET
 500 FEET
 250 FEET
 100 FEET
 50 FEET
 25 FEET
 10 FEET
 5 FEET
 2 FEET
 1 FOOT
 0.5 FEET
 0.25 FEET
 0.125 FEET
 0.0625 FEET
 0.03125 FEET
 0.015625 FEET
 0.0078125 FEET
 0.00390625 FEET
 0.001953125 FEET
 0.0009765625 FEET
 0.00048828125 FEET
 0.000244140625 FEET
 0.0001220703125 FEET
 0.00006103515625 FEET
 0.000030517578125 FEET
 0.0000152587890625 FEET
 0.00000762939453125 FEET
 0.000003814697265625 FEET
 0.0000019073486328125 FEET
 0.00000095367431640625 FEET
 0.000000476837158203125 FEET
 0.0000002384185791015625 FEET
 0.00000011920928955078125 FEET
 0.00000059604644775390625 FEET
 0.000000298023223876953125 FEET
 0.0000001490116119384765625 FEET
 0.00000007450580596923828125 FEET
 0.000000037252902984619140625 FEET
 0.0000000186264514923095703125 FEET
 0.00000000931322574615478515625 FEET
 0.000000004656612873077392578125 FEET
 0.0000000023283064365386962890625 FEET
 0.00000000116415321826934814453125 FEET
 0.000000000582076609134674072265625 FEET
 0.0000000002910383045673370361328125 FEET
 0.00000000014551915228366851806640625 FEET
 0.000000000072759576141834259033203125 FEET
 0.0000000000363797880709171295166015625 FEET
 0.00000000001818989403545856475830078125 FEET
 0.000000000009094947017729282379150390625 FEET
 0.0000000000045474735088646141895751953125 FEET
 0.00000000000227373675443230709478759765625 FEET
 0.000000000001136868377216153547393798828125 FEET
 0.0000000000005684341886080767736968994140625 FEET
 0.00000000000028421709430403838684844970703125 FEET
 0.000000000000142108547152019193424224853515625 FEET
 0.0000000000000710542735760095967121124267578125 FEET
 0.00000000000003552713678800478835605621337890625 FEET
 0.00000000000001776356839400239417802810668953125 FEET
 0.000000000000008881784197001197089014053344765625 FEET
 0.000000000000004440892098500598544507026687890625 FEET
 0.0000000000000022204460492502992722535133439453125 FEET
 0.00000000000000111022302462514963612666667197265625 FEET
 0.0000000000000005551115123125748180633333359378125 FEET
 0.000000000000000277555756156287409031666672968953125 FEET
 0.0000000000000001387778780781437045158333359344765625 FEET
 0.000000000000000069388939039071852257916667296723828125 FEET
 0.0000000000000000346944695195359261289583335933619140625 FEET
 0.00000000000000001734723475976796306447916667296180703125 FEET
 0.000000000000000008673617379883981532239583335930903515625 FEET
 0.00000000000000000433680868994199076611979166672960451953125 FEET
 0.000000000000000002168404344970995383059895833359302259765625 FEET
 0.000000000000000001084202172485497691529947916667296011298828125 FEET
 0.0000000000000000005421010862427488457649739583335930061494140625 FEET
 0.000000000000000000271050543121374422882486979166672960030723828125 FEET
 0.0000000000000000001355252715606872114412434895833359300153619140625 FEET
 0.000000000000000000067762635780343605720621724479166672960007680953125 FEET
 0.0000000000000000000338813178901718028603108622395833359300038404765625 FEET
 0.000000000000000000016940658945085901430154311197916667296000192023828125 FEET
 0.0000000000000000000084703294725429507150771555989583335930000960119140625 FEET
 0.0000000000000000000042351647362714753575387779947916667296000048005953125 FEET
 0.00000000000000000000211758236813573767876938999739583335930000240029765625 FEET
 0.00000000000000000000105879118406786883893849999369791666729600001200148828125 FEET
 0.000000000000000000000529395592033934444469249996848958333593000006000744140625 FEET
 0.000000000000000000000264697796016967222234624998424479166672960000030003720703125 FEET
 0.00000000000000000000013234889800848361111173124994212395833359300000150018603515625 FEET
 0.00000000000000000000006617444900424180555586562497106197916667296000000750093017578125 FEET
 0.000000000000000000000033087224502120902777932812485530989583335930000003750465087890625 FEET
 0.000000000000000000000016543612251060451388966406242765494791666729600000018752325439453125 FEET
 0.0000000000000000000000082718061255302256944832031221327473958333593000000093761622197265625 FEET
 0.0000000000000000000000041359030627651128472416015610663719791666729600000046880811098828125 FEET
 0.00000000000000000000000206795153138255642362080078053318598958333593000000234404055494140625 FEET
 0.00000000000000000000000103397576569127821181040039026659299479166672960000001172020277470703125 FEET
 0.0000000000000000000000005169878828456391059052001951332964973958333593000000058601013873515625 FEET
 0.000000000000000000000000258493941422819552952600097566648248958333593000000293005069367890625 FEET
 0.000000000000000000000000129246970711409776477630004878332412479166672960000001465025346839453125 FEET
 0.0000000000000000000000000646234853557048882388150024391662062395833359300000007325126734197265625 FEET
 0.00000000000000000000000003231174267785244411940750121958310119791666729600000003662563367098828125 FEET
 0.0000000000000000000000000161558713389262220597037506097915098958333593000000018312816835494140625 FEET
 0.00000000000000000000000000807793566946311102985187503048959479166672960000000091564084177470703125 FEET
 0.00000000000000000000000000403896783473155551492593750152447916667296000000004578204208873515625 FEET
 0.0000000000000000000000000020194839173657777574629687500762239583335930000000022891021044367890625 FEET
 0.0000000000000000000000000010097419586828888787314843750038111979166672960000000011445510522197265625 FEET
 0.00000000000000000000000000050487097934144443936574218750019055989583335930000000005722755261098828125 FEET
 0.00000000000000000000000000025243548967072221968287109375000952799479166672960000000028613776305494140625 FEET
 0.0000000000000000000000000001262177448353611098414355468750004763997395833359300000000143068881527470703125 FEET
 0.00000000000000000000000000006310887241768055492071777343750002381998958333593000000000715344407639453125 FEET
 0.00000000000000000000000000003155443620884027746035888671875000119099947916667296000000003576722038197265625 FEET
 0.00000000000000000000000000001577721810442013873017944335937500059549973958333593000000001788361019098828125 FEET
 0.00000000000000000000000000000788860905221006936508972167187500029774989583335930000000008941805095494140625 FEET
 0.0000000000000000000000000000039443045261050346825448608359375001488749479166672960000000044709025477470703125 FEET
 0.0000000000000000000000000000019721522630525173412724304179687500074437473958333593000000002235451273873515625 FEET
 0.0000000000000000000000000000009860761315262586706362152089843750037218739583335930000000011177256369367890625 FEET
 0.0000000000000000000000000000004930380657631293503181076044946875001860936979166672960000000055886281846839453125 FEET
 0.00000000000000000000000000000024651903288156467515905380224734375009304684895833359300000000279431409234197265625 FEET
 0.000000000000000000000000000000123259516440782337579526901123671875004652342479166672960000000139715704617098828125 FEET
 0.00000000000000000000000000000006162975822039116878976345056183593750023261712395833359300000000698578523085494140625 FEET
 0.00000000000000000000000000000003081487911019558439488172528091796875001163085619791666729600000003492892615427470703125 FEET
 0.0000000000000000000000000000000154074395550977921974408626404589843750058154280989583335930000000174644630771367890625 FEET
 0.000000000000000000000000000000007703719777548896098722031320229494687500290771404479166672960000000873223153856839453125 FEET
 0.000000000000000000000000000000003851859888774448049361015640114724739583335930000000043661157692846839453125 FEET
 0.000000000000000000000000000000001925929944387224024680507820057361895833359300000000218305788464234197265625 FEET
 0.00000000000000000000000000000000096296497219361201234025391000286809895833359300000001091528942321197265625 FEET
 0.000000000000000000000000000000000481482486096806006170126955001434049479166672960000000545764471160598828125 FEET
 0.0000000000000000000000000000000002407412430484030030850634775007172047395833359300000002728822355802994140625 FEET
 0.00000000000000000000000000000000012037062152420150154253173875003586023958333593000000013644111779014970703125 FEET
 0.000000000000000000000000000000000060185310762100750771265869375001793011979166672960000000682205588950748515625 FEET
 0.00000000000000000000000000000000003009265538105037538563293468750008965059895833359300000003411027944753742578125 FEET
 0.000000000000000000000000000000000015046327690525187692816467343750044825299479166672960000001705513972376871140625 FEET
 0.0000000000000000000000000000000000075231638452625938346402336718750022412649791666729600000008527569861883670703125 FEET
 0.00000000000000000000000000000000000376158192263129691732011683593750011206324895833359300000004263784930941839453125 FEET
 0.0000000000000000000000000000000000018807909613156484586600584179687500560316244791666729600000021318924654709197265625 FEET
 0.000000000000000000000000000000000000940395480657824229330029208984375002801581239583335930000001065946232735494140625 FEET
 0.0000000000000000000000000000000000004701977403289121146650146044946875001400790619791666729600000053297311636723828125 FEET
 0.000000000000000000000000000000000000235098870164456057332507302247343750070039530989583335930000002664865581836197265625 FEET
 0.00000000000000000000000000000000000011754943508222802866625365112367187500350197654947916667296000001332432790918098828125 FEET
 0.00000000000000000000000000000000000005877471754111401433312682556183593750017509882739583335930000006662163954594140625 FEET
 0.00000000000000000000000000000000000002938735877055700716656341278091796875008754941404791666729600000333108197727970703125 FEET
 0.00000000000000000000000000000000000001469367938527850358328170639045898437504377470723958333593000001665540988639453125 FEET
 0.0000000000000000000000000000000000000073468396926392517916408531952294946875021887353697916667296000008327704943197265625 FEET
 0.00000000000000000000000000000000000000367341984631962589582042659761472473958333593000004163852471598828125 FEET
 0.00000000000000000000000000000000000000183670992315981294791021329880736189583335930000020819262357994140625 FEET
 0.0000000000000000000000000000000000000009183549615799064739551066494403809895833359300000104096311789970703125 FEET
 0.0000000000000000000000000000000000000004591774807899532369775533247201954947916667296000005204815589498515625 FEET
 0.00000000000000000000000000000000000000022958874039497661848877666236109774739583335930000026024077947492578125 FEET
 0.000000000000000000000000000000000000000114794370197488309244388331180548895833359300000130120389737462890625 FEET
 0.0057397185098744154622194165590274447916667296000006506019486873515625 FEET
 0.00286985925493720773110970827951372239583335930000032530097434367890625 FEET
 0.0014349296274686038655548541397566361895833359300000162650487171839453125 FEET
 0.000717464813734301932777427069878318958333593000000813252435859197265625 FEET
 0.000358732406867150966388713534939159895833359300000406626217929598828125 FEET
 0.00017936620343357548319435676986957994791666729600002033131089647970703125 FEET
 0.008968310171678774159717838493497899479166672960000101656554482398515625 FEET
 0.004484155085839387079858919246748899479166672960000508282772411992578125 FEET
 0.00224207754291969353992945962337444494791666729600002541413862059962890625 FEET
 0.00112103877145984676996472981168722247395833359300001270706931029981440625 FEET
 0.0005605193857299233849823649058443611979166672960000635353465514994140625 FEET
 0.0002802596928649616924911824529221809895833359300003176767327574970703125 FEET
 0.0001401298464324808462455912264610904947916667296000158



SCALE 1/24000
 CONTOUR INTERVAL 40 FEET
 DOTTED LINES REPRESENT 10 FOOT CONTOURS

**Kapolei Sports and
 Recreation Center
 Project**
 Ewa, Oahu
 State of Hawaii, DAGS

LEGEND:

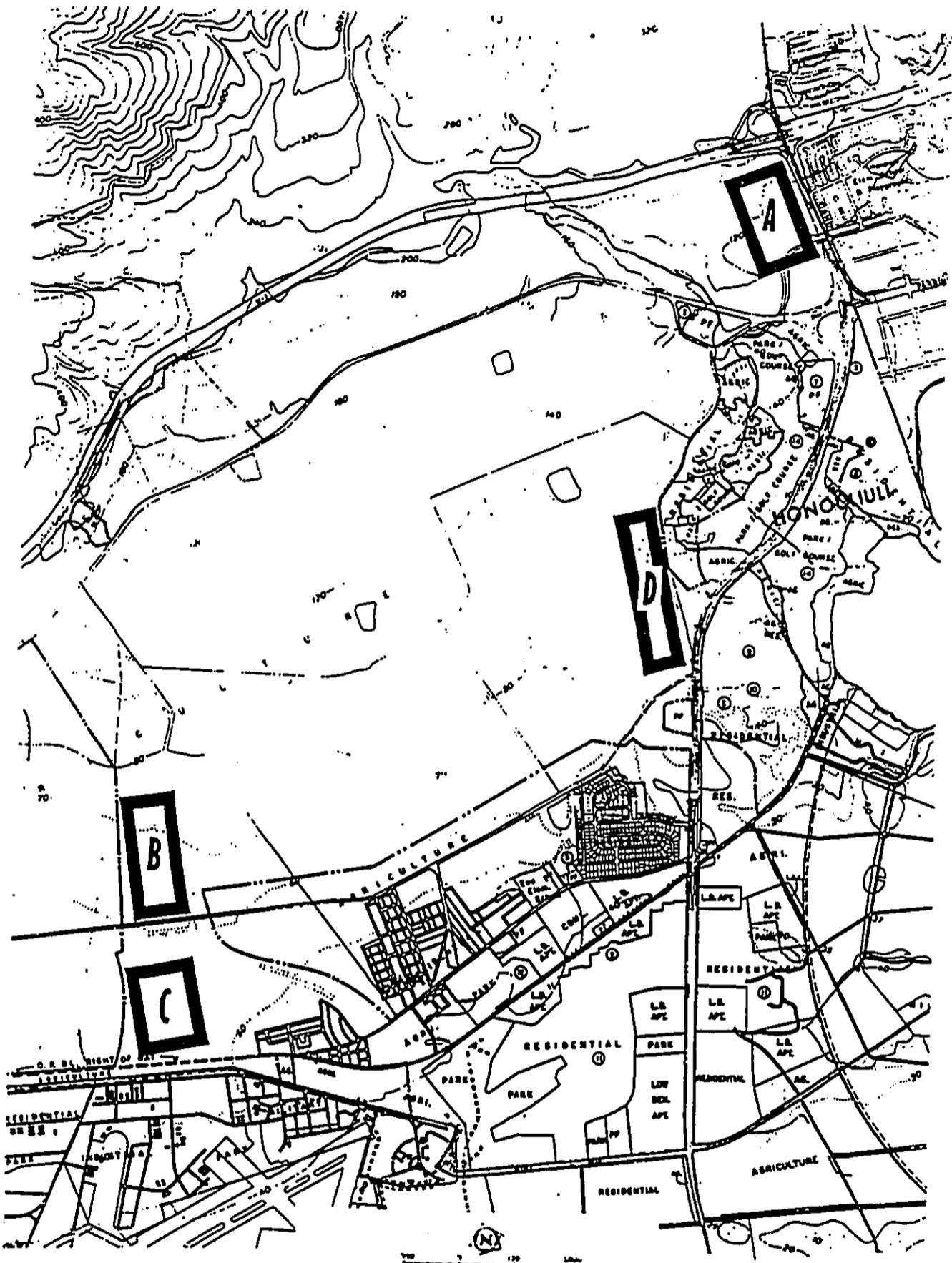
 100 year Flood Plain

0 1,000 2,000 4,000
 SCALE IN FEET

FIGURE 7

FLOOD MAP

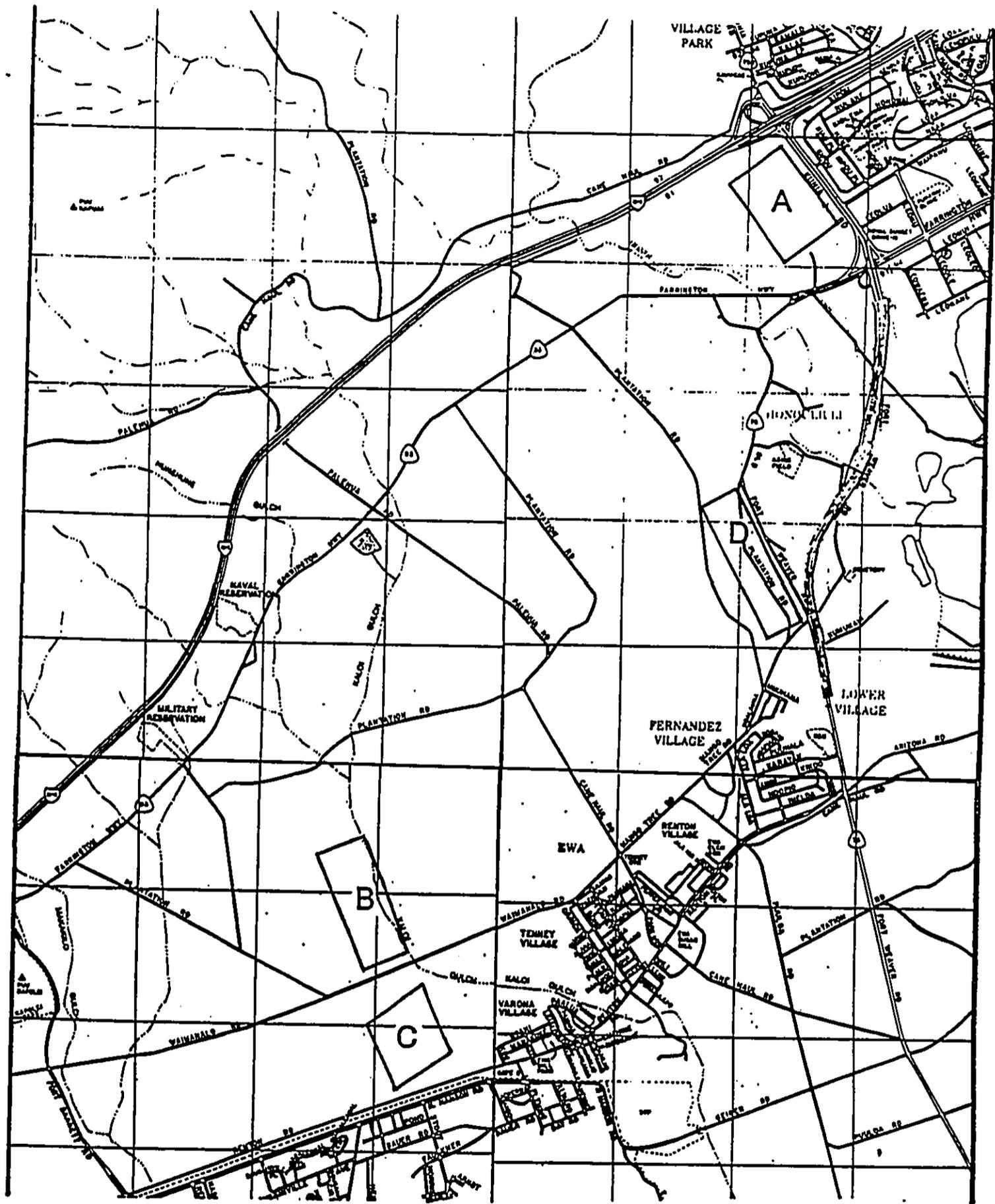
R.M. TOWILL CORPORATION



Kapolei Sports and Recreation Center Project
 Ewa, Oahu
 State of Hawaii, DAGS

- LEGEND**
- PRESERVATION
 - AGRICULTURE
 - RESIDENTIAL APARTMENT
 - LOW DENSITY
 - MEDIUM DENSITY
 - HIGH DENSITY RESORT
 - COMMERCIAL
 - INDUSTRIAL
 - PARKS AND RECREATION
 - MILITARY
 - PUBLIC FACILITIES
 - DP BOUNDARY
 - STATE LAND USE BOUNDARY
 - UNLAWFUL MILITARY BOUNDARY

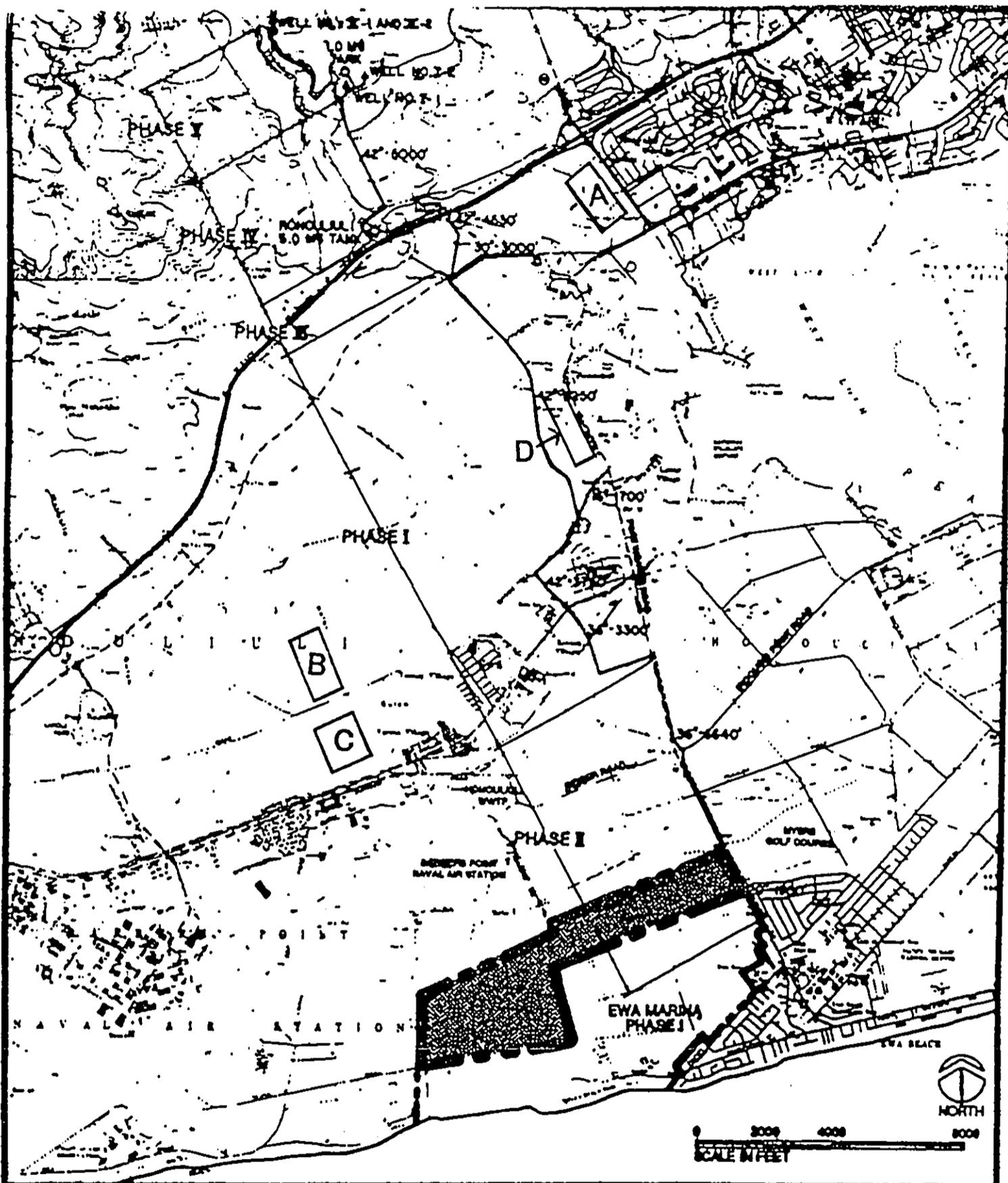
Figure 8A
 ORDINANCE NO. 81-80 DATE: NOV. 25, 1981
DEVELOPMENT PLAN
LAND USE MAP
EWA



**KAPOLEI SPORTS AND
RECREATION CENTER**
Ewa, Oahu
State of Hawaii, DAGS

**FIGURE 9
ROADS AND HIGHWAYS**

MPAC INC



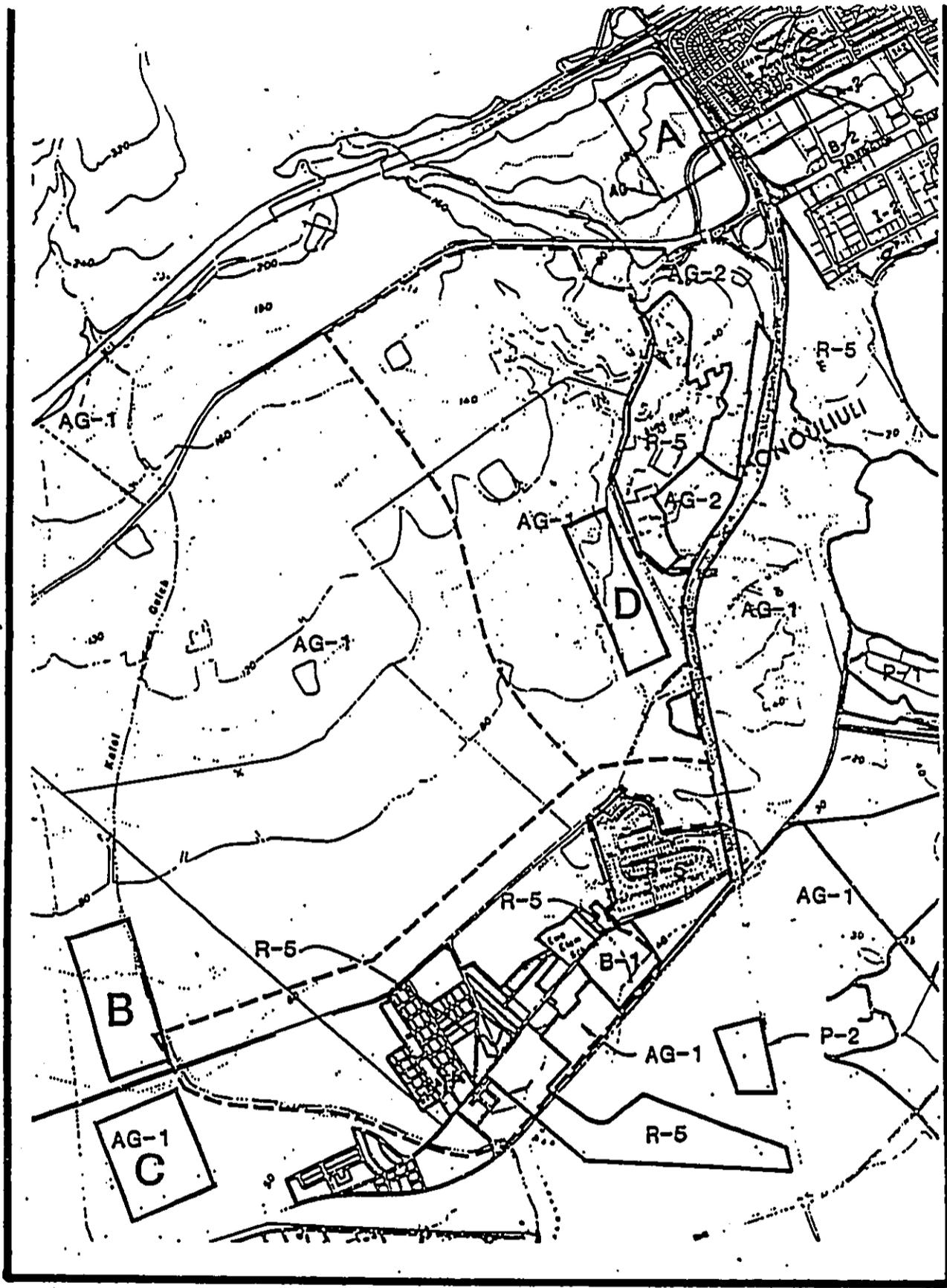
Construction Status

- Work Completed
- - - - - Work Under Construction

**KAPOLEI SPORTS
AND RECREATION
CENTER PROJECT**
Ewa, Oahu
State of Hawaii, DAGS

FIGURE 10
**EWA PLAIN WATER DEVELOPMENT
CORP.- WATER FACILITIES MAP**

Prepared by: Bek Collins & Assoc.
Prepared for: HASEKO (Hawaii), Inc.
Date: November 1966



**Kapolei Sports and
Recreation Center
Project**

Ewa, Oahu
State of Hawaii, DAGS

LEGEND:

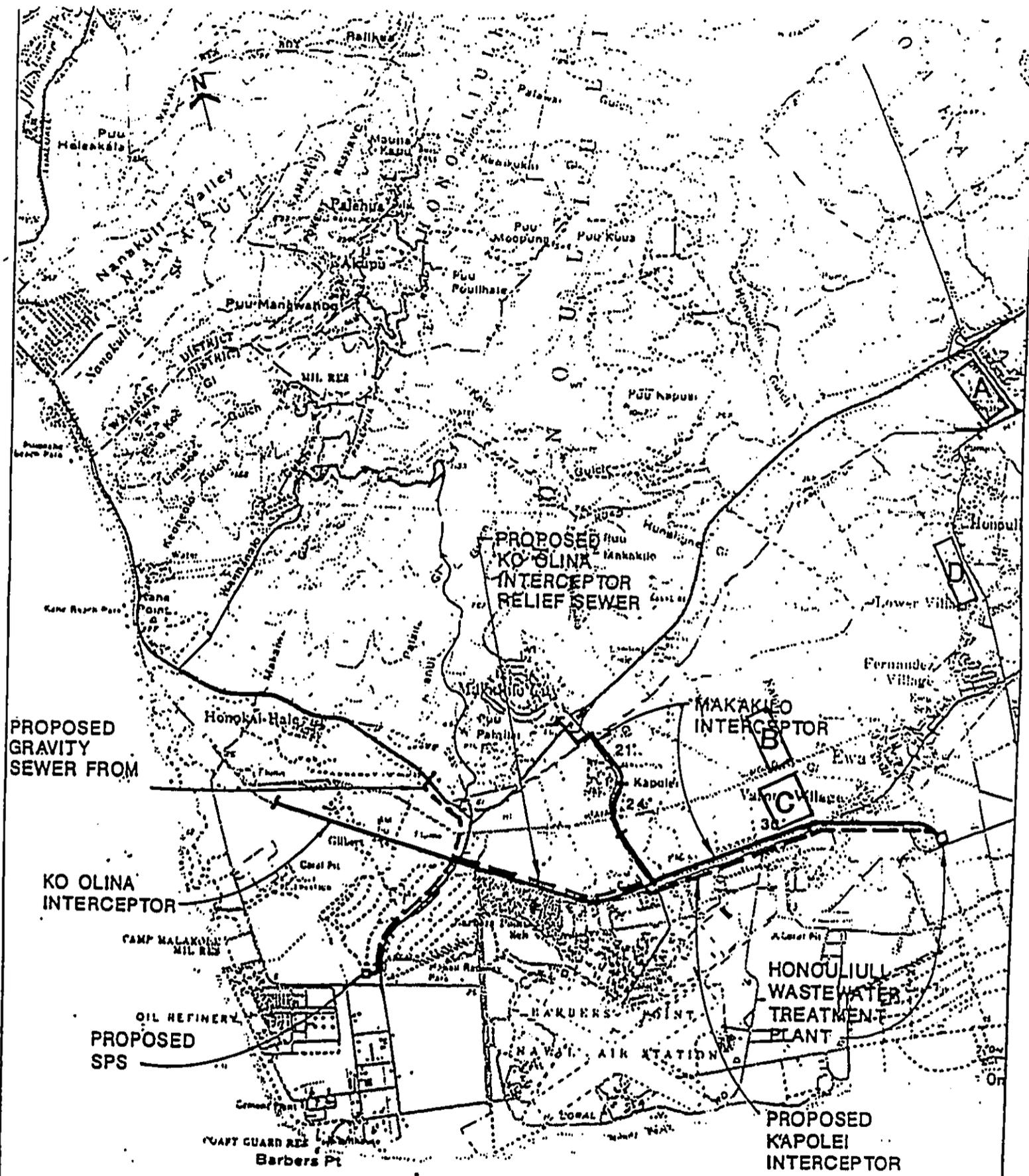
P-1, Preservation
AG-1, AG-2 Agriculture
R-5 Residential
B-1, B-2 Business



FIGURE 11

Zoning Map

R. M. Towill Corporation



KAPOLEI SPORTS AND RECREATION CENTER PROJECT
 ALTERNATIVE SITES A, B, C, D
 GRAPHIC SCALE

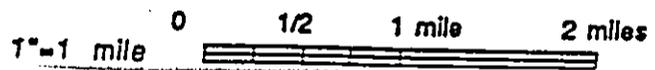
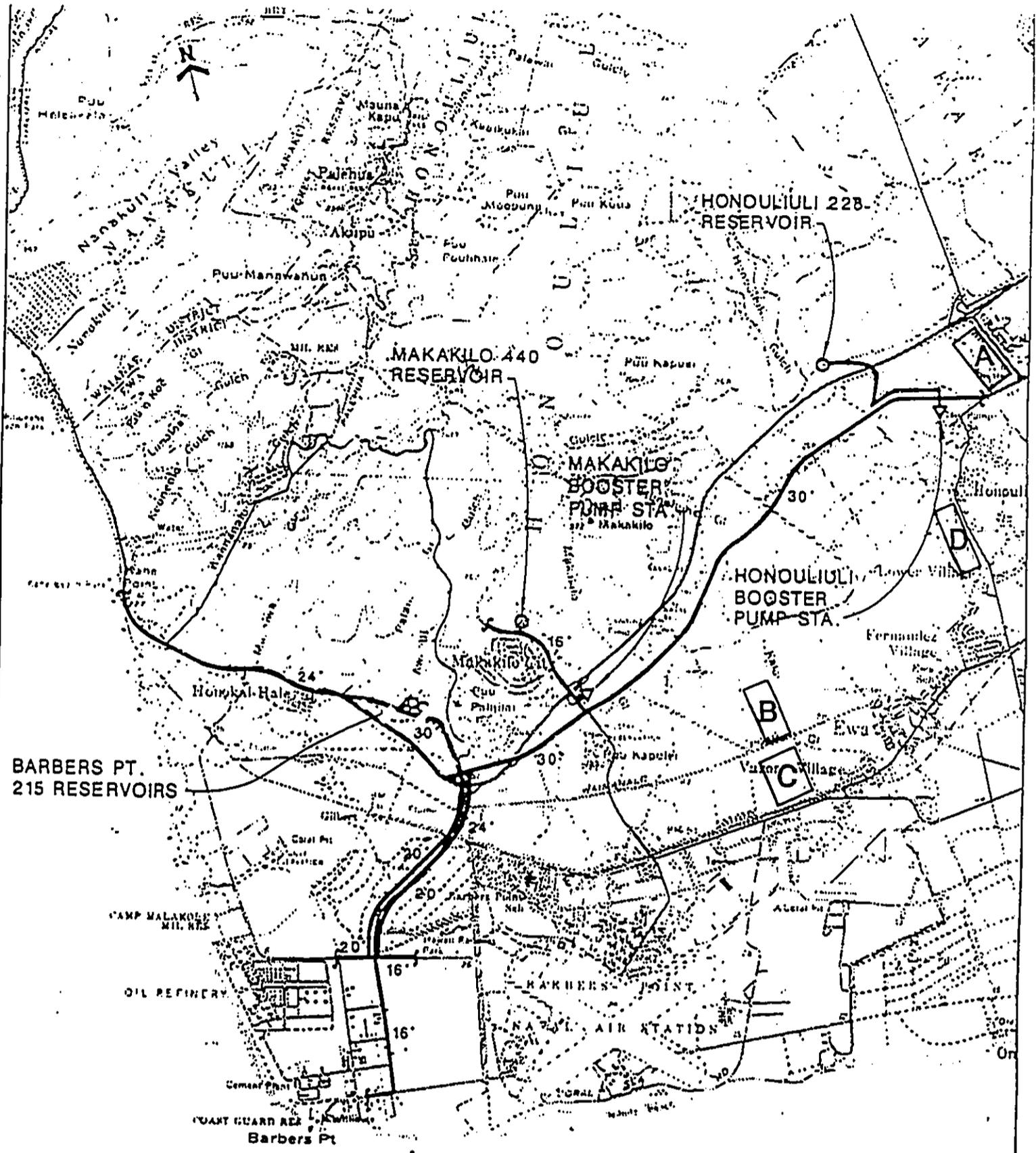


FIGURE 12
REGIONAL WASTEWATER FACILITIES
 PREPARED BY: ENGINEERING CONCEPTS, INC.
 DATE: OCTOBER, 1966



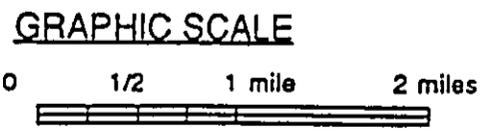
BARBERS PT.
215 RESERVOIRS

MAKAKILO 440
RESERVOIR

HONOULIULI 228
RESERVOIR

MAKAKILO
BOOSTER
PUMP STA.

HONOULIULI
BOOSTER
PUMP STA.



**KAPOLEI SPORTS AND
RECREATION CENTER
PROJECT**
ALTERNATIVE SITES A, B, C, D

FIGURE 13
**REGIONAL POTABLE
WATER SYSTEM**
PREPARED BY: ENGINEERING CONCEPTS, INC
DATE: OCTOBER, 1966

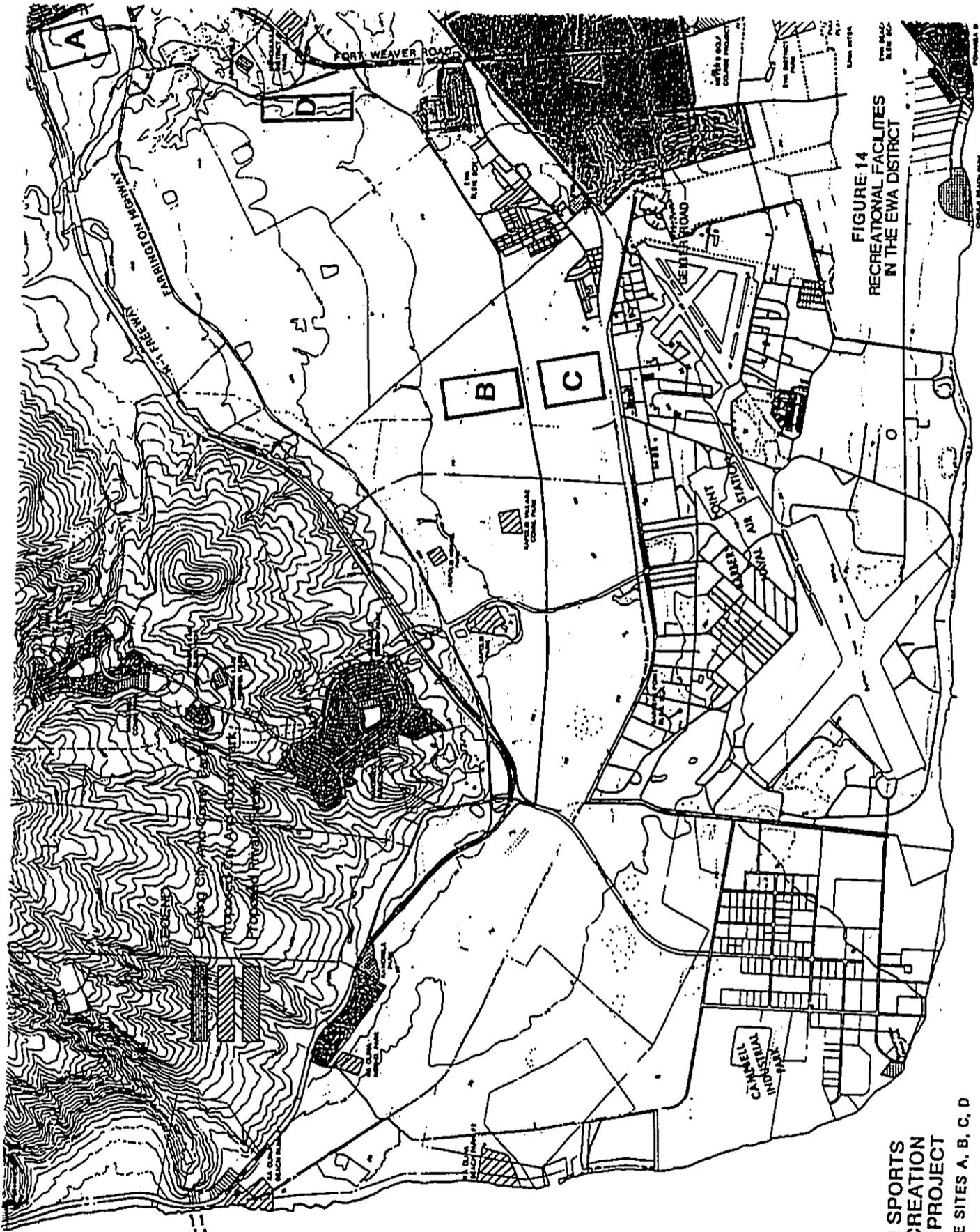


FIGURE 14
RECREATIONAL FACILITIES
IN THE EWA DISTRICT

KAPOLEI SPORTS
AND RECREATION
CENTER PROJECT
ALTERNATIVE SITES A, B, C, D

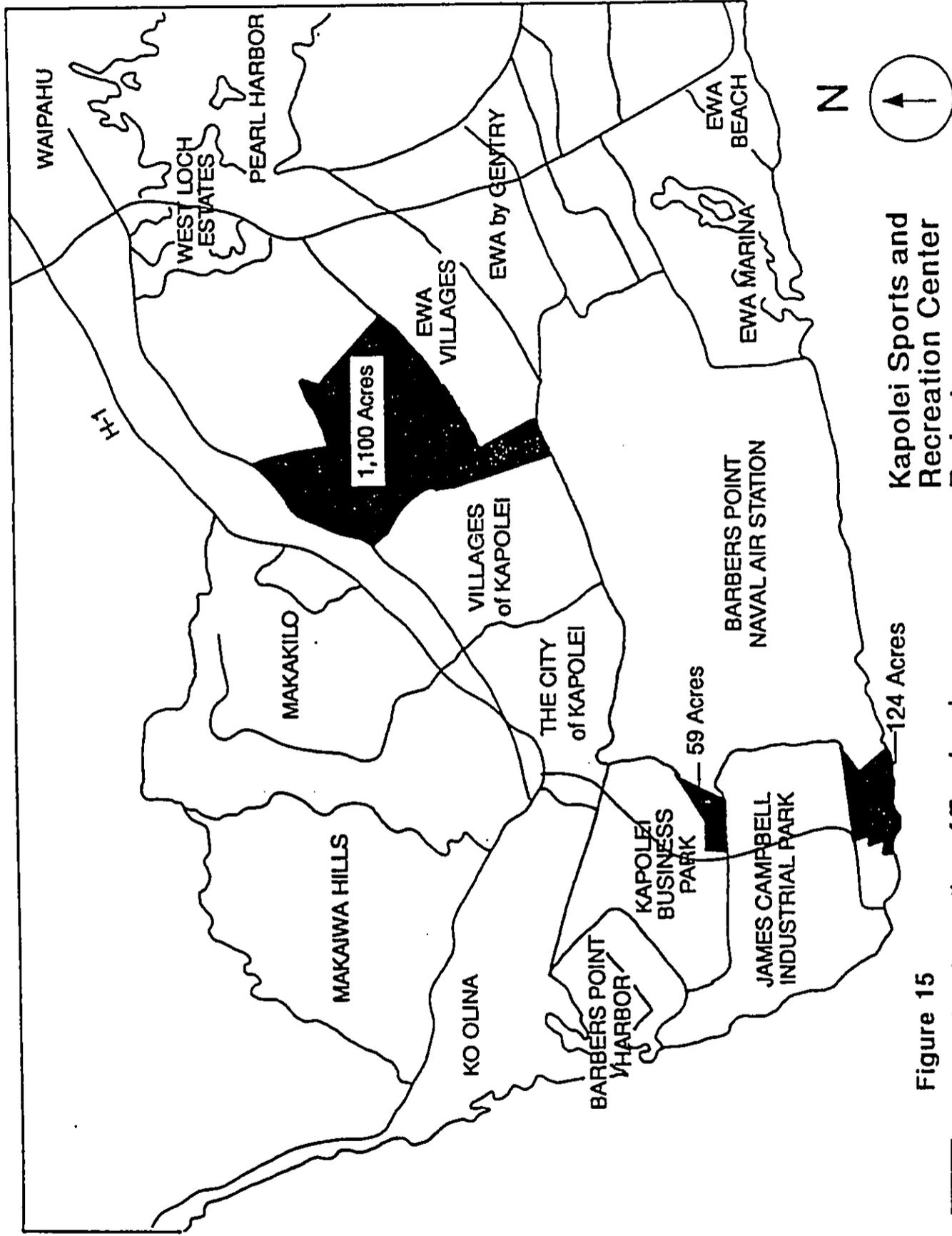


Figure 15

■ = State Condemnation of Ewa Land

Kapolei Sports and
Recreation Center
Project

Ewa, Oahu
State of Hawaii, DAGS

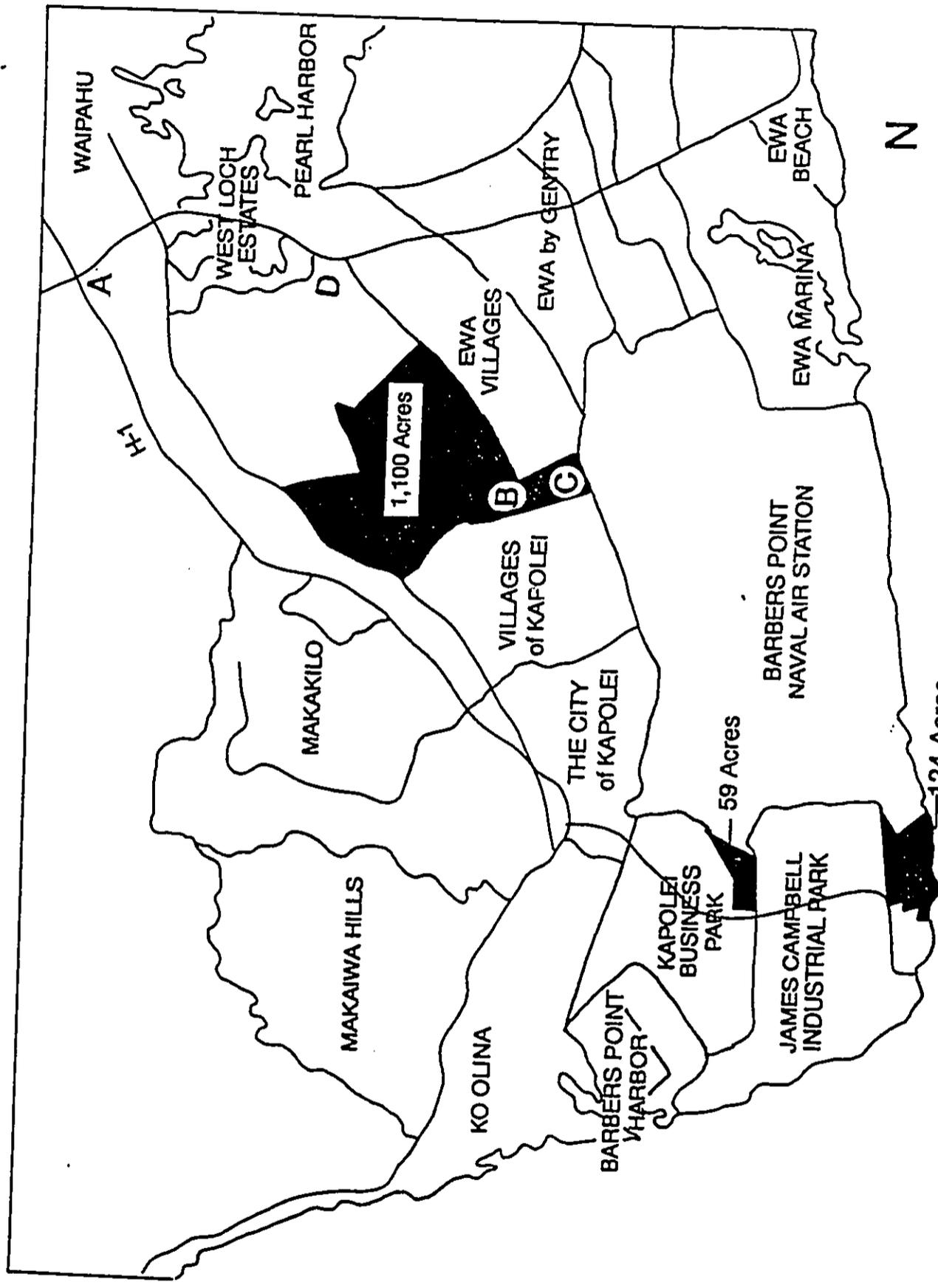


Figure 15A
 = State Condemnation of Ewa Land
 ALTERNATIVE SITES A, B, C, D

Kapolei Sports and Recreation Center Project
 Ewa, Oahu
 State of Hawaii, DAGS

Appendix D

Aerial Map of Project Area Kapolei Long Range Master Plan



AERIAL MAP

(REPRODUCED FROM REPORT ON EWA MARINA BY NIEFER, OSHIMA, CHUN, FONG & CHUNG NOV 1990)

Kapolei Sports and Recreation Center Project

Ewa, Oahu
State of Hawaii, USA
ALTERNATIVE SITES A, B, C, D

0 2000 4000 6000 8000
Scale in Feet



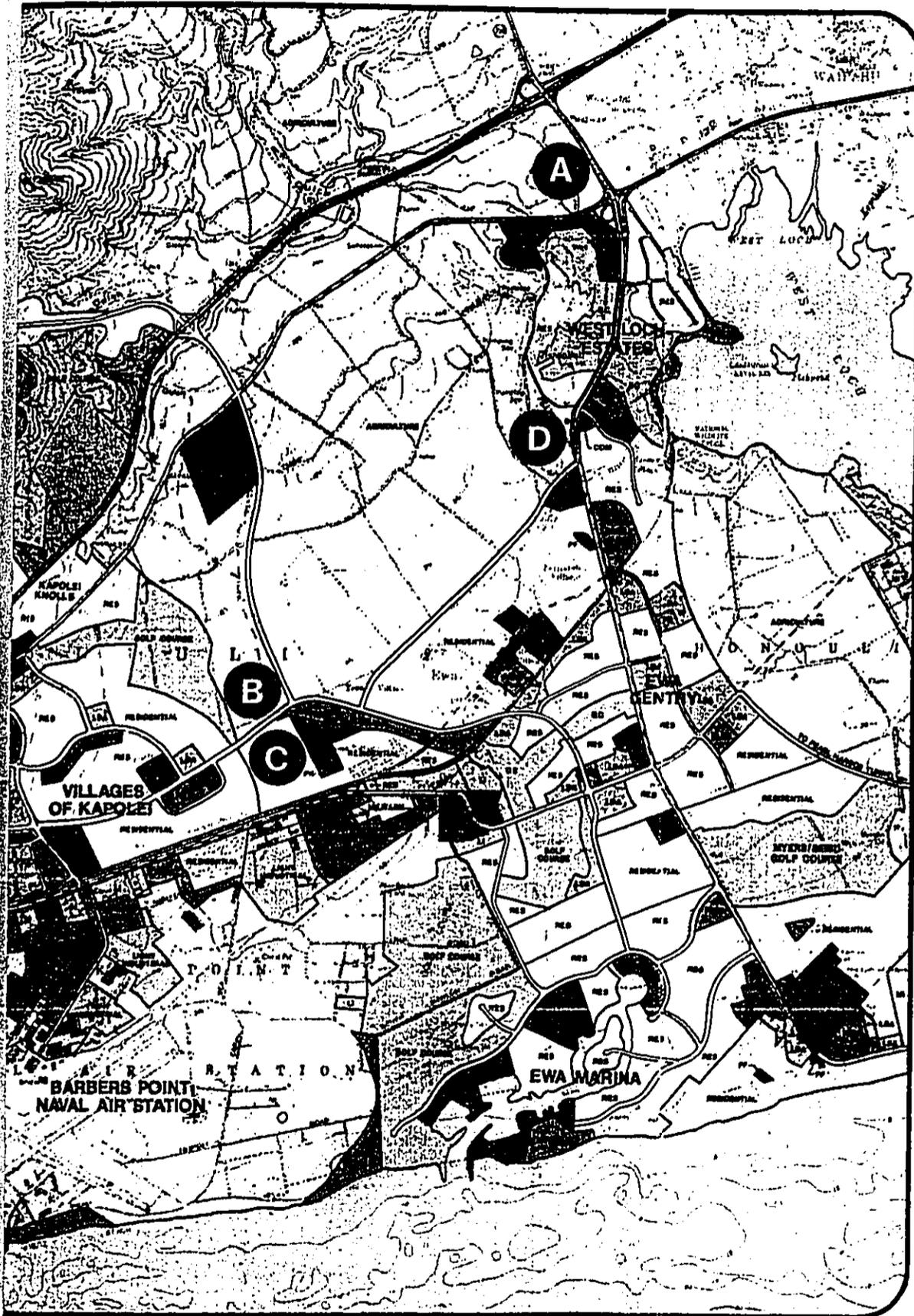
Date of photo: February, 1989



KAPOLEI SPORTS AND RECREATION CENTER PROJECT ALTERNATIVE SITES A, B, C, D

KAPOLEI LONG RANGE MASTER PLAN
SCALE AS NOTED

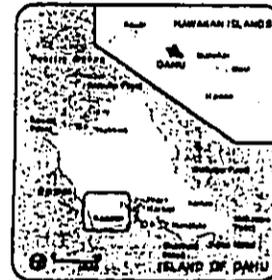
RECEIVED AS FOLLOWS



Kapolei Area Long Range Master Plan

Kwa, Oahu, Hawaii

THE ESTATE OF JAMES CAMPBELL



LAND USE CLASSIFICATION

- RESIDENTIAL
- LOW DENSITY APARTMENT
- MEDIUM DENSITY APARTMENT
- COMMERCIAL/OFFICE
- LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL
- RESORT
- PARK
- MIXED USE
- PUBLIC FACILITY
- GOLF COURSE
- PRESERVATION
- AGRICULTURE
- MILITARY

ROADWAY CLASSIFICATION

- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- EXISTING AND PROPOSED ROADWAYS
- PROPOSED TRANSIT ALIGNMENT

© 1989 The Estate of James Campbell



APRIL 1990

HELBER, HASTERT & KRAURA

PROJECT

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII
HONOLULU, HAWAII

PREPARED BY:
MITSUNAGA & ASSOCIATES, INC.
HONOLULU, HAWAII

Appendix E

Tables and Figures

TABLE 3.4.1

NORMAL CLIMATOLOGY AT BARBERS POINT

| Month | Temperature (°C) | | | | Precipitation (cm) | | | % Rel Hum | AVG Dew Pt (°C) | Bar Pres (mb) | Wind | | | AVG Trw Days ^c | | | | |
|--------|------------------|------|---------|------|--------------------|------|------|----------------|-----------------|---------------|------|-------|------|---------------------------|-----------|------|-----|----|
| | Average | | Extreme | | AVG | MAX | MIN | | | | Dir | Speed | | | AVG Cld % | | | |
| | Max | Min | Max | Min | | | | | | | | Avg | Max | | | | | |
| Jan | 26.1 | 18.9 | 22.8 | 30.6 | 10.0 | 11.2 | 35.8 | 1.3 | 13.5 | 82 | 64 | 17.2 | 999 | NE | 4.1 | 30.9 | 0.5 | 1 |
| Feb | 26.1 | 18.3 | 22.2 | 30.6 | 11.1 | 6.1 | 25.4 | T ^a | 11.7 | 81 | 63 | 16.7 | 1003 | NE | 4.1 | 26.2 | 0.5 | 1 |
| Mar | 26.1 | 18.9 | 22.8 | 30.6 | 12.2 | 6.4 | 43.9 | 0.3 | 26.7 | 80 | 61 | 17.2 | 1005 | NE | 4.1 | 19.5 | 0.5 | •d |
| Apr | 26.7 | 20.0 | 23.3 | 30.6 | 12.2 | 3.8 | 30.5 | T | 9.9 | 79 | 60 | 17.2 | 1005 | NE | 4.6 | 20.1 | 0.5 | 1 |
| May | 27.8 | 20.6 | 24.4 | 32.2 | 16.1 | 2.3 | 21.6 | T | 8.1 | 79 | 59 | 17.8 | 1009 | NE | 4.1 | 19.5 | 0.5 | • |
| Jun | 28.9 | 21.7 | 25.0 | 32.2 | 16.1 | 0.8 | 5.1 | T | 3.6 | 77 | 58 | 18.3 | 999 | NE | 4.1 | 20.1 | 0.5 | • |
| Jul | 29.4 | 22.2 | 26.1 | 33.3 | 17.8 | 0.8 | 3.0 | T | 3.0 | 78 | 58 | 18.9 | 1010 | NE | 4.6 | 19.0 | 0.5 | • |
| Aug | 28.4 | 22.8 | 26.1 | 34.4 | 16.1 | 0.8 | 5.3 | T | 4.8 | 76 | 57 | 19.4 | 1009 | NE | 4.6 | 23.1 | 0.5 | • |
| Sep | 30.0 | 22.2 | 26.1 | 33.9 | 17.2 | 1.0 | 4.3 | T | 3.6 | 78 | 58 | 19.4 | 1007 | NE | 4.1 | 21.6 | 0.4 | • |
| Oct | 28.9 | 21.7 | 25.6 | 32.8 | 16.1 | 3.6 | 31.2 | T | 20.1 | 80 | 60 | 19.4 | 1007 | NE | 4.1 | 18.5 | 0.5 | • |
| Nov | 27.8 | 21.1 | 24.4 | 31.7 | 13.9 | 7.4 | 29.7 | T | 17.8 | 81 | 61 | 18.9 | 1005 | NE | 4.1 | 24.2 | 0.5 | 1 |
| Dec | 26.7 | 19.4 | 23.3 | 31.1 | 11.7 | 7.4 | 20.3 | 0.3 | 11.9 | 80 | 62 | 17.8 | 1003 | NE | 4.1 | 23.1 | 0.5 | 1 |
| Annual | 27.8 | 20.6 | 24.4 | 34.4 | 10.0 | 4.1 | 43.9 | T | 26.7 | 79 | 60 | 18.3 | 1005 | NE | 4.1 | 30.9 | 0.5 | 6 |

a T = Trace

b Relative humidity at Hawaiian standard time 0400 and 1300 hours.

c Average thundershower days

d • = Less than 0.5 days

Reference: U.S. Navy, 1981, 1982 Climatological, astronomical and tidal data for the Hawaiian Islands - Barbers Point climatology, compiled from data January 1949 through September 1979, Naval Oceanography Command, NAWESTOCEANEN.

Table 3.4.2

**SUMMARY OF STATE OF HAWAII AND FEDERAL
AMBIENT AIR QUALITY STANDARDS**

| POLLUTANT | SAMPLING PERIOD | FEDERAL STANDARDS | | STATE STANDARDS |
|--|---|-------------------|-----------|-----------------|
| | | PRIMARY | SECONDARY | |
| 1. Total Suspended Particulate Matter (TSP) (micrograms per cubic meter) | Annual Geometric Mean | 75 | 60 | 60 |
| | Maximum Average in any 24 Hours | 260 | 150 | 150 |
| 2. PM-10 (micrograms per cubic meter) | Annual | 50 | 50 | - |
| | Maximum Average in any 24 hours | 150 | 150 | - |
| 3. Sulfur Dioxide (SO ₂) (micrograms per cubic meter) | Annual Arithmetic Mean | 80 | - | 80 |
| | Maximum Average in any 24 hours | 365 | - | 365 |
| | Maximum Average in any 3 hours | | 1,300 | 1,300 |
| 4. Nitrogen Dioxide (NO ₂) (micrograms per cubic meter) | Annual Arithmetic Mean | | 100 | 70 |
| | | | | |
| 5. Carbon Monoxide (CO) (micrograms per cubic meter) | Maximum Average in Any 8 Hours | | 10 | 5 |
| | Maximum Average in any 1 hour | | 40 | 10 |
| 6. Photochemical Oxidants (as O ₃) (micrograms per cubic meter) | Maximum Average in Any 1 Hour | | 240 | 100 |
| | | | | |
| 7. Lead (Pb) (micrograms per cubic meter) | Maximum Average in Any Calendar Quarter | | 1.5 | 1.5 |
| | | | | |

Table 3.4.2A

STATE OF HAWAII
ANNUAL SUMMARY OF HAWAII AIR MONITORING STATION 5 - 24-HOUR SAMPLING

| | Barbers Point, Oahu | | | | | Pearl City, Oahu | | | | |
|---|---------------------|--------|--------|--------|------|------------------|-------|-------|-------|-------|
| | 1982 | 1983 | 1984 | 1985 | 1986 | 1982 | 1983 | 1984 | 1985 | 1986 |
| ARTICULATE MATTER ($\mu\text{g}/\text{m}^3$) | | | | | | | | | | |
| <u>Parameters</u> | | | | | | | | | | |
| a. Period of sampling (mos.) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| b. Number of samples | 52 | 40 | 42 | - | 52 | 52 | 55 | 56 | 60 | 60 |
| c. Range of values | 15-63 | 28-193 | 17-112 | 24-138 | 7-66 | 19-54 | 17-57 | 16-45 | 17-65 | 17-65 |
| d. Arith. average of values | 41 | 55 | 50 | 57 | 26 | 31 | 30 | 28 | 30 | 30 |
| e. No. of Days State AQS* exceeded ($100 \mu\text{g}/\text{m}^3$) | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |

SULFUR DIOXIDE ($\mu\text{g}/\text{m}^3$)

| <u>Parameters</u> | | | | | | | | | | |
|--|------|------|-----|------|------|------|-----|-----|------|------|
| a. Period of sampling (mos.) | 12 | 11 | 12 | 12 | 12 | 12 | 12 | 12 | 10** | 10** |
| b. Number of samples | 55 | 44 | 42 | - | 56 | 43 | 50 | 42 | 5-5 | 5-5 |
| c. Range of values. | 5-12 | 5-95 | 5-5 | 5-25 | 5-10 | 5-10 | 5-5 | 5-5 | 5 | 5 |
| d. Arith. average of values | 5 | 7 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 |
| e. No. of days State AQS* exceeded ($80 \mu\text{g}/\text{m}^3$) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Particulate matter = $100 \mu\text{g}/\text{m}^3$; sulfur dioxide = $80 \mu\text{g}/\text{m}^3$.

** Discontinued on 10/10/84

Table 3.5
SUMMARY OF FEDERAL NOISE GUIDELINES AND STANDARDS

NOISE ZONE CLASSIFICATION

| Noise Exposure Class | Noise Descriptor | | | HUD Noise Standards For New Residential Development |
|----------------------|---|---|---|---|
| | DNL ¹ Day-Night Average Sound Level | L _{eq} (hour) ³ Equivalent Sound Level | NEF ⁴ Noise exposure forecast | |
| Minimal Exposure | Not Exceeding 55 | Not Exceeding 55 | Not Exceeding 20 | "Acceptable" |
| Moderate Exposure | Above 55 ² But Not Exceeding 65 | Above 55 But Not Exceeding 65 | Above 25 But Not Exceeding 30 | |
| Significant Exposure | Above 65 Not Exceeding 70 | Above 65 Not Exceeding 70 | Above 30 Not Exceeding 35 | "Normally Unacceptable" |
| | Above 70 But Not Exceeding 75 | Above 70 But Not Exceeding 75 | Above 35 But Not Exceeding 40 | |
| Severe Exposure | Above 75 But Not Exceeding 80 | Above 75 But Not Exceeding 80 | Not Exceeding 45 | "Unacceptable" |
| | Above 80 But Not Exceeding 85 | Above 80 But Not Exceeding 85 | Above 45 But Not Exceeding 50 | |
| | Above 85 | Above 85 | Above 50 | |

¹CNEL - Community Noise Equivalent Level (California only) uses the same values.

²HUD, DOT, and EPA recognize L_{eq} = 55 dB as a goal for outdoors in residential areas in protecting the public health and welfare with an adequate margin of safety (Reference: EPA "Levels" Document.) However, it is not a regulatory goal. It is a level defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

³The Federal Highway Administration (FHWA) noise policy uses this descriptor as an alternative to L₁₀ (noise level exceeded ten percent of the time) in connection with its policy for highway noise mitigation. The L_{eq}(design hour) is equivalent to DNL hours; 2) traffic between 10 p.m. and 7 a.m. does not exceed fifteen percent of the average daily traffic flow in vehicles per 24 hours. Under these conditions DNL equals L₁₀ - 3 decibels.

⁴For use in airport environs only; is now being superceded by DNL.

Source: Federal Interagency Committee on Urban Noise - "Guidelines for Considering Noise in Land Use Planning and Control" - NIOS P88-214124, June 1981.

**Table 3.5A ALLOWABLE NOISE LEVELS FOR VARIOUS ZONING DISTRICTS
COMMUNITY NOISE CONTROL FOR OAHU
STATE OF HAWAII, DEPARTMENT OF HEALTH**

NOTE: THE REGULATION STATES THAT THE ALLOWABLE LEVELS SHALL NOT BE EXCEEDED FOR TEN PERCENT OF THE TIME WITHIN ANY TWENTY MINUTES

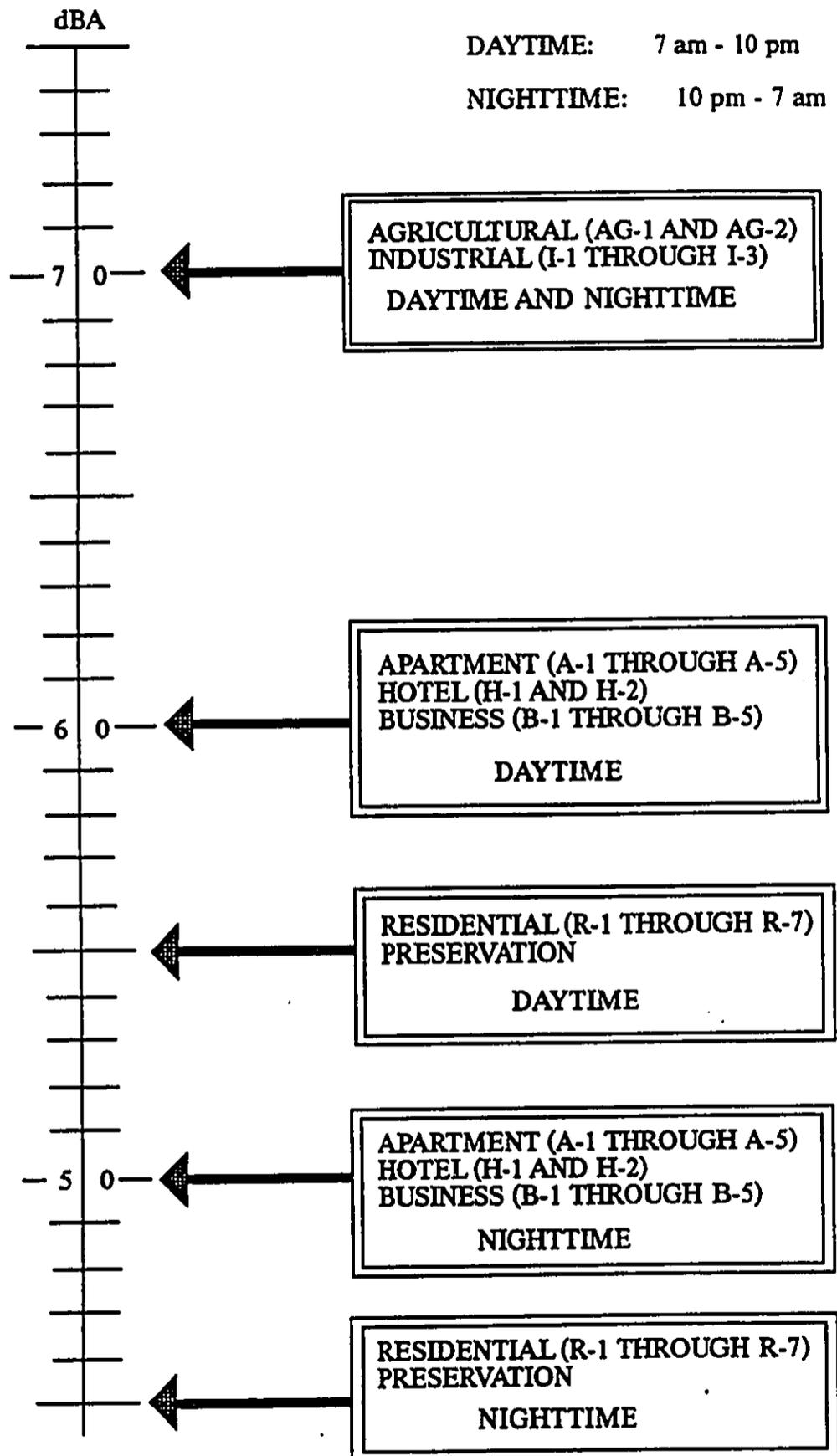


Table 3.11.1

**PROJECTED POPULATION INCREASE FOR WEST OAHU
1989 - 2010**

| | <u>Pearl City/ Halawa</u> | <u>Ewa</u> | <u>Central</u> | <u>Waianae</u> | <u>Total</u> | <u>Increase</u> |
|------|-------------------------------|------------|----------------|----------------|--------------|-----------------|
| 1989 | 85,000 | 37,796 | 117,646 | 35,337 | 275,779 | — |
| 1990 | 85,225 | 40,201 | 118,634 | 35,737 | 279,797 | 4,018 |
| 1991 | 85,450 | 43,554 | 120,876 | 36,269 | 286,149 | 10,370 |
| 1992 | 85,675 | 46,688 | 122,704 | 36,744 | 291,811 | 16,032 |
| 1993 | 85,900 | 50,773 | 125,046 | 37,225 | 298,944 | 23,165 |
| 1994 | 86,125 | 54,418 | 127,609 | 37,676 | 305,828 | 30,049 |
| 1995 | 86,350 | 57,805 | 130,120 | 38,061 | 312,336 | 36,557 |
| 2000 | 87,475 | 72,695 | 139,218 | 38,904 | 338,292 | 62,513 |
| 2005 | 88,600 | 90,716 | 147,901 | 39,726 | 366,943 | 91,164 |
| 2010 | 89,505 | 117,015 | 156,647 | 40,537 | 403,704 | 127,925 |

Source: City and County of Honolulu, Department of General Planning,
September 1989 Projections

* Annual numbers for Pearl City/Halawa are estimated from 1985 and 2010 endpoint data.

TABLE 3.11.8

LABOR FORCE SIZE AND CHARACTERISTICS
(1980)

| | <u>City & County of Honolulu</u> | <u>Ewa D.P. Area (C.T. 83-86.02)</u> |
|---|--|--|
| POTENTIAL LABOR FORCE (Aged 16 +/-) | 574,903 | 23,862 |
| not in labor force | 30.8% | 31.9% |
| armed forces | 10.1 | 18.5 |
| civil, labor force | 59.1 | 49.5 |
| CIVIL LABOR FORCE | 339,863 | 11,821 |
| unemployed | 4.6% | 8.0% |
| TOTAL EMPLOYED CIVIL LABOR FORCE | 324,113 | 10,873 |
| OCCUPATION | | |
| service | 17.6% | 19.5% |
| manager/professional | 24.7 | 14.2 |
| technical, sales & admin. | 33.8 | 31.0 |
| farm/fish/forest | 1.8 | 3.9 |
| precision, craft, repair | 11.3 | 15.5 |
| INDUSTRIAL (selected) | | |
| agric., forest, fish, mining | 1.7 | 6.1 |
| construction | 6.6 | 7.5 |
| manufacturing | 7.7 | 12.0 |
| retail trade | 20.5 | 20.1 |
| financial, insurance, real estate | 8.1 | 5.2 |
| personal, entertain. & rec. svcs. | 8.1 | 5.9 |
| health, educ., and professional | 18.5 | 12.7 |
| public adminis. | 10.9 | 13.4 |

(NOTES: All figures based on 15 percent sample; hence, numbers represent estimates. SOURCE: Community Resources, Inc., 1986.)

TABLE 3.11.9.2

ANTICIPATED EMPLOYMENT GENERATION OF
DEVELOPMENT PROPOSALS IN EWA
1988 - 2005

| Proposed Development Project | Anticipated New Jobs |
|------------------------------|-------------------------|
| Campbell Industrial Park | 4,000 |
| Barbers Point Harbor | 2,000 |
| Ko Olina | 5,100 |
| Kapolei Town Center | 12,500 |
| Ewa Marina | 800 |
| | <hr/> |
| TOTAL | 24,400 |

Source: Department of General Planning, City & County of Honolulu, 1988.

Appendix F

Traffic Analysis

Introduction

The Department of Accounting and General Services (DAGS) is proposing to construct a Sports and Recreation Center at Kapolei in Ewa. Four possible sites were designated in a June, 1990, alternate site analysis. The Sports and Recreation Center will encompass approximately 75 acres, with all of the four proposed alternate sites situated on Campbell Estate land.

Of the four sites, only two, Alternate Sites "A" and "D" have access from existing roadways. Alternate Sites "B" and "C" will have access from proposed roadways that will be developed at a later date. Therefore, the main data for traffic impact analysis will be directed toward these existing roadways. Traffic for Alternative Sites "B" and "C" will be analyzed with the assumption that these new roadways will be in operation at the time of project completion.

Alternate Sites "A" and "D" are located along Fort Weaver Road, with Alternate Site "A" on the west mauka side of Farrington Highway and Alternate Site "D" near the Old Fort Weaver and Fort Weaver Road intersection. Traffic access for Alternate Site "A" is possible from Fort Weaver Road and/or Farrington Highway. Alternate Site "D" has access points along Old Fort Weaver Road and possibly an access point from Fort Weaver Road.

Alternate Sites "B" and "C" are situated along a proposed road, Ewa Parkway, adjacent to the western side of Kaloi Gulch. Access points for both sites would be off either Ewa Parkway or another access road running parallel to Ewa Parkway. Also, Alternate Site "C" could have an access point off Renton Road, as it lies makai of Alternate Site "B" and near Renton Road.

This traffic study report identifies and evaluates the expected impact of forecast traffic generated by the proposed development in the year 1993. The analysis will also consider the overall impact of traffic on nearby roadways. The report includes a description of existing conditions and projected future conditions when the proposed developments are completed.

This report addresses impacts in both the afternoon (pm) peak hours and morning (am) peak hours of the proposed Kapolei Sports and Recreation Center for all Alternate Sites "A", "B", "C", and "D".

Existing Traffic Conditions

Existing traffic volumes along the intersection of Fort Weaver Road/Farrington Highway and Fort Weaver Road at Honouliuli Bridge were documented using recent data from the Highways Division of the State Department of Transportation (DOT) and the Department of Transportation Services of the City and County of Honolulu. Additional data were obtained by Mitsunaga and Associates, Inc. at the intersection of Fort Weaver Road one-half mile from Honouliuli Bridge on Saturday, April 20, 1991 at 4:20-5:20 p.m.

Existing traffic counts conducted by DOT in 1990 and 1991 and Mitsunaga and Associates, Inc. in 1991 are summarized in Table 5.

TRAFFIC FORECASTS

Ambient traffic is traffic which would occur even if the proposed project was not built. Future ambient traffic along Fort Weaver Road was projected based on a growth factor derived by examining the expected traffic growth trend along Fort Weaver Road.

A 1989 study by the Department of Urban and Regional Planning of the University of Hawaii employed computer software developed by the Microsoft Corporation for the Federal Highway Administration which incorporates formulae, tables and procedures contained in The Highway Capacity Manual, Third Edition (Transportation Research Board, 1985.) Results show a projected average increase of approximately 2% per year in Fort Weaver Road traffic from 1986 through 1992. Based upon this trend, existing 1991 a.m. and p.m. peak hour traffic volumes were increased by 4% to obtain the forecast ambient traffic volumes in 1993. (See Figure 2)

The projected traffic generated by the project was added to this future ambient traffic forecast to estimate 1993 traffic volumes for Sites "A" and "D". (See Figures 3 & 4)

Future traffic was estimated for two conditions -- with and without the Sports and Recreation Center. All other variables such as the number of lanes on Fort Weaver were assumed to be the same until that time. Future traffic generated by developments south of Renton Road were estimated. The year 1993 was selected for analysis as it was deemed to be the year when the project would be completed and occupied. For the Alternate Sites "B" and "C" traffic will be considered with the proposed Ewa Parkway and other access roads that will be built later.

Also Alternate Sites "B" and "C" have two options which will both be analyzed for access routes to and from the facility. The first option is to widen the Ewa Parkway and prohibit parking on the two extreme lanes, allowing for large volumes of traffic in and out of the facility. This first option has its disadvantages. The traffic from the facility will be traversing this residential arterial road that was not intended for a large amount of traffic (1659 vehicles per day). Additionally, the widening of the road as it approaches the facility will not alleviate most of the congestion caused further along the Ewa Parkway, where the cars are restricted to two lanes.

Secondly, an access road that runs parallel to the Ewa Parkway could be constructed. Residential traffic would be avoided, and wider roads with no parking lanes may be established. This is the more costly option and, when combined with the additional offsite expenses for Sites "B" or "C", poses an economic question.

Trip Generation

The methodology used to determine number of trips generated by proposed or new projects was obtained by the 1988 edition of Transportation and Land Development by the Institute of Transportation Engineers. These vehicle trip rates shown on Table 1 are based on average conditions and were reviewed for possible adjustment for local conditions.

Total (TOT) vehicle trip rates in peak a.m. and p.m. hours (Table 1) and percentage distribution of site traffic (Table 4) were used to calculate vehicles entering and exiting the 75-acre park development. (See Table 2.) Also note that these peak hours are for weekdays. On the weekend, when the Sports and Recreation Center

is most likely to be used, traffic will not achieve the magnitude of these volume peak hours during these peak times.

Trip Distribution

Trip distribution determines the predicted origins and destinations of traffic generated by new projects. The trip distribution used in this study is based on completion of the Sports and Recreation Center in either Alternate Site "A" or "D".

Since there has been no other construction since April, 1990, a substantial increase from the April, 1990, State of Hawaii traffic counts is unexpected. An April, 1991, traffic count was just completed by the State of Hawaii for the intersection of Fort Weaver and Farrington Highway. With the comparison in traffic volume percentages, there is no substantial change in the traffic volume totals. (See Figure 1 for existing traffic quantities.)

Traffic Assignment

The Site is expected to generate inbound and outbound traffic similar to a golf course during the am peak hours and especially during the weekends. However, in the pm peak hours the inbound traffic will be much greater as residents tend to participate in recreational activities much later in the day. These figures are given in Table 4.

Table 1. Trip Generation Rates

| RECREATION | Average Trips | Max. Trips | AM | | | PM | | |
|--------------|---------------|------------|----|-----|------|----|-----|------|
| | | | IN | OUT | TOT | IN | OUT | TOT |
| Parks | 30.37/acre | 214.55 | | | * | * | * | * |
| City Parks | 3.66/acre | 129.83 | * | * | 2.43 | * | * | 3.37 |
| County Parks | 5.09/acre | 81.24 | * | * | * | * | * | * |
| State Parks | 0.69/acre | 16.67 | * | * | 0.64 | * | * | 0.06 |

This table from the 1988 edition of the Transportation and Land Development by the Institute of Transportation Engineers indicates that most parks will not impact the specific pm or am peak hours for the average study, indicated by the asterisks in the 'TOT' categories. It will, however, affect the total number of trips in that given area. Also, average weekday, together with Saturday and Sunday trips are reported. Since the Kapolei Sports and Recreation Center will generate substantial daily variation due to training major league teams, baseball games, and other events, the figures above use the highest weekday cases rather than average cases, since the higher rates and associated traffic problems will occur several times a year.

Table 2. Trip Generation

| RECREATION | Daily (vpd) | AM Peak | | | PM Peak | | |
|-----------------------|-------------|---------|-----|-----|---------|-----|-----|
| | | IN | OUT | TOT | IN | OUT | TOT |
| City Park 75 acres | 1659 | 127 | 55 | 182 | 233 | 20 | 253 |

The City Park category fits the description of the Kapolei Sports and Recreation Center: a City recreation center of a highly residential area with more of its residents attending evening events at the park. Although these figures are high, it should be noted that this is at the highest level of traffic, during the weekday when the major event, such as a major league exhibition game or athletic event is held. Also note that the am peak and pm peak hours may not necessarily occur on the same day.

Table 3. Trip Distribution Percentages

| <u>Major Area</u> | <u>Percentage</u> |
|-------------------|-------------------|
| Honolulu | 53% |
| Pearl City | 5 |
| Wahiawa/Mililani | 8 |
| Waipahu | 10 |
| Makakilo | 7 |
| Waianae Coast | 2 |
| Ewa Beach | <u>15</u> |
| Total | 100% |

Table 4. Percentage Distribution of Site Traffic

| <u>Time Peak</u> | <u>In</u> | <u>Out</u> |
|------------------|-----------|------------|
| AM Peak Hour | 70 | 30 |
| PM Peak Hour | 92 | 8 |

Table 5. Intersection Traffic Counts

| <u>Traffic Count</u> | <u>N-S Road</u> | | <u>E-W Road</u> | |
|--|-------------------|-------------------|------------------|------------------|
| | <u>Northbound</u> | <u>Southbound</u> | <u>Eastbound</u> | <u>Westbound</u> |
| State DOT (Mechanical Count) | | | | |
| <u>Fort Weaver & Farrington</u> | | | | |
| April 9, 1990 | | | | |
| AM Peak | 1414 | 893 | 1692 | 252 |
| PM Peak | 1619 | 1820 | 2050 | 347 |
| June 18, 1990 | | | | |
| AM Peak | ---- | ---- | 1244 | 279 |
| PM Peak | ---- | ---- | 1499 | 400 |
| March 27-April 10, 1991 | | | | |
| AM Peak | 2711 | 1115 | 1400 | 324 |
| PM Peak | 2726 | 2107 | 1496 | 483 |
| <u>Fort Weaver-Honouliuli Bridge</u> | | | | |
| April 9, 1990 | | | | |
| AM Peak | 1572 | 675 | ---- | ---- |
| PM Peak | 1006 | 1767 | ---- | ---- |
| <u>Fort Weaver-at Intersection at Fort Weaver</u> (.5 miles from Honouliuli Bridge) | | | | |
| Saturday, April 20, 1991 (Hand-count) | | | | |
| 4:20-5:20 pm | 1040 | 1320 | ---- | ---- |

Table 6. Critical Road Volumes

| | 1987 Study CV/Capacity Status | Current Study CV/Capacity Status | |
|--|----------------------------------|-------------------------------------|--|
| | | without project | with project |
| Fort Weaver/Old Fort Weaver Roads | 650/Under | 1280/Near | 1364/Near ¹ 1288/Near ² |
| Fort Weaver/Renton- Arizona Roads | 735/Under | 1142/Under | 1226/Near ¹ 1150/Under ² |
| Ewa Parkway in Year 2000 | ----- | 1130/Under ³ | 1257/Near ¹ 1143/Under ² |
| Ewa Parkway using Access Roads in Year 2000 | ----- | 1130/Under ³ | 1155/Under ¹ 1132/Under ² |

Note: CV = Critical Volume

1: This is the estimated Critical Volume at the worst possible condition (rush hour traffic, weekday, with most residents interested in attending the stadium activities).

2: This is the estimated Critical Volume at the standard weekday rush hour conditions.

3: Figures based on 4,000 residential units with sub-urban to urban classification and moderate commercial business.

Table 7. Roadway Level of Service with Project

| | AM Peak | PM Peak |
|--|---------|---------|
| Farrington Highway/Fort Weaver Road | D | D |
| Fort Weaver Right Turn (Site "A") | B | C |
| Fort Weaver Road/Old Fort Weaver Road | D | D |
| Fort Weaver Right Turn (Site "D") | B | B |
| Fort Weaver Left Turn (Site "D") | B | E |
| Ewa Parkway (w/out Access Road) | D | D |
| Ewa Parkway (w/ 3 or 4 lane Access Road) | C | C |

CONCLUSIONS

Alternate Site "A" is considered to have access at the Fort Weaver turn-off into Farrington Highway. For this reason, a small change in signalization must be made to allow more traffic to make right turns into Alternate Site "A". First, the Kunia off-ramp should allow a U-turn directly onto Fort Weaver Road. Otherwise, unnecessary off-site traffic will be generated due to cars trying to turn around to get to the Recreation Center. Also the Fort Weaver Road right turn-off shoulder lane should be widened to allow slower inbound site traffic to approach the facility at reasonable speeds while avoiding extensive delays in passerby traffic which would also traverse that route. (See Figure 3 for projected traffic for Site "A")

For Alternate Site "D" to be accessed more easily, the installation of a traffic signal at the intersection of Fort Weaver and Old Fort Weaver Road is recommended. It would allow easier access from the mauka-bound left turn lane while causing just a minimal reduction in traffic flow, due to the usage of efficient detector loops and prime hour phases for the traffic signals. (See Figure 4 for projected traffic for Site "D")

Both Roads will generally function at a level of Service "D" as indicated in the "Road Capacity Definition" as depicted in Table 7. Even with the increased traffic flow due to the construction of the facility at either Alternate Site "A" or "D", there will be no decrease in the level of service for the general intersection. However, if the traffic signal installation for Alternate Site "D" is deemed unfeasible, a left turn traffic storing queue is strongly recommended so that mauka-bound traffic along Fort Weaver will not be significantly affected. The level of service for the left lane would be reduced to a stop and go flow rating of "E". This is the most undesirable level of flow, but again, these conditions only arise at the worst possible traffic conditions.

For Alternate Sites "B" and "C", traffic capacity and level of service indicate that an access road that runs parallel to the Ewa Parkway is more desirable. This access road would be able to meet all the needs of the new traffic generated by the project and would also allow differing routes of travel for residents in the area, dividing the already near capacity traffic congestion levels.

Figure 1: 1991 Existing Traffic

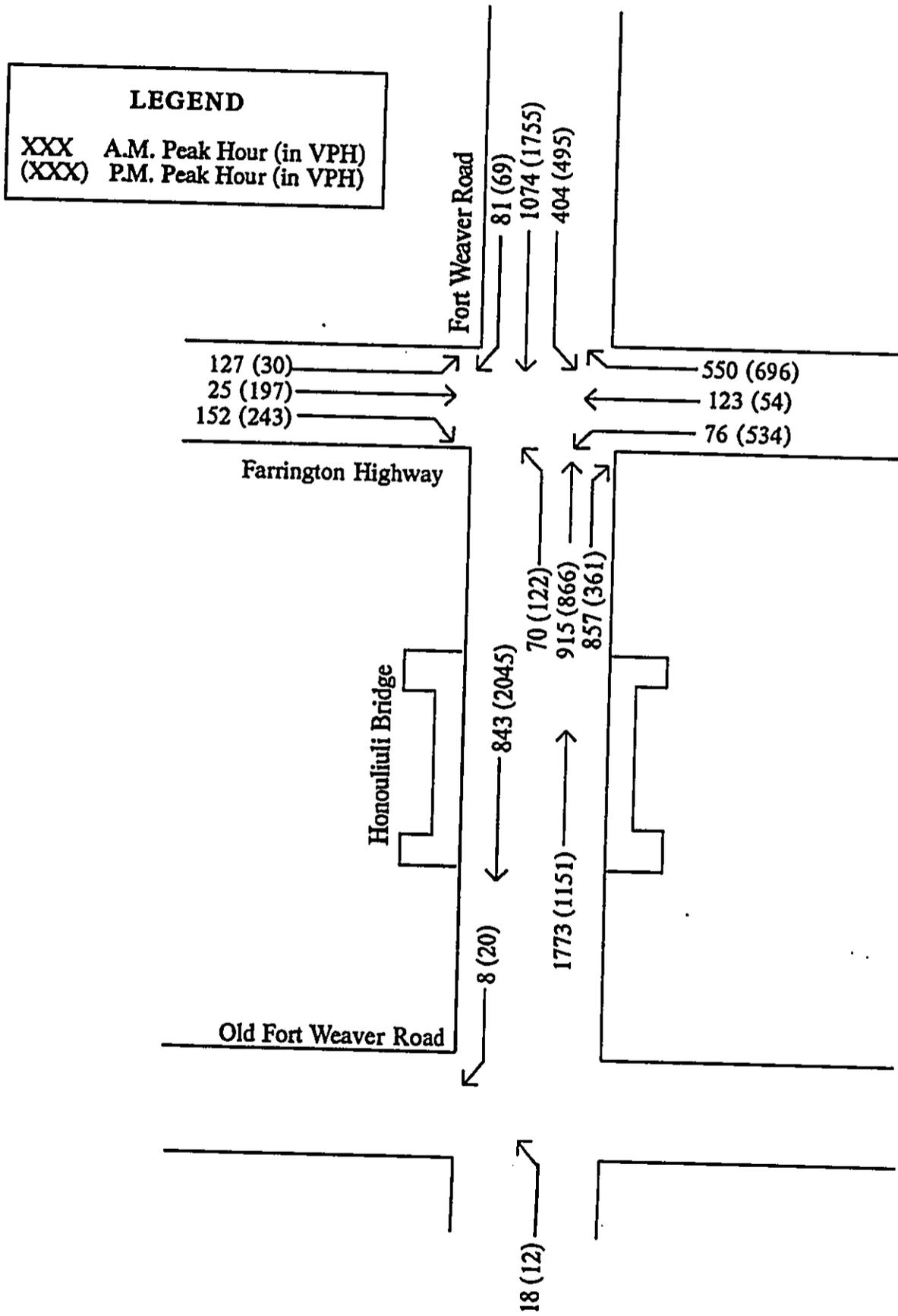


Figure 2: 1993 Projected Traffic w/o Project

LEGEND
 XXX A.M. Peak Hour (in VPH)
 (XXX) P.M. Peak Hour (in VPH)

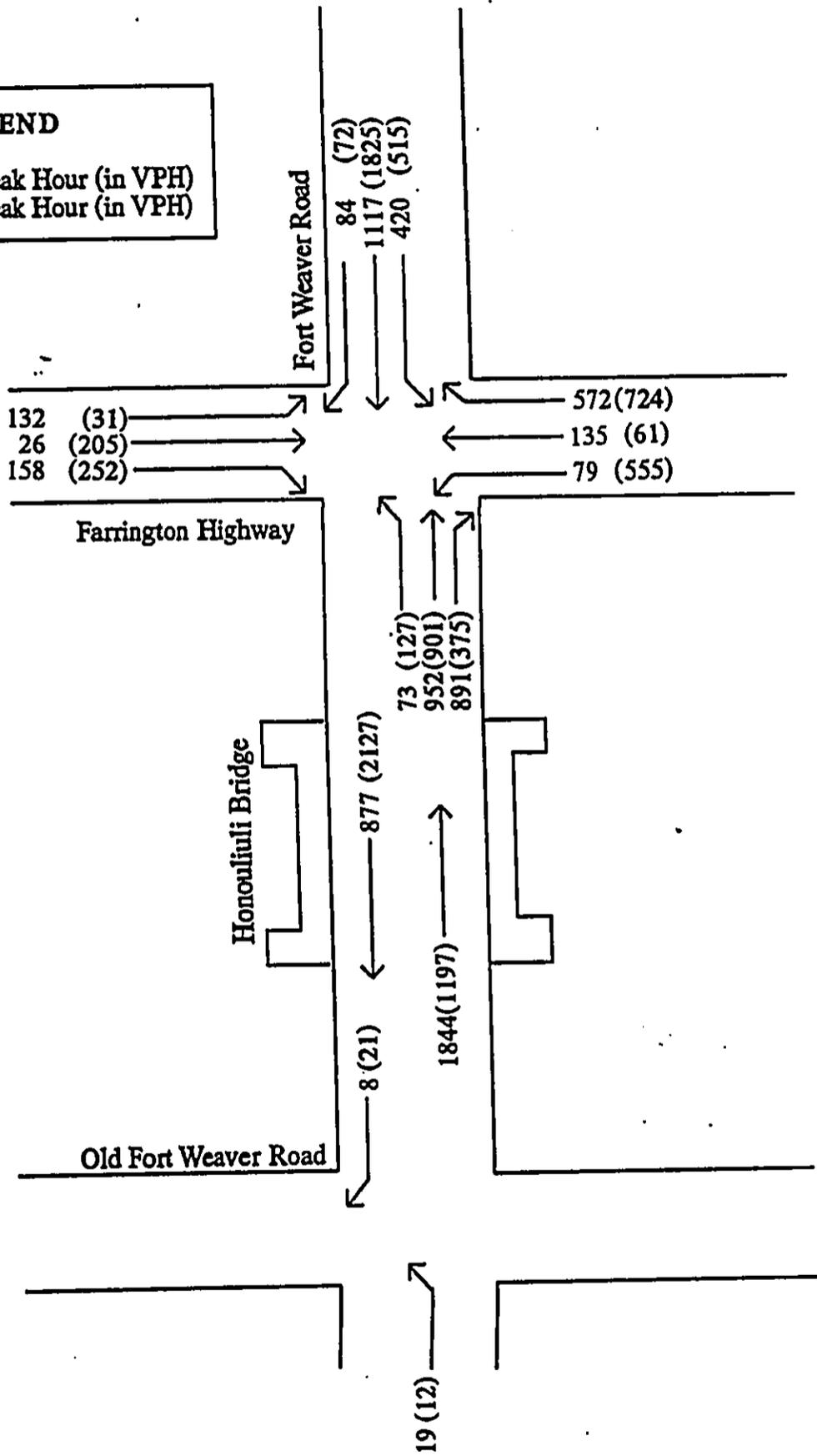


Figure 3: 1993 Projected Traffic for Site "A"

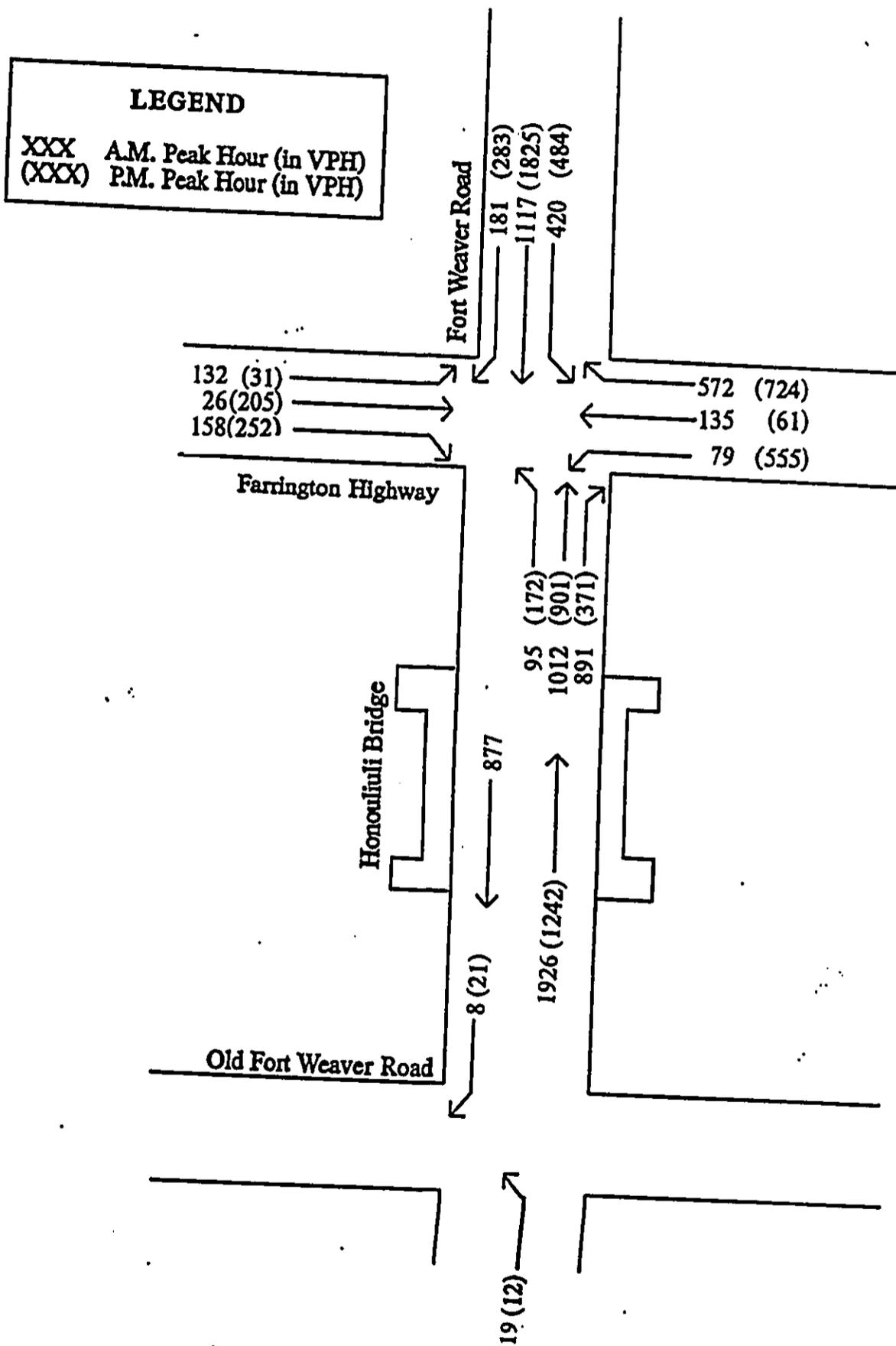
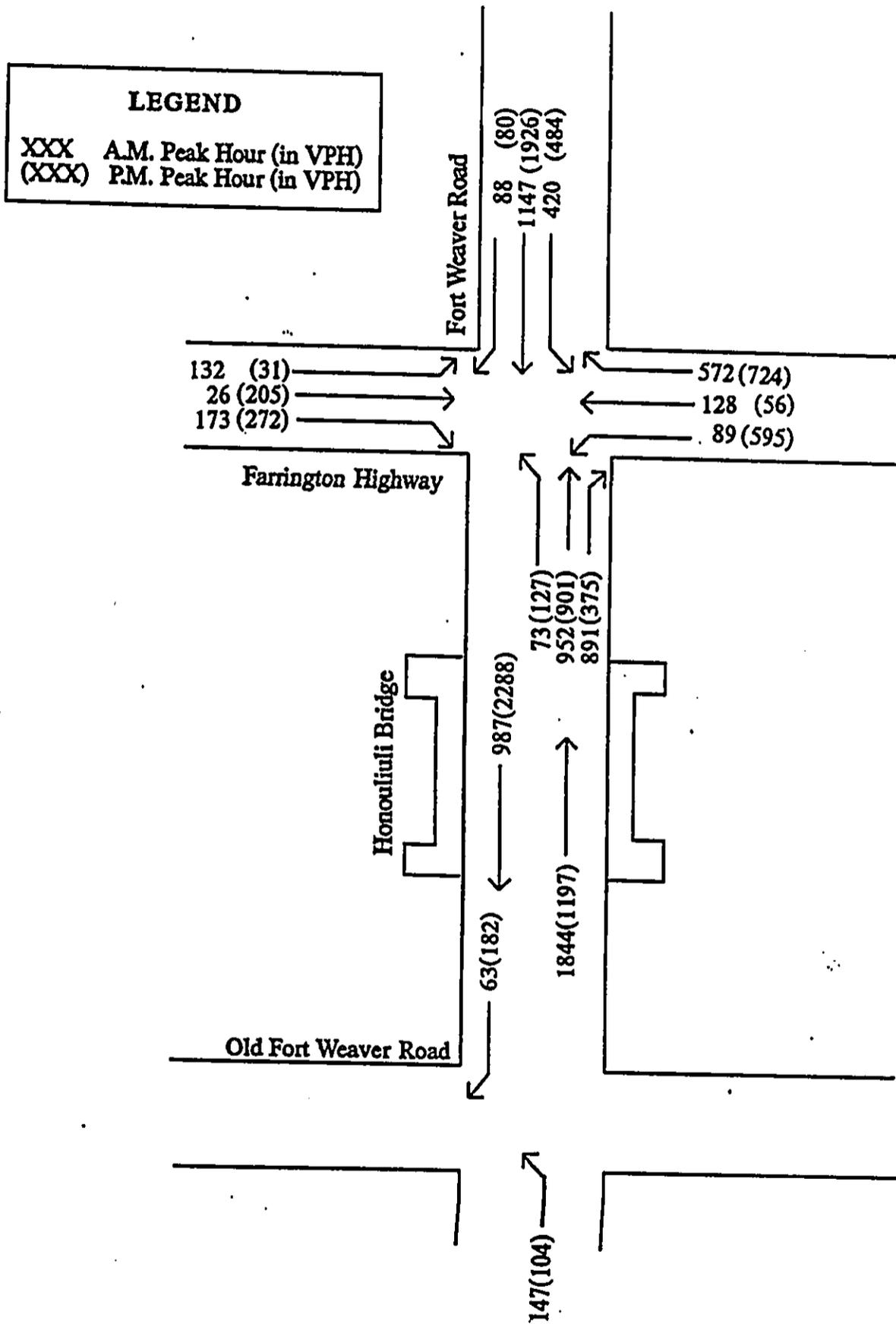


Figure 4: 1993 Projected Traffic for Site "D"



APPENDIX

DEFINITION OF LEVEL-OF-SERVICE

DEFINITION OF LEVEL-OF-SERVICE
FOR
UNSIGNALIZED INTERSECTIONS

For unsignalized intersections, the traffic most impacted will be the minor or cross-street with the stop or yield control. The major roadway will have the right-of-way. The level-of-service is the amount of delay expected for the average vehicle desiring to cross or enter the major road. The following gives a general description of the measure.

The concept of levels of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst.

Level-of-service definitions—In general, the various levels of service are defined as follows for uninterrupted flow facilities:

Level-of-service A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

Level-of-service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

Level-of-service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the

APPENDIX

LEVEL-OF-SERVICE DEFINITIONS
FOR
UNSIGNALIZED INTERSECTIONS
SIGNALIZED INTERSECTIONS
ON-RAMPS
OFF-RAMPS
MULTI-LANE HIGHWAYS

presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

Level-of-service D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

Level-of-service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuver. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

Level-of-service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go wave, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of the vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level-of-service F is an appropriate designation for such points.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE FOR 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.

Level-of-service A describes operations with very low delay, i.e., less than 5.0 sec 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 sec 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 sec 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 sec 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 a high v/c ratios (volume of cars to capacity of intersection). 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 sec per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle length, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level-of-service F describes operations with delay in excess of 60.0 sec 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.

DEFINITION OF LEVEL-OF-SERVICE
FOR
ON-RAMPS and OFF-RAMPS

Level of service for signalized intersections is defined in terms of flow rates.

Level-of-service A represents unrestricted operation. Merging and diverging vehicles have little effect on other freeway flows.

Level-of-service B merging vehicles have to adjust their speed slightly to fill lane 1 gaps; diverging vehicles still do not experience any significant turbulence. Flow may be described generally as smooth and stable.

Level-of-service C Both lane 1 and on-ramp vehicles must adjust their speed to accomplish smooth merging, and under heavy on-ramp flows, minor ramp queuing may occur. Some slowing may also occur in diverge areas. Overall speed and density of freeway vehicles are not expected to be seriously deteriorated.

Level-of-service D Smooth merging becomes difficult to achieve. Both lane 1 and on-ramp vehicles must frequently adjust their speed to avoid conflicts in the merge area. Slowing in the vicinity of diverge areas is also significant. At heavily used on-ramps, ramp queues may become a disruptive factor.

Level-of-service E Represents capacity operation. On-ramp queues may be significant. Diverge movements are significantly slowed, and some queuing may occur in the diverge area. All vehicles are affected by turbulence on freeway.

Level-of-service F All merging is on a stop-and-go basis, and ramp queues and lane 1 breakdowns are extensive. Much turbulence is created as vehicles attempt to change lanes to avoid merge and diverge areas. Considerable delay is encountered in the vicinity of the ramp terminal, and conditions may vary widely, from minute to minute, as unstable conditions create "waves" of alternately good and forced flow.

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

DEFINITION OF LEVEL-OF-SERVICE
FOR
MULTI-LANE HIGHWAYS

Level of service for signalized intersections is defined in terms of *density*.

Level of service A describes completely free-flow conditions. Maximum density is 12 passenger cars per mile per lane (pc/mpl) and the ability to maneuver within the traffic stream is high.

Level of service B is also indicative of free flow. The maximum density is 20 pc/mpl. Minor disruptions to flow are still easily absorbed at this level.

Level of service C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles. The maximum density is 30 pc/mpl.

Level of service D borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion. The maximum density is 42 pc/mpl.

Level of service E represents operations at or near capacity and is quite unstable. The maximum density is 67 pc/mpl. This is the minimum spacing at which uniform flow can be maintained, and effectively defines a traffic stream with no usable gaps.

Level of service F represents forced or breakdown flow. It occurs at a point where vehicles arrive either at a rate greater than that at which they are discharged or at a point on a planned facility where forecasted demand exceeds the computed capacity. Densities are higher than 67 pc/mpl. Queues form behind the breakdowns and are highly unstable.

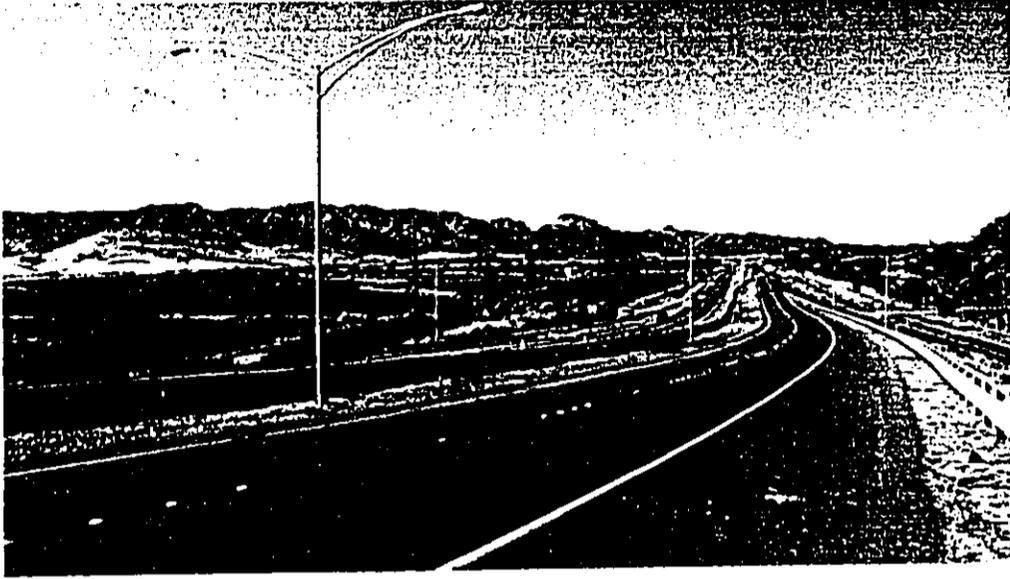
REFERENCE: Highway Capacity Manual (Special Report 209, 1985)

BIBLIOGRAPHY

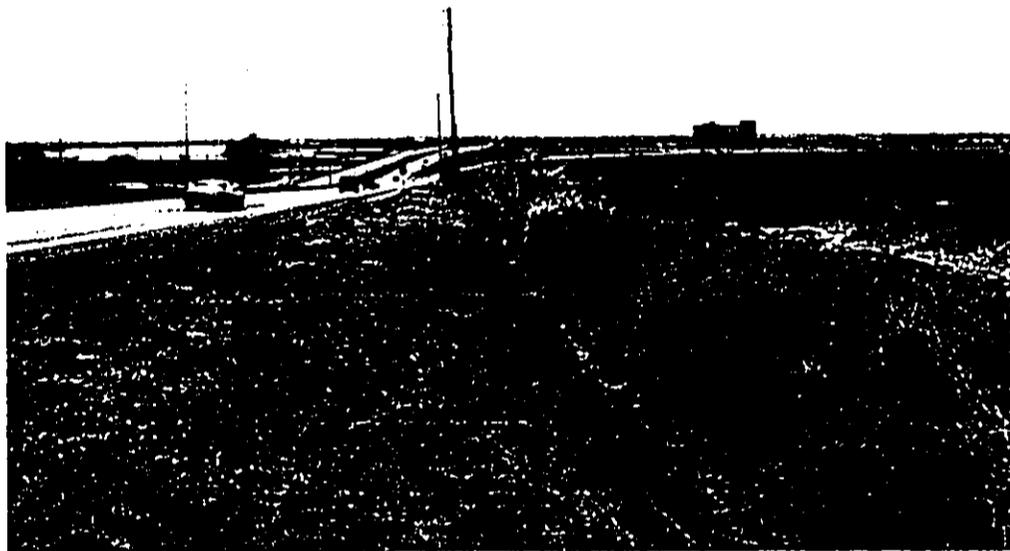
- 1) Traffic Impact Assessment Report For the Proposed West Loch Estates Subdivision - PACIFIC PLANNING & ENGINEERING, INC. September 1987
- 2) Traffic Assessment for the Proposed Kapolei Golf Course Expansion - PARKSONS BRINCKERHOFF QUADE & DOUGLAS, INC. February 1990
- 3) Kapolei Village Master Plan Report - PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.
- 4) Transportation and Land Development - INSTITUTE OF TRANSPORTATION ENGINEERS - c. 1988
- 5) Environmental Impact Statement for the Proposed Ewa Marina Community Project - GROUP ARCHITECTS COLLABORATIVE, INC. November 1980
- 6) Environmental Assessment and Notice of Preparation of an Environmental Impact Statement for the Proposed Kapolei Sports and Recreation Center - MPAC INC., March 1991
- 7) Final Environmental Impact Statement for the Ewa Villages Master Plan, Ewa, Oahu, Hawaii. R.M. TOWILL CORPORATION, February 1991.
- 8) Final Environmental Impact Statement for Ewa Marina, Phase II, Ewa, Oahu, Hawaii. HASEKO (Hawaii), INC., April 1991.
- 9) Final Environmental Impact Statement for Kapolei Village, Ewa, Oahu, Hawaii. R.M. TOWILL CORPORATION, February 1988.
- 10) Sustainable Development or Suburbanization? Cumulative Project Impacts in Ewa and Central Oahu, Department of Urban Regional Planning, UNIVERSITY OF HAWAII AT MANOA, Spring 1989.
- 11) Comprehensive Home - End Travel Needs Survey for the Ewa - Central Oahu Region, SMS RESEARCH, June 18, 1991.

Appendix G

Visual Presentation of Alternate
Sites "A", "B", "C", & "D"



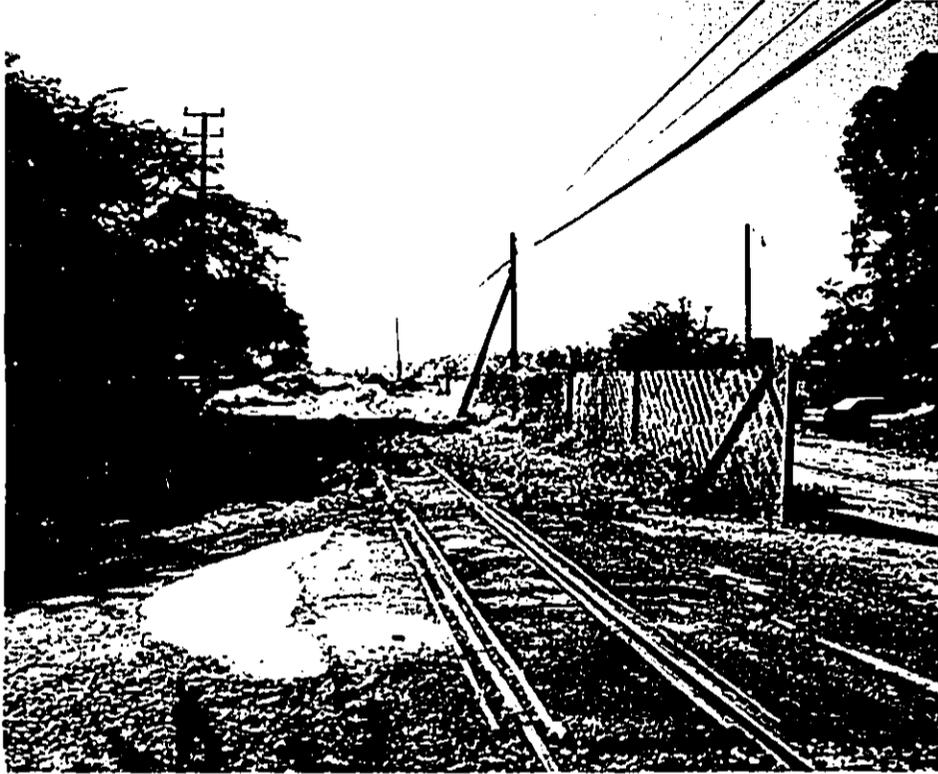
Approaching site "A" from Ewa. To the right, old Royal Sunset Drive-in, now Community II.



Existing overhead electrical lines and weeds along side main highway (Kunia Rd.) St. Francis West in background.



Land presently being cultivated by Oahu Sugar Co.



Site B is shown in the background. Access is limited through sugar cane fields via Mango Tree Road and Tenney Village. (Kaloi Gulch runs along boundary on the east side of Site B.)



Access area to Site C which is in the background via sugar cane fields. (Access is limited through Varona Village on the east.)



Facing east from Mango Tree Road. Alternate Site "B" is to the left, and Alternate Site "C" is to the right.



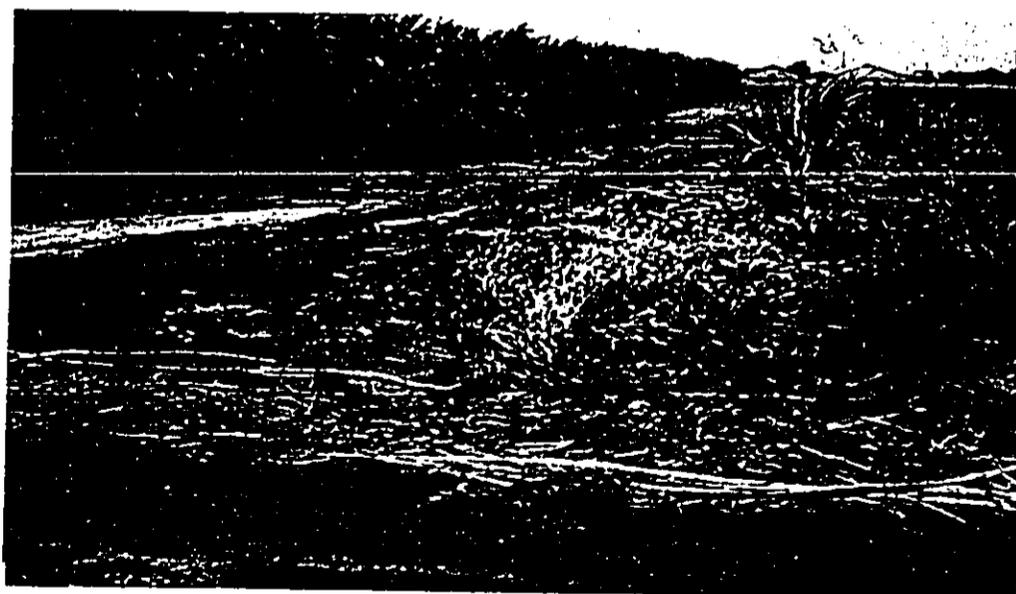
Facing east from Mango Tree Road. Alternate Site "B" is to the left, and Alternate Site "C" is to the right. New piping is being installed along Mango Tree Road adjacent to Alternate Site "B".



Facing makai from Mango Tree Road from a small bridge over Kalo'i Gulch. Alternate Site "C" is to the right.



Facing east along a cane road bordering Barbers Point Naval Air Station. Alternate Site "C" is to the left. The main road through Barbers Point is on the other side of the existing overhead utilities.

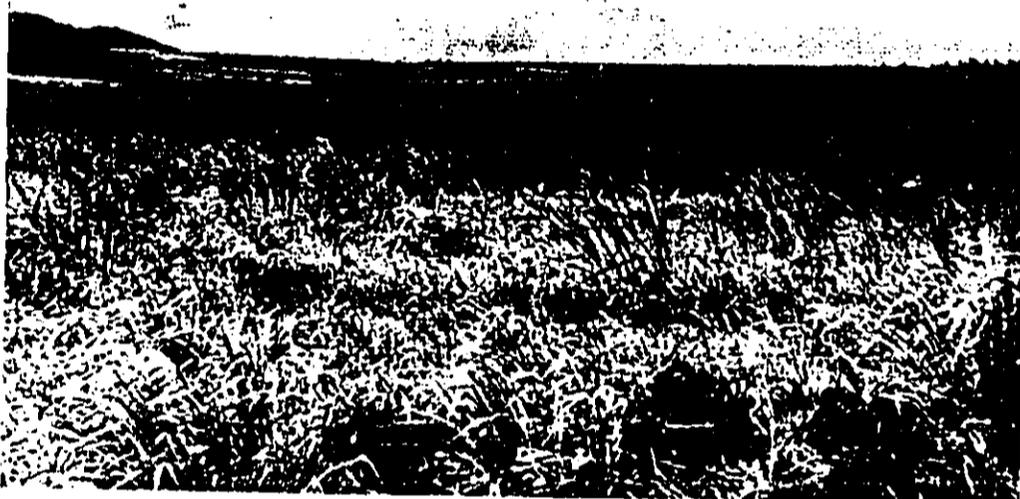


Facing makai from Mango Tree Road. Alternate Site "C" is to the left. Several buildings in Barbers Point Naval Air Station can be seen in the background.

RECEIVED AS FOLLOWS



Facing mauka from Mango Tree Road from a small bridge over Kalo'i Gulch. Alternate Site "B" is to the left of Kalo'i Gulch.



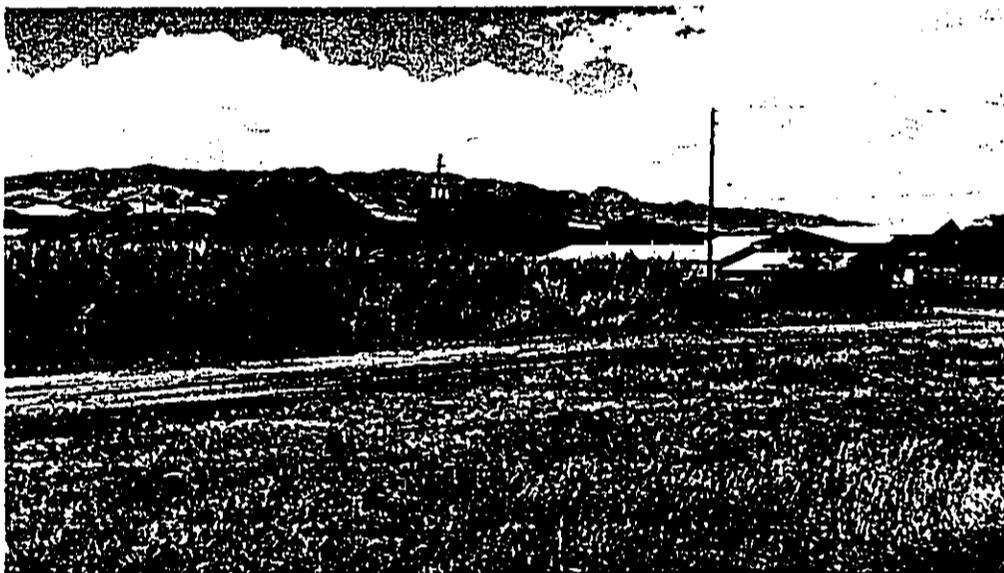
Facing mauka from Mango Tree Road. Alternate Site "B" is to the right.



Facing mauka from Mango Tree Road. Alternate Site "B" is to the right. A new pipeline for nonpotable water is being installed along Mango Tree Road. This piping corridor may be used for a pipeline for potable water in the future.



Approaching Site "D"
from Kunia Road.
Existing power lines.



Along Site "D" and
service road from Ft.
Weaver Road.



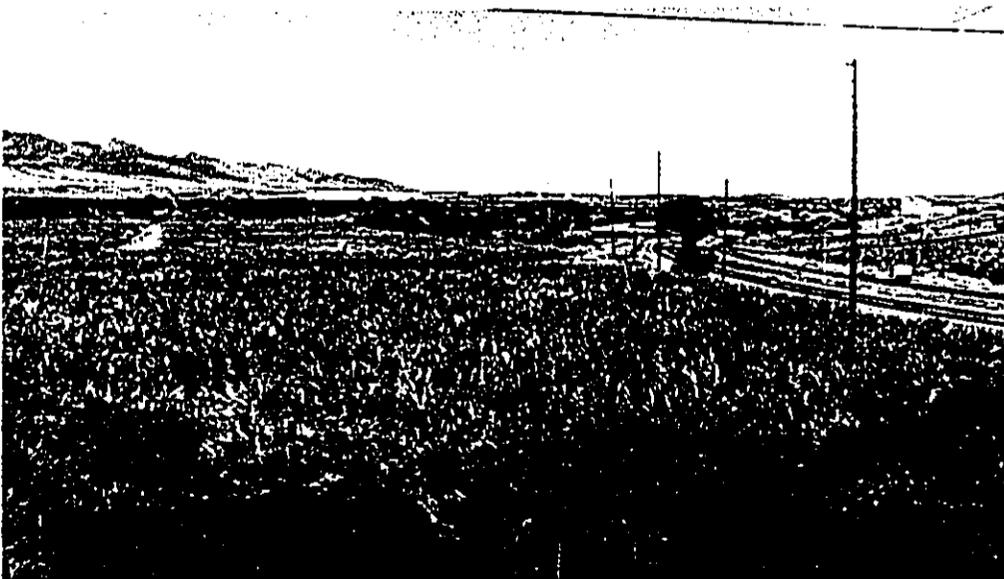
Hale O Ulu School. Site
"D" is to the right of the
school.



Service road from Old Fort Weaver Road. Existing electrical lines.



Weeds along service road.



Overhead view of Site "D" from Hale O Ulu School. Proposed site presently used by Oahu Sugar Co.

Appendix H

Archaeological Assessment

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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

DEPUTIES

KEITH W. AHUE
MANABU TAGOMORI
DAN T. KOCHI

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

June 4, 1991

Dr. Ross Prizzia
MPAC
436 Piikoi Street
Honolulu, Hawaii 96814

Dear Dr. Prizzia:

SUBJECT: Kapolei Sports and Recreation Center Project,
Alternative Sites A, B, C, and D
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-16: 25; 9-1-17: 4; 9-1-18: 1

Thank you for your May 22nd letter requesting a preliminary review of the historical resources at these three parcels.

All three parcels are located on the flat upland plain of 'Ewa in areas that were under sugarcane cultivation for many years. Archaeological investigations in this environment at neighboring parcels, reported in Dicks, Haun and Rosendahl (1987) Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates - Golf Courses and Parks and in Dunn, Haun and Goodfellow (1991) Intensive Archaeological Survey and Test Excavations, Ewa Marina Community Project - Phase I, have shown the generally poor conditions for the preservation of historic sites. Historic sites appear to be restricted to gullies, where they may be buried under recent sediments. Thus, we would expect that the proposed Sports and Recreation Center Project, as currently planned at the four alternative sites, would have "no effect" on historic sites.

Thank you for your interest in historic preservation. If you require further assistance as your plans develop, please contact Tom Dye at 587-0014

Sincerely,

A handwritten signature in cursive script that reads "Ross Cordy".

for DON HIBBARD, Administrator
State Historic Preservation Division

Appendix I

**Letter and Settlement Agreement
Between Navy and Campbell Estate**

**Relevant Land Use and Height Restrictions
for the Four Alternative Sites**

Figure 1 Easements Map

M E M O R A N D U M

TO: Harold Masumoto DT: November 1, 1989
FR: Bill Kaneko *Bill Kaneko* CC:
RE: Professional Baseball Training Facility

Attached is a copy of the settlement agreement between the Navy and Cambell Estate on matters arising out of the 1984 Naval Air Station Barbers Point (NASPB) AICUZ Study and the 1988 NASBP AICUZ Update. The Navy agreed to purchase restrictive easements for \$6.5 million to prevent the need for Accident Potential Zones (APZs) on 750 acres of Cambell Estate Land. To the extent that land uses are consistent with the terms of the agreement, no APZ is necessary with respect to the land. Additionally, the restriction is binding to any successor, assignee, and subsequent owners of the subject property.

Such a settlement has bearing on the potential site for the State's 75 acre professional baseball facility. Appropriated during the 1989 session of the State Legislature, Hawaii lawmakers approved \$3.7 million for land acquisition, design and construction of a professional baseball training facility as part of Central/Ewa Oahu development. The proposed facility includes a 5,000 seat stadium, 1,500 seat grandstand, four practice fields, locker room, parking and other training amenities. If the sports complex is located within the settlement area, the restrictions set forth in the agreement would be applicable to the State upon its condemnation and purchase of the Cambell Estate property. See page 1 of settlement agreement, Areas 1 - 5.

It appears that the proposed baseball facility would be permissible in areas 2 and 5; approximately 324 of the 750 acres. The inclusion of the 5,000 seat stadium restricts uses in the other three areas because of its classification as an "outdoor sports arena," rather than "recreational activities."

Restrictions are also placed within noise zones. Exhibit C of the settlement agreement lists permitted and prohibited land uses in relation to the various noise contours. Outdoor sports arenas for spectator sports are permissible within DNL levels of 0 - 75 and appears to be compatible within the area noise contours.

Height restrictions are specified in the Navy/Cambell Estate settlement. "As to Areas 2, 3(a), 3(b), 4, and 5, the parties further agree that no use will be made of the property which establishes physical structures at a height which intrudes into the "inner horizontal surface" and "conical

Harold Masumoto
Page Two

surface" relative to the Navy airstrip. The inner horizontal surface is a plane oval in shape at a height of 150 above the established airfield elevation. The conical surface is a surface extending from the periphery of the inner horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation.

The Federal Aviation Administration (FAA) also has requirements on proposed construction or alteration of objects that may affect navigable airspace. According to FAA Regulation Part 77, any person who proposes to erect an object that would be of a height more than 200 feet above ground level; or within 20,000 feet of an airport with at least one runway more than 3,200 feet in length and would exceed one foot in height for each 100 feet (100:1) horizontally from the nearest point of the nearest runway, must notify the FAA. The acknowledgement states whether the proposed construction or alteration would exceed any FAA standard, would be a hazard to air navigation and if further aeronautical study is necessary.

When I met with David Shima of Mitsunaga & Associates, Inc., we talked about such height limitations for the facility lighting needs. He mentioned that U.S. major league stadiums, primarily for television coverage, require high intensity lights mounted on approximately 230' poles. The State's facility would require 60' to 100' light poles, the later being sufficient for TV coverage. With such standards, and assuming the established airfield elevation is the same as the stadium location, 100' light poles would appear to be acceptable and in accordance with the limitations agreed upon in the Navy/Cambell Estate settlement. Depending on the stadium location in relation to the Naval airstrip, FAA notification and approval may be necessary.

Should you have any questions, feel free to contact me.

Attachments

Agreement No. 6931.00

SETTLEMENT AGREEMENT

HARRIS MILLER MILLER & HARRIS INC.
NAS Barbers Point, Oahu, Hawaii

July 1989

This Agreement is made this _____ day of _____, 1988, by and between and among the Trustees under the Will and of the Estate of James Campbell, Deceased (the "Campbell Estate"), the United States Navy (the "Navy") and its officers and employees in their official capacity in Civil No. 86-1094 USDC Hawaii.

RECITALS

1. The Campbell Estate brought suit in Civil No. 86-1094, USDC Hawaii, against the Navy and its officers and employees in their official capacity for matters arising out of the 1984 Naval Air Station Barbers Point ("NASBP") AICUZ Study and the 1988 NASBP AICUZ update. The Estate also brought suit against Navy officers and employees in their individual capacity for matters arising out of the 1984 AICUZ study.
2. The Navy and its officers and employees denied the material claims set forth in the civil actions.
3. The parties to Civil No. 86-1094 desire to settle and resolve the disputes which have arisen between and among them without admitting or conceding the truth, liability or legal effect of or for any of the matters asserted in the litigation.

AGREEMENT

In consideration of the premises and for the purpose of settling litigation, the parties agree as follows:

1. The parties agree to compatible uses as shown below and on the Compatible Land Use Map ("CLUM") attached hereto as Exhibit "A":
 - a. Area 1 (45.567 acres, shown as AP2-I in the 1984

APPENDIX C SETTLEMENT AGREEMENT BETWEEN THE NAVY AND THE CAMPBELL ESTATE

AICUZ): Uses to be compatible with APZ-I column of Table 4, attached hereto as Exhibit "B".

b. Area 2 (99.935 acres): Golf course and commercial uses related to clubhouse and recreational facilities and as allowed in the 55-65 Ldn column in Table 1 attached hereto as Exhibit "C". with the clarification that the following uses are not permitted:
manufacturing, storage, handling or distribution of explosives, petrochemicals and petroleum products; residential, including hotels and other transient lodging; schools; hospitals and nursing facilities; and sports stadiums with greater than 5,000-seat capacity; provided, however, that training classes, spectator assemblies, medical clinics and the storage, handling and distribution of petrochemicals, petroleum and related products are allowed provided that they are customarily incidental to a permitted use.

c. Area 3 (200.315 acres): All uses (excluding those for schools, hospitals and nursing facilities, and sports stadiums) allowed in 55-65 Ldn column in Table 1, Exhibit "C", including golf course, parks, and other recreational activities, except, however, as to residential:

i. Area 3a, first 50 acres adjacent to NASBP, residential to a density no greater than 2 residential units per acre on average (i.e., no more than 100 units per 50 acres)

ii. Area 3b, second 150 acres, residential to a density no greater than 4 residential units per acre on average (i.e., no more than 600 units per 150 acres)

d. Area 4 (approximately 180.016 acres): Golf course and clubhouse, marina, marina services, retail trade, water recreation and as allowed in the 65-70 Ldn column in Table 1, Exhibit "C", with the clarification that the following uses are not permitted: residential, including hotels and other transient lodging; manufacturing, storage, handling or distribution of explosives, petrochemicals or petroleum products; schools; hospitals and nursing facilities; and sports stadiums; provided, however, that training classes, spectator assemblies, medical clinics and the storage, handling and distribution of petrochemicals, petroleum and related products are allowed provided that they are customarily incidental to a permitted use.

e. Area 5 (223.872 acres, being all lands in the area designated APZ-II in the 1984 AICUZ, except Areas 2 and 3): All uses (excluding those for: schools; hospital and nursing facilities; and sports stadiums, provided, however, that sports stadiums of no more than 5,000-seat capacity are allowed within the area, comprising one-half of Area 5, and located to the northwest of a line bisecting Area 5 and running parallel to NASBP Runway 040) allowed in the 55-65 Ldn column in Table 1,

Exhibit "C", including golf course, parks, and other recreational activities, except as to residential:

residential to a density no greater than 6 residential units per acre on average per 100 acres (i.e., no more than 600 units per 100 acres).

f. The phrase "residential unit" used herein shall be read to mean "a dwelling intended for one family on a permanent or transient lodging basis."

g. As to Areas 2, 3(a), 3(b), 4, and 5, the parties further agree that no use will be made of the property which establishes physical structures at a height which intrudes into the "inner horizontal surface" and "conical surface" described as follows and as depicted on the map attached hereto as Exhibit "E":

"Conical surface" is a surface extending from the periphery of the "inner horizontal surface" outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation (33 feet mean sea level). "Inner horizontal surface" is a plane oval in shape at a height of 150 feet above the established airfield elevation (33 feet mean sea level). The plane is constructed by scribing an arc with a radius of 7,500 feet about the centerline at the approach end of Runways 22L and 22R at NAS Barbers Point and interconnecting these arcs with tangents.

It is acknowledged that the Navy's purchase of these restrictions on height shall not be deemed an agreement or recognition on the Trustees' part that these restrictions are useful or necessary or can be applied to any other lands unless compensation is paid.

- h. As to all land within the boundaries of Area 1 through 5, Campbell Estate, its successors and assigns will place the following notice in any deed of conveyance (which will be recorded in public land records): "The property is near Naval Air Station Barbers Point and is subject to overflights by military aircraft, with attendant noise and vibration."
2. This Agreement is binding upon and benefits the parties, their successors, assigns, and subsequent owners of the subject properties. The individuals executing this Agreement do so in their official and fiduciary capacities.
 3. A purpose of this Agreement is to obviate the need for APZs on Campbell Estate land. For purposes of compliance with and enforcement of this Agreement and the restrictive easements called for in Paragraph 9, each Area shall be treated separately. To the extent that land uses for each of Areas 1-5 are consistent with the terms of this Agreement and the restrictive easements, no APZ will be necessary with respect to such land.
 4. The Navy reserves the right to comment on prospective land uses on any property, including compliance with applicable Federal, State, and City and County laws and regulations. For parcels subject to this Agreement (Areas 1-5), and for any other parcel consistent with the official NASBP AICUZ (noise contours of 65 Ldn or higher), the Navy's position as to uses shown to be compatible with this Agreement and Table 1, Exhibit "C", will be that "the development and/or land use

proposed is, with respect to the NASBP noise and accident environment, consistent with agreements reached between the Navy and the Campbell Estate regarding compatibility with aircraft operations."

AICUZ methodology and conclusions, consistent with the law and provisions of applicable DODINST and OPNAV instructions, are matters within the discretion of the Department of the Navy. However, all future noise and AICUZ studies for NASBP, including the 1988 AICUZ update, will conform with the following requirements:

- a. In determining NASBP AICUZ noise contours, average daily operations calculations shall not include in the numerator the number of aircraft operations for days other than those included in the denominator. In addition, the Navy will include noise contours based on average daily operations calculated by using total operations as the numerator and total flying days (days on which one or more operations occur) as the denominator, provided that the analysis will be prepared for comparison purposes only and may be accompanied by a statement that the methodology used therein is not endorsed by the Navy and is not part of the official Navy AICUZ contour for NASBP.
- b. Noise contours will be verified and calibrated against actual noise measurements taken on the ground by the Navy.

- c. The Navy employs accurate operations data verifiable by statistical sampling.
- d. Official AICUZ noise contours will show only noise generated by NASBP operations, provided that the official AICUZ may contain a statement that the official NASBP AICUZ map concerns Naval operations only and does not represent a statement by the United States as to the existing noise environment. The Navy reserves the discretion to include as an appendix to any AICUZ study noise contours showing combined noise generated by both NASBP and HIA operations, which contours will be accompanied by a statement that they are provided for information only and are not the official Navy AICUZ contour for NASBP.
5. General Provisions on NASBP Standard Operating Procedures:
 - a. Standard operating procedures are set at the discretion of the Navy in light of safety requirements, operational considerations, and mission needs, and may be modified when deemed appropriate by the Navy. Nothing herein shall be read to preclude operations outside any such standard operating procedures -- including left or right hand turns by jet aircraft operating runways 4/22 -- when, from time to time, operational, safety, or mission requirements warrant.
 - b. Prior to any amendment by Navy of the standard operating procedures enumerated in subparagraphs 6(f) and 6(g), notice of the amendment and its basis will be provided to

the invited parties (see paragraph 8, below) for their review and comment. The decision on whether and to what extent, if any, to amend will remain solely with the Department of the Navy.

c. The parties recognize and accept that individual instances involving pilot judgment, wind, and safety factors may result in occasional variations from the standard operating procedures. Records of operational data (that is, runway utilization by type of aircraft) will be made available by the Navy to the invited parties (see paragraph 8, below) on, at least, an annual basis for information and comment.

d. The Navy represents that it will consider mitigating strategies with respect to NASBP operations and neighboring land uses should problems or issues arise. Conduct reviews as the Navy determines necessary and appropriate, and make any determinations or implement procedures necessary to mitigate such problems or issues which the Navy finds are within safe capabilities of the aircraft involved and operational and mission requirements and efficiency.

e. NASBP operations will be performed in a manner that minimizes off-station noise and accident potential on surrounding land, consistent with safety, operational, and mission constraints.

f. Current NASBP Standard Operating Procedures state:

- i. Duty runway selection criteria at NASBP require that the duty runway be that runway most nearly aligned into the wind if the wind is in excess of 5 knots. The duty runway shall be utilized for touch-and-go traffic.
- ii. Runways 11 and 22 shall be utilized for itinerant departures (those departing the airport traffic area) to the maximum extent possible consistent with safety and mission. Considering these factors, pilots of departing aircraft are encouraged to utilize Runways 11 and 22 for departures. However, if in the pilot's judgment the aircraft configuration, mission, and/or weather dictate the use of another runway, he shall so request.
- iii. Arriving full stop aircraft land on Runways 4R or 4L when mission, weather, and other traffic permit.
- iv. Consistent with operational requirements, safety, and the mission of NASBP, jet aircraft operating on Runways 4 shall turn right, and aircraft approaching Runways 22 will use a left hand base approach.
- v. Tower instructions to aircraft operating on Runway 4R state: "Initiation of right hand turn-out, if safe, 2000 feet before the departure end is authorized."

Subject to published aircraft performance capabilities, current NASBP flight patterns are as listed below. Navigational aids, if any, will be used to keep aircraft aligned with the patterns.

- i. Departures and touch-and-goes:
 - (1) Runway 4R: Track 4RD2 (or tighter pattern) as shown on the July 19, 1988 AICUZ draft.
 - (2) Runway 4L: Track 7 as shown in the 1984 AICUZ or Track 4LD2 as shown in the July 19, 1988 AICUZ draft.
 - (3) Runway 29: Track 29T4 (or tighter pattern) as shown in the July 19, 1988 AICUZ draft.
 - (4) Runway 11: Right-hand traffic.

ii. Approaches:

- (1) Runway 22L: Track 22LT1 (or tighter pattern) as shown in the July 19, 1988 AICUZ draft.
- (2) Runway 22R: The reciprocal of Track 7 as shown in the 1984 AICUZ.
- (3) Runway 11: Track 11T2 (or tighter pattern) and Runway 11 straight-in approach, as shown in the July 19, 1988 AICUZ draft.

The 1988 AICUZ will reflect current NASBP Standard Operating procedures, including those set forth above. The noise contours that are finally adopted in the 1988 AICUZ will be attached to this Agreement as Exhibit "D"; unless, within 30 days after publication by the Department of the Navy of its

final noise contours for the 1988 NASBP AICUZ, Campbell Estate determines not to proceed with this Agreement.

8. The Commanding Officer of NASBP shall, by his own action or through a designated representative, call, from time to time, but not less than once a year, a meeting of interested parties, including but not limited to representatives of the Estate of James Campbell, deceased, and authorized representatives of other landowners who are affected by NASBP operations, for the purpose of requesting input from each of them regarding noise monitoring activities, addressing appropriate issues as liaison, and, reviewing and obtaining comments from each of them upon proposed adjustments and modifications to the CIOM and NASBP Standard Operating Procedures and any disputes which may arise.

Requests for meetings and agenda items may be forwarded to the Commanding Officer of NASBP.

A meeting will be called and each invited party will be provided an adequate opportunity to review and comment upon AICUZ or similar studies prepared by a party to this Agreement before any study is published or publicly disseminated. All data, information, and methods employed in such AICUZ or similar studies shall be available to each invited party.

In addition, as to any Campbell Estate properties in the area described in paragraph 1h above, no new development or change in land use shall be proposed to any governmental authority until and unless the authorized representative of

The Commanding Officer of NAS Barbers Point has been given adequate opportunity to review and comment upon it for consistency with the CLUX.

If designated by the Commanding Officer of NASBP for inclusion as an invited party under this paragraph, any private landowner, in order to be given advance notice of Navy activities as described herein, must agree with the Navy that no development proposal or change in land use in the area under his or her control shall be proposed unless and until an authorized representative of the Commanding Officer of NAS Barbers Point has been given an adequate opportunity to review and comment upon it for consistency with the CLUX. Restrictive Easements.

The Navy agrees to purchase restrictive easements, under threat of condemnation, to effectuate the land use restrictions set forth in paragraph 1 above, for a total price of Six Million Five Hundred Thousand Dollars (\$6,500,000), which is mutually agreed to be full and fair compensation for the property interests conveyed; provided that, if payment is not presented to Campbell Estate by December 31, 1988, interest at the rate of 9% per annum will be added to the purchase price (to be calculated from the date this Agreement is signed). Campbell Estate hereby warrants that it has either the right to convey or the capacity to cause conveyance of the restrictive easements referenced herein.

- b. If the Navy in its sole discretion determines that the methods of navigation or the use of NASBP has so changed as to eliminate the Navy's need for said easements and issues a declaration to that effect, or if NASBP permanently ceases to be used as a military air station, the restrictive easements herein shall terminate.
- c. Campbell Estate agrees to provide a list of all interests, whether of record or otherwise, existing as to Areas 1 through 5 identified in paragraph 1. Restrictive easements acquired pursuant to this Agreement shall be subject to those interests, unless, within 30 days of receipt of a title search of its choosing, the Department of the Navy determines not to acquire the restrictive easements and not to proceed with this Agreement.
- d. Upon payment of the price specified in paragraph 9, above, Campbell Estate shall convey, in form and manner acceptable to the Attorney General of the United States, restrictive easements in accordance with this Agreement.
- e. Acquisition of real property interests by the Navy is subject to the availability of funding, including, if necessary, Congressional authorization and/or appropriation.
- f. Closing on the conveyance of the restrictive easements will occur within 30 days of monies being made available to the Department of the Navy for the acquisition.

consideration of the Navy's agreement that certain provisions herein shall be effective immediately and shall remain in force even if the conveyance of restrictive covenants is not effectuated (see paragraph 14, below), Campbell Estate agrees to be bound by the Agreement and the JHM (without conveying any real property interest) from the date of signing up to and including December 31, 1989, and to dismiss with prejudice Civil No. 86-1093 as described in paragraph 12a, below.

The parties mutually agree to use their best efforts and to act in good faith to effect the purposes of the Agreement and to obtain the \$6,500,000 full and fair compensation described in paragraph 9, above.

Upon the effective date of this Agreement, Campbell Estate will, as to those claims for which mutual releases are executed, dismiss with prejudice all claims, legal or equitable, which were or could have been brought or raised in Civil No. 86-1093 USDC Hawaii, and the parties shall stipulate to a stay of all matters pending in Civil No. 86-1094 USDC Hawaii. The Navy and Campbell Estate shall bear their own costs and fees arising out of and connected to Civil 86-1093.

Upon payment of the full and fair compensation, Campbell Estate will dismiss with prejudice all claims, legal or equitable, related directly or indirectly, that were or

could have been brought or raised in Civil No. 86-1094 USDC Hawaii, and will waive and dismiss any and all Federal Tort Claim Act actions which were or could have been brought and any and all other claims regarding or in any way related to the above claims or the 1984 or 1988 NASBP AICUZ studies. The Navy and Campbell Estate shall bear their own costs and fees arising out of and connected to Civil No. 86-1094 USDC Hawaii.

c. If the conveyance of restrictive easements is not effectuated, the parties to Civil No. 86-1094 shall return to the status quo ante as to Civil 86-1094, except as provided for in paragraph 14, below.

d. It is recognized that PRC Speas and named defendants ("PRC defendants") are parties in Civil No. 86-1093. With respect to the PRC defendants, the parties hereto agree to use their best efforts to cause the PRC defendants to agree to the dismissal with prejudice of Civil No. 86-1093, without compensation paid to the PRC defendants.

13. Incident to the dismissals with prejudice of Civil Nos. 86-1093 and 86-1094 USDC Hawaii, the Navy and Campbell Estate (and, if possible, the PRC defendants) shall execute a mutual release of all claims, damages, suits and demands, arising out of the suits and any claims and allegations asserted therein. The Navy will use, but only to the extent consistent with the individual capacity nature of the action, best efforts to encourage releases of Campbell Estate from the individual defendants in Civil No. 86-1093 USDC Hawaii.

his Agreement is subject only to the availability of funds for the Navy (see paragraph 9(e) above); provided, however, that notwithstanding the inability to effectuate the conveyance of the restrictive easements, the provisions of paragraphs 5b through 5d, and 6 through 8 shall survive and continue in force. In addition, the provisions of paragraphs 11 and 12(a) and (d) and 14 shall survive, but only with respect to the terms set forth in the paragraphs enumerated in the preceding sentence. This Agreement shall not become effective until, and unless, the terms of paragraphs 7 and 9(c) are met. When those terms are met, this Agreement shall become effective without further action of the parties and that date, identified by an exchange of letters between the counsel, shall be the effective date of this agreement.

This Agreement completely sets forth all of the terms, conditions, waivers, releases, stipulations and consideration that have been given and agreed to. No rights or obligations, other than as expressly set forth herein and necessary to administer the terms herein, shall be implied or enforceable. This Agreement may not be amended or modified in any way except in writing and signed by the parties hereto or their respective successors. This Agreement shall not be construed as stating or conceding any position taken by the parties in the litigation, nor shall

it be citable as precedent or as an admission of any matter by either party.

TRUSTEES UNDER THE WILL AND OF THE ESTATE OF JAMES CAMPBELL, DECEASED, acting in their fiduciary and not their individual corporate capacities:

Fred E. Jutter

APPROVED AS TO FORM:

[Signature]
 I. JAMES WRISTON, JR.
 WAYNE MASSER
 Attorneys for the Trustees

[Signature]

[Signature]

APPROVED AS TO FORM:

[Signature] 1-27-89
 ANATOLY KUSHNIR
 Attorney of the U.S. Navy

UNITED STATES NAVY

[Signature] 20 JAN 1989
 H. LAWRENCE GARETT, III
 Acting Secretary of the Navy

APPROVED AS TO FORM:

[Signature] 12/21/88
 JAMES E. BROOKSHIRE
 Deputy Chief, General
 Litigation Section

DEPARTMENT OF JUSTICE

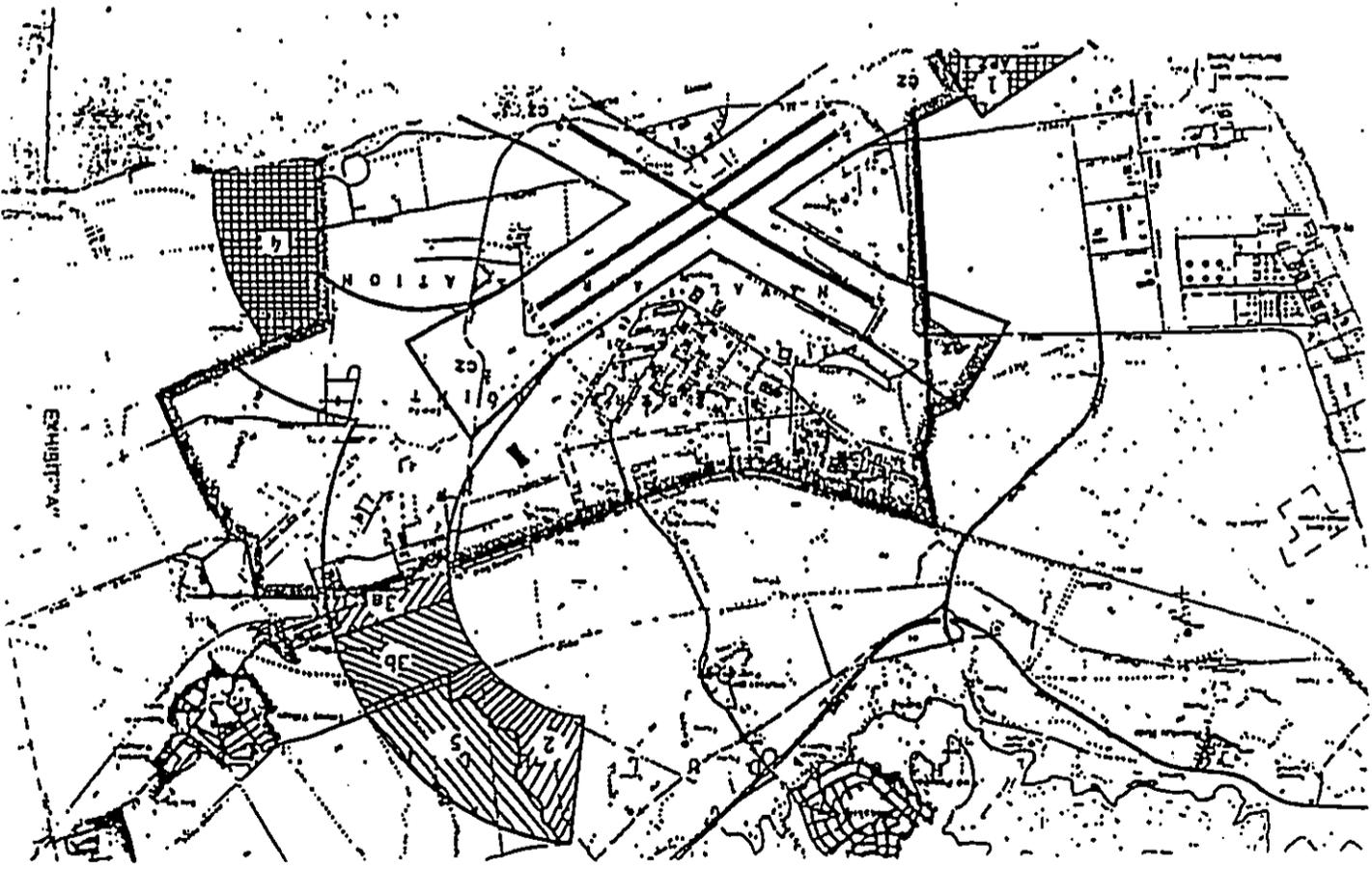


TABLE 4. SUGGESTED LAI USE COMPATIBILITY IN ACCIDENT RISKAL ZONES

| SLURRY NO. | LAND USE | | CLEAR ZONE | AFZ-1 | AFZ-2 |
|------------|---|--|------------|----------------|----------------|
| | NAME | | | | |
| 10 | Residential | | | | |
| 11 | Household units | | N | N | Y ¹ |
| 11.11 | Single units: detached | | N | N | N |
| 11.12 | Single units: semi-detached | | N | N | N |
| 11.13 | Single units: attached row | | N | N | N |
| 11.21 | Two units: side-by-side | | N | N | N |
| 11.22 | Two units: one above the other | | N | N | N |
| 11.31 | Apartments: walk up | | N | N | N |
| 11.32 | Apartments: elevator | | N | N | N |
| 12 | Group quarters | | N | N | N |
| 13 | Residential hotels | | N | N | N |
| 14 | Mobile home parks or courts | | N | N | N |
| 15 | Transient lodgings | | N | N | N |
| 16 | Other residential | | N | N | N ¹ |
| 20 | Manufacturing | | | | |
| 21 | Food & kindred products: manufacturing | | N | N ² | Y |
| 22 | Textile mill products: manufacturing | | N | N ² | Y |
| 23 | Apparel and other: finished products made from fabrics, leather, and similar materials: manufacturing | | N | N | N ² |
| 24 | Lumber and wood products (except furniture): manufacturing | | N | N | Y |
| 25 | Furniture and fixtures: manufacturing | | N | Y ² | Y |
| 26 | Paper & allied products: manufacturing | | N | Y ² | Y |
| 27 | Printing, publishing, and allied industries | | N | Y ² | Y |
| 28 | Chemicals and allied products: manufacturing | | N | N | N ² |
| 29 | Petroleum refining and related industries | | N | N | N |

EXHIBIT "B"

FIG. 4. SUGGESTED L.U. USE COMPATIBILITY IN ACCORDANCE WITH ZONING REGULATIONS

| L.U. USE | CLEAR ZONE | APZ-1 | | APZ-2 | |
|--|------------|---------|-------|-------|-------|
| | | APZ-1 | APZ-2 | APZ-1 | APZ-2 |
| Services | N | N | Y6 | | |
| Finance, insurance and real estate services | N | N | Y6 | | |
| Personal services | N | N | Y7 | | |
| Cemeteries | N | Y8 | Y8 | | |
| Business services | N | Y2 | Y6 | | |
| Repair services | N | N | N | | |
| Professional services | N | N | N | | |
| Hospitals, nursing homes | N | N | N | | |
| Other medical facilities | N | N | N | | |
| Centers: construction services | N | Y6 | Y6 | | |
| Governmental services | N | N | N | | |
| Educational services | N | N | N | | |
| Miscellaneous services | N | N2 | Y2 | | |
| Cultural, entertainment and recreational | | | | | |
| Cultural activities (including churches) | N | N | N2 | | |
| Nature exhibits | N | Y2 | Y2 | | |
| Public assembly auditoriums, concert halls | N | N | N | | |
| Outdoor music shells, amphitheaters | N | N | N | | |
| Outdoor sports arenas, spectator sports | N | N | N | | |
| Amusements | N | N | N | | |
| Recreational activities (incl. golf courses, riding stables, water recreation) | N | N | N | | |
| Resorts and group camps | N | Y8,9,10 | Y8 | | |
| Parks | N | N | Y8 | | |
| Other cultural, entertainment and recreation | N | Y9 | Y9 | | |
| Resource production and extraction | | | | | |
| Agriculture (except livestock) | Y | Y | Y | | |
| Livestock farming and animal breeding | N | Y | Y | | |
| Agricultural related activities | N | Y5 | Y | | |
| Forestry activities and related services | N5 | Y | Y | | |
| Fishing activities and related services | N5 | Y5 | Y | | |
| Hunting activities and related services | N | Y5 | Y | | |
| Other resource production and extraction | N | Y5 | Y | | |

| L.U. USE | CLEAR ZONE | APZ-1 | | APZ-2 | |
|--|------------|-------|-------|-------|-------|
| | | APZ-1 | APZ-2 | APZ-1 | APZ-2 |
| Manufacturing (cont'd) | | | | | |
| Rubber and misc. plastic products; manufacturing | N | N2 | N2 | | |
| Stone, clay and glass products; manufacturing | N | N2 | N2 | | |
| Primary metal industries | N | N2 | N2 | | |
| Fabricated metal products; manufacturing | N | N2 | N2 | | |
| Professional, scientific, and consulting instruments; photographic and optical goods; watches and clocks | N | N | N2 | | |
| Miscellaneous manufacturing | N | N | N2 | | |
| Transportation, communication and utilities | | | | | |
| Railroad, rapid rail transit and street railway transportation | N3 | Y4 | Y4 | | |
| Motor vehicle transportation | N3 | Y4 | Y4 | | |
| Aircraft transportation | N3 | Y4 | Y4 | | |
| Marine craft transportation | N3 | Y4 | Y4 | | |
| Highway & street right-of-way | N3 | Y4 | Y4 | | |
| Automobile parking | N3 | Y4 | Y4 | | |
| Communication | N3 | Y4 | Y4 | | |
| Utilities | N3 | Y4 | Y4 | | |
| Other transportation, communication and utilities | N3 | Y4 | Y4 | | |
| Trade | | | | | |
| Wholesale trade | N | Y2 | Y2 | | |
| Retail trade - building materials, hardware and farm equipment | N | Y2 | Y2 | | |
| Retail trade - general merchandise | N | N2 | N2 | | |
| Retail trade - food | N | N2 | N2 | | |
| Retail trade - automotive, marine craft, aircraft and accessories | N | Y2 | Y2 | | |
| Retail trade - apparel and accessories | N | N2 | N2 | | |
| Retail trade - furniture, home furnishings and equipment | N | N2 | N2 | | |
| Retail trade - eating and drinking establishments | N | N | N | | |
| Other retail trade | N | N2 | N2 | | |

TABLE 1. SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT OPERATIONAL ZONES

| SLUEN NO. | LAND USE NAME | CLEAR ZONE | LAND USE | |
|-----------|--|------------|----------|------|
| | | | AZ-1 | AZ-2 |
| 60 | Services | | | |
| 61 | Finance, insurance and real estate services | N | N | Y6 |
| 62 | Personal services | N | N | Y6 |
| 62.4 | Cemeteries | N | N | Y7 |
| 63 | Business services | N | N | Y7 |
| 64 | Repair services | N | N | Y8 |
| 65 | Professional services | N | N | Y |
| 65.1 | Hospitals, nursing homes | N | N | Y6 |
| 65.1 | Other medical facilities | N | N | N |
| 66 | Contract construction services | N | N | N |
| 67 | Governmental services | N | Y5 | Y |
| 68 | Educational services | N | N | Y6 |
| 69 | Miscellaneous services | N | N | Y6 |
| 70 | Cultural, entertainment and recreational | N | N | Y2 |
| 71 | Cultural activities (including churches) | N | N | N |
| 71.2 | Nature exhibits | N | N | N2 |
| 72 | Public assembly | N | Y2 | Y |
| 72.1 | Auditoriums, concert halls | N | N | N |
| 72.11 | Outdoor music shells, amphitheaters | N | N | N |
| 72.2 | Outdoor sports arenas, spectator sports | N | N | N |
| 73 | Amusements | N | N | N |
| 74 | Recreational activities (incl. golf courses, riding stables, water recreation) | N | N | Y8 |
| 75 | Resorts and group camps | N | Y8.9.10 | Y |
| 76 | Parks | N | N | N |
| 79 | Other cultural, entertainment and recreation | N | Y8 | Y8 |
| 80 | Resource production and extraction | N | Y9 | Y9 |
| 81 | Agriculture (except live-stock) | Y | Y | Y |
| 81.5 | Livestock farming and animal breeding | N | Y | Y |
| 81.7 | Agricultural related activities | N | Y5 | Y |
| 82 | Forestry activities and related services | N5 | Y | Y |
| 84 | Fishing activities and related services | N5 | Y5 | Y |
| 85 | Hunting activities and related services | N | Y5 | Y |
| 86 | Other resource production and extraction | N | Y5 | Y |

TABLE 2. SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT OPERATIONAL ZONES

| SLUEN NO. | LAND USE NAME | CLEAR ZONE | LAND USE | |
|-----------|--|------------|----------|------|
| | | | AZ-1 | AZ-2 |
| 60 | Services | | | |
| 61 | Finance, insurance and real estate services | N | N | Y6 |
| 62 | Personal services | N | N | Y6 |
| 62.4 | Cemeteries | N | N | Y7 |
| 63 | Business services | N | N | Y7 |
| 64 | Repair services | N | N | Y8 |
| 65 | Professional services | N | N | Y |
| 65.1 | Hospitals, nursing homes | N | N | Y6 |
| 65.1 | Other medical facilities | N | N | N |
| 66 | Contract construction services | N | N | N |
| 67 | Governmental services | N | Y5 | Y |
| 68 | Educational services | N | N | Y6 |
| 69 | Miscellaneous services | N | N | Y6 |
| 70 | Cultural, entertainment and recreational | N | N | Y2 |
| 71 | Cultural activities (including churches) | N | N | N |
| 71.2 | Nature exhibits | N | N | N2 |
| 72 | Public assembly | N | Y2 | Y |
| 72.1 | Auditoriums, concert halls | N | N | N |
| 72.11 | Outdoor music shells, amphitheaters | N | N | N |
| 72.2 | Outdoor sports arenas, spectator sports | N | N | N |
| 73 | Amusements | N | N | N |
| 74 | Recreational activities (incl. golf courses, riding stables, water recreation) | N | N | Y8 |
| 75 | Resorts and group camps | N | Y8.9.10 | Y |
| 76 | Parks | N | N | N |
| 79 | Other cultural, entertainment and recreation | N | Y8 | Y8 |
| 80 | Resource production and extraction | N | Y9 | Y9 |
| 81 | Agriculture (except live-stock) | Y | Y | Y |
| 81.5 | Livestock farming and animal breeding | N | Y | Y |
| 81.7 | Agricultural related activities | N | Y5 | Y |
| 82 | Forestry activities and related services | N5 | Y | Y |
| 84 | Fishing activities and related services | N5 | Y5 | Y |
| 85 | Hunting activities and related services | N | Y5 | Y |
| 86 | Other resource production and extraction | N | Y5 | Y |

TABLE 1 SUGGESTED LAND USE COMPATIBILITY IN URBAN AREAS

| NAME | NOISE SOURCE/CLASS LEVELS IN DB | | | | | | | | | |
|---|---------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|------|
| | C-55 | 55-65 | 65-70 | 70-75 | 75-80 | 80-85 | 85-90 | 90-95 | 95-100 | 100+ |
| Manufacturing (cont'd) | | | | | | | | | | |
| Rubber and misc. plastic products; manufacturing | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Stone, clay and glass products; manufacturing | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Primary metal industries | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Fabricated metal products; manufacturing | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks - manufacturing | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Miscellaneous manufacturing | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Transportation, communication and utilities | | | | | | | | | | |
| Railroad, rapid rail transit and street railway transportation | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Motor vehicle transportation | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Aircraft transportation | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Marine craft transportation | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Highway & street light-of-way | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Automobile parking | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Communication | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Utilities | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Other transportation, communication and utilities | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Trade | | | | | | | | | | |
| Wholesale trade | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - building materials, hardware and farm equipment | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - general merchandise | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - food | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - automotive, marine craft, aircraft and accessories | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - apparel and accessories | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - furniture, home furnishings and equipment | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Retail trade - eating and drinking establishments | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |
| Other retail trade | Y | Y | Y | Y2 | Y3 | Y4 | | | | R |

NOTES TO TABLE 4

1. Suggested maximum density 1-2 dwelling units per acre, possibly increased under a Planned Unit Development (PUD) where maximum lot coverage is less than 20 percent.
2. Within each land use category, uses exist where further evaluation may be needed due to the variation of densities of people and structures. For example, where a small neighborhood retail store may be compatible in A27-11, a shopping center or strip shopping mall would be incompatible due to the density of development and concentration of people.
3. The placing of structures, buildings or above-ground utility lines in the clear zone is subject to severe restrictions. In a majority of the clear zones, these items are prohibited. See NAVRAC P-80.1 (REVISED) for specific guidance.
4. No passenger terminals and no major above-ground transmission lines in A27-1.
5. Factors to be considered: labor intensity, structural coverage, explosive characteristics, air pollution.
6. Low-intensity office uses only. Meeting places, auditoriums, etc., not recommended.
7. Excludes chapels.
8. Facilities must be low intensity.
9. Clubhouse not recommended.
10. Large classes not recommended.

TABLE 1 SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES

| LAND USE | NOISE ZONES/DNL Levels in dB | | | | | | |
|--|------------------------------|-------|-------|-------|-------|-------|-----|
| | 0-55 | 55-65 | 65-70 | 70-75 | 75-80 | 80-85 | 85- |
| Services | Y | Y | Y | Y | Y | Y | Y |
| Finance, insurance and real estate services | Y | Y | Y | Y | Y | Y | Y |
| Personal services | Y | Y | Y | Y | Y | Y | Y |
| Cemeteries | Y | Y | Y | Y | Y | Y | Y |
| Business services | Y | Y | Y | Y | Y | Y | Y |
| Repair services | Y | Y | Y | Y | Y | Y | Y |
| Professional services | Y | Y | Y | Y | Y | Y | Y |
| Hospitals, nursing homes | Y | Y | Y | Y | Y | Y | Y |
| Other medical facilities | Y | Y | Y | Y | Y | Y | Y |
| Contract construction services | Y | Y | Y | Y | Y | Y | Y |
| Governmental services | Y | Y | Y | Y | Y | Y | Y |
| Educational services | Y | Y | Y | Y | Y | Y | Y |
| Miscellaneous services | Y | Y | Y | Y | Y | Y | Y |
| Cultural, entertainment and recreational | Y | Y | Y | Y | Y | Y | Y |
| Cultural activities (including churches) | Y | Y | Y | Y | Y | Y | Y |
| Nature exhibits | Y | Y | Y | Y | Y | Y | Y |
| Public assembly | Y | Y | Y | Y | Y | Y | Y |
| Auditoriums, concert halls | Y | Y | Y | Y | Y | Y | Y |
| Outdoor music shells, amphitheaters | Y | Y | Y | Y | Y | Y | Y |
| Outdoor sports areas, spectator sports | Y | Y | Y | Y | Y | Y | Y |
| Amusements | Y | Y | Y | Y | Y | Y | Y |
| Recreational activities (incl. golf courses, riding stables, water recreation) | Y | Y | Y | Y | Y | Y | Y |
| Resorts and group camps | Y | Y | Y | Y | Y | Y | Y |
| Parks | Y | Y | Y | Y | Y | Y | Y |
| Other cultural, entertainment and recreation | Y | Y | Y | Y | Y | Y | Y |
| Resource production and extraction | Y | Y | Y | Y | Y | Y | Y |
| Agriculture (except livestock) | Y | Y | Y | Y | Y | Y | Y |
| Livestock farming and animal breeding | Y | Y | Y | Y | Y | Y | Y |
| Agricultural related activities | Y | Y | Y | Y | Y | Y | Y |
| Forestry activities and related services | Y | Y | Y | Y | Y | Y | Y |
| Fishing activities and related services | Y | Y | Y | Y | Y | Y | Y |
| Mining activities and related services | Y | Y | Y | Y | Y | Y | Y |
| Other resource production and extraction | Y | Y | Y | Y | Y | Y | Y |

NOTES FOR TABLE 1

- Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in the 65-70 and strongly discouraged in DNL 70-75. The absence of viable alternative development options should be determined and an evaluation should be conducted prior to approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones.
- Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB (DNL 65-70) and 30 dB (DNL 70-75) should be incorporated into building codes and be considered in individual approvals. Normal construction can be expected to provide a NLR of 20 dB, thus the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.
- NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor noise exposure particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures which only protect interior spaces.
- Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- If project or proposed development is noise sensitive, use indicated in the table, land use is compatible without NLR.
- No buildings.
- Land use compatible provided special sound reinforcement systems are installed.
- Residential buildings require a NLR of 25.
- Residential buildings require a NLR of 30.
- Residential buildings not permitted.
- Land use not recommended, but if community decides use is necessary, hearing protection devices should be worn by occupants.

KEY TO TABLE 1

Standard Land Use Coding Manual

Land Use and related structures compatible without restrictions.

Land Use and related structures are not compatible and should be prohibited.

Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

Land Use and related structures generally compatible; see notes 2 through 4.

Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 must be incorporated into design and construction of structure.

Land Use generally compatible with NLR; however, measures to achieve an overall noise reduction do not necessarily solve noise difficulties and additional evaluation is warranted.

Day-Night Average Sound Level.

Mathematical symbol for DNL.

Relevant Land Use and Height Restrictions For the Four Alternate Sites

(1) Land Use Restrictions

- (a) Site B: Recreational and spectator sports activities are allowed. Sport stadiums are not allowed, except a 5,000 seat sports stadium is allowed within one-half of the easement area northwest of a line bisecting Area 5 and parallel to NAS Barbers Point Runway 040.**
- (b) Site C: Only recreational and spectator sports activities are allowed. Sports stadiums are not allowed.**

(2) Height Restrictions

- (a) Site B: Structures and other appurtenances such as light poles, flag poles, etc., should not exceed 228 feet elevation, mean sea level (MSL) datum.**
- (b) Site C: Structures and other appurtenances similar to above, should not exceed 183 feet elevation, MSL. datum.**

According to the Assistant to the Commander of the Naval Base Pearl Harbor, "it appears that further consideration of Site C as an alternative location would require modification to the existing easement as the proposed use is not allowed by the terms of the easement. It is recommended, therefore, that Site C no longer be considered as a feasible alternative. As to Site B, the location of the stadium would need to be carefully planned and height concerns carefully addressed. Only by use of Sites A and D could we state, based on the present information, that the land use proposed is, with respect to the NAS Barbers Point noise and accident environment, consistent with agreements reached between the Navy and the Campbell Estate regarding compatibility with aircraft operations."

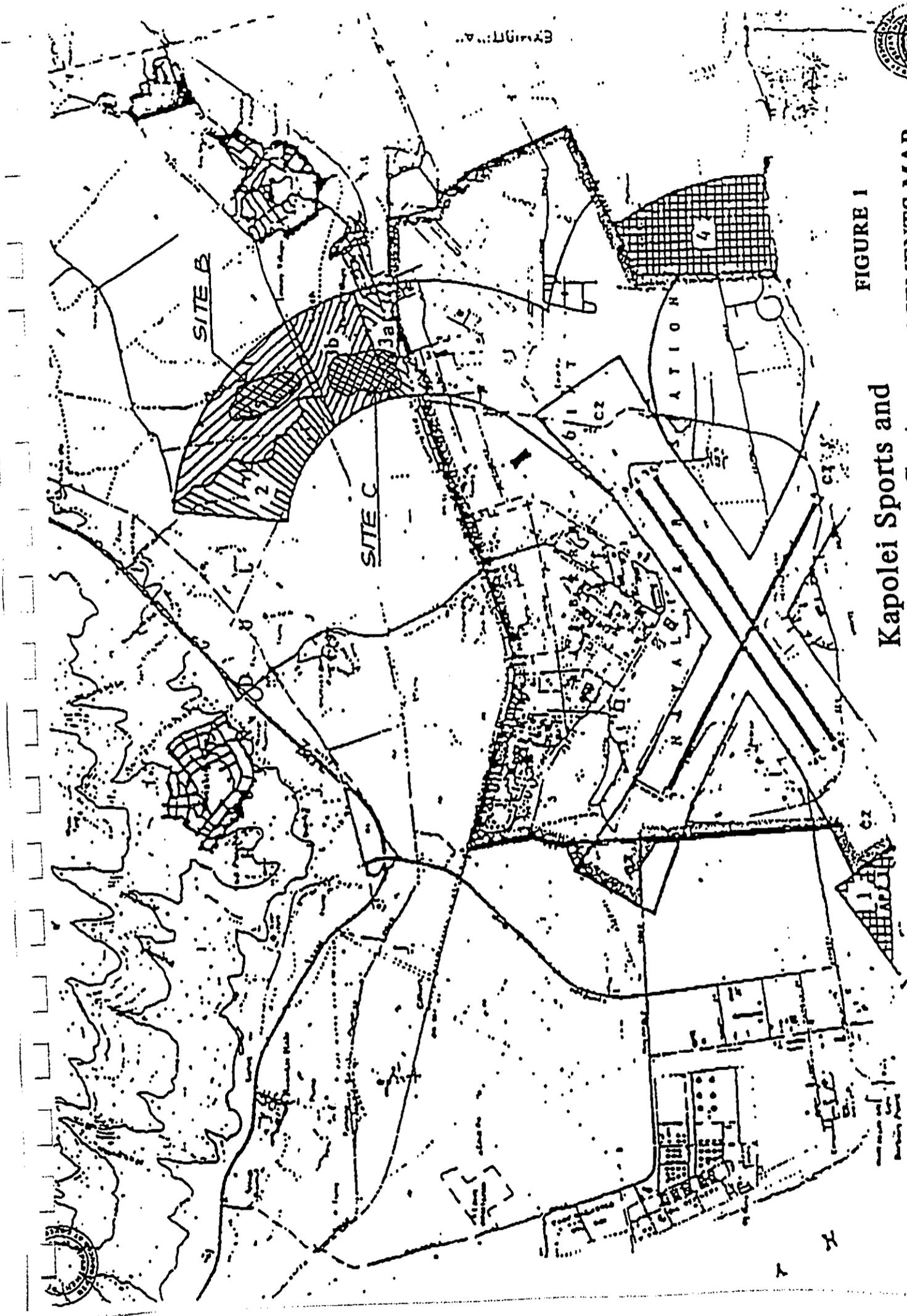


FIGURE 1
Kapolei Sports and Recreation Center EASEMENTS MAP
Project
Ewa, Oahu
State of Hawaii, DAGS

Appendix J

Bibliography

Bibliography

- Belt Collins & Assoc., Draft Environmental Impact Statement Ewa Marina Phase II, Nov. 1989.
- Belt Collins & Assoc., Final Environmental Impact Statement for AES-Barber's Point, Inc. Coal-Fired Cogeneration Facility, June 1989.
- City & County of Honolulu, Dept. of Housing & Community Development, West Loch Estates Final Environmental Impact Statement, Dec. 1987.
- City & County of Honolulu, Dept. of Parks & Recreation, Draft Environmental Impact Statement West Loch Golf Course & Shoreline Park, Jan. 1988.
- City & County of Honolulu, Dept. of Parks & Recreation, West Loch Golf Course & Shoreline Park Final Environmental Impact Statement, July 1989.
- Dashielle, Eugene P., Johnson, Eric (subcontractor), Office of State Planning, State of Hawaii, Nov. 1990.
- Dept. of Business, Economic Development and Tourism, The State of Hawaii Data Book 1990.
- Dept. of Parks & Recreation, Index of Oahu Parks and Facilities, 1988.
- GACI, Inc., Ewa Marina Community Supplemental Environmental Impact Statement Increment I, Mar. 1984.
- Gentry Development Co., Ewa by Gentry Development Plan Application, Jan. 1990.
- Gray, Hong, Bills & Associates, Inc., Ewa Gentry Final Environmental Impact Statement - Apr. 1988.
- Helber, Hastert & Kimura, Planners, Final Environmental Impact Statement Kapolei, Town Center, Ewa, Oahu, Hawaii, Aug. 1988.
- Hida, Okamoto & Associates, Draft Environmental Impact Statement Lualualei Golf Course, Nanakuli, Oahu, Hawaii, Feb. 1991.
- Housing Finance and Development Corporation with the Department of Housing and Community Development, Kapolei Villages Master Plan Report, Dec. 1987.
- Kusao, Tyrone T., Draft Environmental Impact Statement Ewa Marina, Phase II, Feb. 1991.

- Land Study Bureau, Detailed Land Classification-Island of Oahu, Dec. 1972.
- The Lusk Company, Kapolei Knolls Draft Environmental Impact Statement, Appendix D, Jan. 1988.
- The Lusk Company, Final Environmental Impact Statement Kapolei Knolls, Honouliuli District, Oahu, Hawaii, Mar. 1988.
- Mitsunaga & Associates, Inc., Kapolei Sports and Recreation Center Feasibility Study (Draft), June 1990.
- Okamoto, Wilson and Associates, Inc., Conceptual Master Plan and Final Environmental Impact Statement Aiea Bay State Recreation Area, Nov. 1988.
- Pagliari, Penny, Ewa Plantation: A Historical Survey 1890 to 1940, University of Hawaii - Manoa Historical Preservation Program, Dec. 1987.
- Root, Barry D. & Neal, Barry D., Air Quality Study for the Proposed Royal Kunia Phase II Project, Hoaeae, Ewa, Oahu, June 1989.
- R. M. Towill Corporation, Draft Environmental Impact Statement for the Villages of Kapolei Golf Course Extension, Ewa, Oahu, Hawaii, Mar. 1990.
- R. M. Towill Corporation, Environmental Assessment East Kapolei, Honouliuli, Ewa, Oahu, Hawaii, Aug. 1990.
- R. M. Towill Corporation, Environmental Assessment for the Villages of Kapolei Golf Course Extension, Ewa, Oahu, Hawaii, Mar. 1990.
- R. M. Towill Corporation, Environmental Impact Statement Preparation Notice West Loch Bluffs and Ewa Villages Master Plan, Ewa, Oahu, Hawaii, May 1990.
- R. M. Towill Corporation, Ewa Villages Master Plan, Ewa, Oahu, Hawaii, Sept. 1990.
- R. M. Towill Corporation, Final Environmental Impact Statement Ewa Villages Master Plan, Feb. 1991.
- R. M. Towill Corporation, Final Report Kapolei Water Master Plan, The Estate of James Campbell, Housing Development and Development Corporation, State of Hawaii, June 1988.
- R. M. Towill Corporation, Kapolei Village Environmental Impact Statement Feb. 1988.
- R. M. Towill Corporation, West Loch Bluffs & Ewa Villages Master Plan, Ewa, Oahu, Hawaii, May 1990.

United States Dept. of Agriculture Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, Aug. 1972.

Wanket, William E., Final Environmental Impact Statement Kapolei Business-Industrial Park Volume I, Technical Appendices, Apr. 1990.

Wanket, William E., Final Environmental Impact Statement Kapolei Business-Industrial Park Volume II, Technical Appendices, Apr. 1990.

Wanket, William E., Makaiwa Hills Final Environmental Impact Statement, Apr. 1991.

Wanket, William E., Royal Kunia Phase II Final Environmental Impact Statement, Hoaeae, Ewa, Oahu, July 1989.

Wanket, William E., Royal Kunia Phase II Environmental Impact Statement, Appendix F, July 1989.

West Beach Estates, Ko Olina Phase II Petition for Land Use District Boundary Amendment, June 1990.

Wilson, Okamoto & Associates, Inc., Ko Olina Phase II Planning Report, June 1990.

Appendix K

Table A - Schedule of Permits and Approvals
Table B - Preliminary Budget Estimates: On-site and Off-site Costs for Alternative Sites A, B, C & D

TABLE A

SCHEDULE OF PERMITS AND APPROVALS

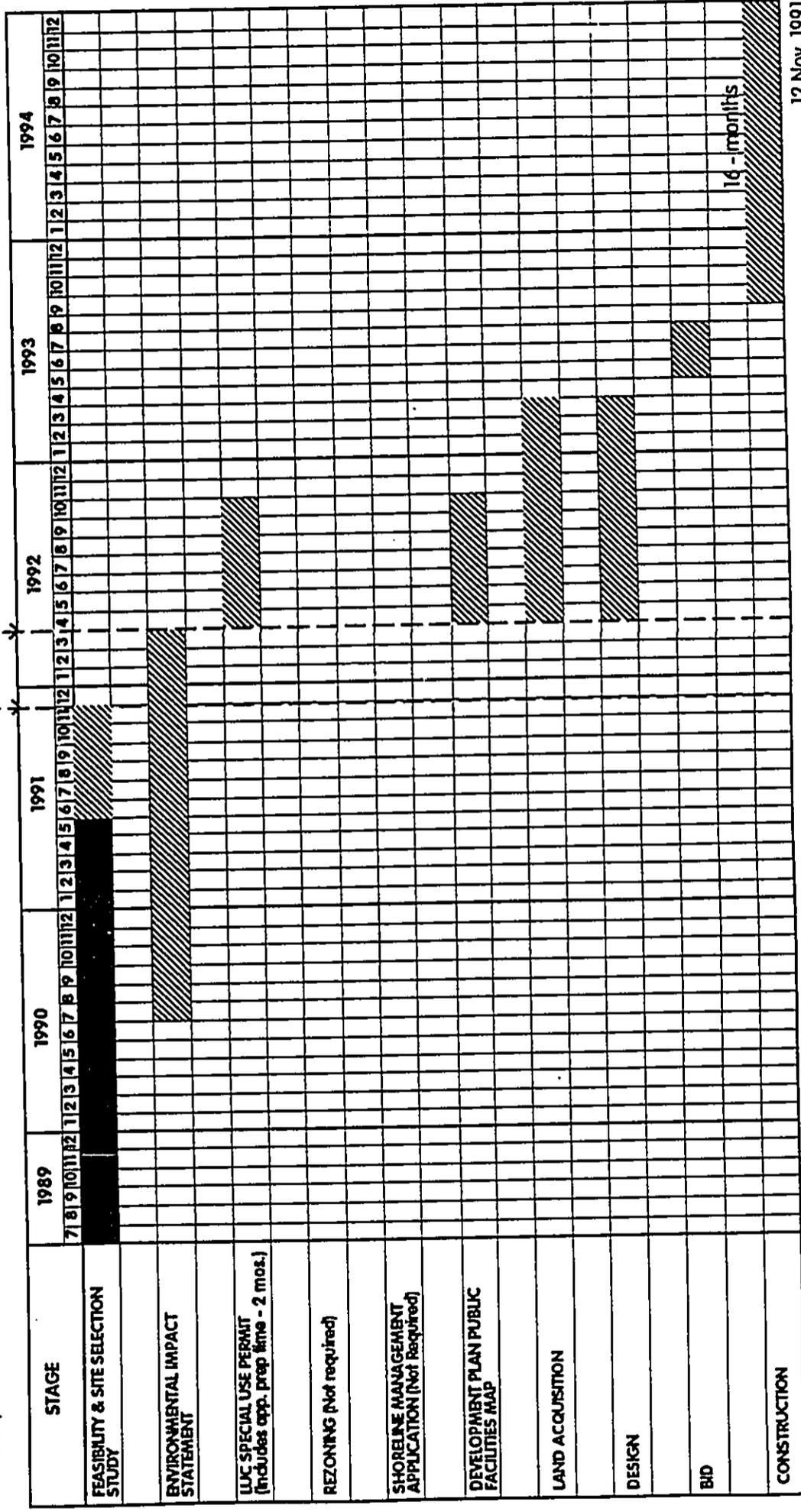
KAPOLEI SPORTS AND RECREATION CENTER ALTERNATIVE SITES ANALYSIS REPORT

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII
HONOLULU, HAWAII

Consultant's Report is Completed /
Consultant's Conceptual Drawings Begin *

PREPARED BY:
MITSUNAGA & ASSOCIATES, INC.
HONOLULU, HAWAII

Conceptual Drawings are Completed / Design Begins



12 Nov. 1991

* Consultant's contract requires preparation of conceptual drawings after site evaluation and selection

LEGEND



DEPENDENT UPON APPROPRIATION BEING MADE BY 1992 LEGISLATURE

**Table B
Preliminary Budget Estimates: On-site and Off-site Costs for
Alternative Sites A, B, C & D**

PRELIMINARY BUDGET ESTIMATE FOR KAPOLEI SPORTS & RECREATION CENTER

ALTERNATIVE SITE "A"

TOTALS

| | |
|--|---------------|
| On-Site Budget Estimate, from Prototype Layout: | \$ 34,320,000 |
| Additional Site Improvement Cost, due to site conditions/land formations: | \$ 35,700,000 |
| Off-Site Budget Estimate, Utilities and Infrastructure: | \$ 0 |

\$ 70,020,000

ALTERNATIVE SITE "B"

| | |
|--|---------------|
| On-Site Budget Estimate, from Prototype Layout: | \$ 34,320,000 |
| Additional Site Improvement Cost, due to site conditions/land formations: | \$ 0 |
| Off-Site Budget Estimate, Utilities and Infrastructure: | \$ 1,168,500 |

\$ 35,488,500

ALTERNATIVE SITE "C"

| | |
|--|---------------|
| On-Site Budget Estimate, from Prototype Layout: | \$ 34,320,000 |
| Additional Site Improvement Cost, due to site conditions/land formations: | \$ 0 |
| Off-Site Budget Estimate, Utilities and Infrastructure: | \$ 1,162,500 |

\$ 35,482,500

ALTERNATIVE SITE "D"

| | |
|--|---------------|
| On-Site Budget Estimate, from Prototype Layout: | \$ 34,320,000 |
| Additional Site Improvement Cost, due to site conditions/land formations: | \$ 8,350,000 |
| Off-Site Budget Estimate, Utilities and Infrastructure: | \$ 362,500 |

\$ 43,032,500

PRELIMINARY BUDGET ESTIMATE FOR KAPOLEI SPORTS & RECREATION CENTER

ON-SITE PRELIMINARY BUDGET ESTIMATES

PHASE I - SITE IMPROVEMENTS, UTILITIES & FACILITIES (STRUCTURES)

| | | | |
|--|----|-----------|------------------|
| Earthwork, Paving, Sidewalks, Fencing, Grassing | \$ | 5,863,300 | |
| Civil Utilities (On-Site Water, Sewer, Irrigation, Drainage) | | 3,000,000 | |
| | | <hr/> | |
| Subtotal | | 8,863,300 | |
| Contingency (10%) | | 886,330 | |
| | | <hr/> | |
| Total | \$ | 9,749,630 | |
| | | | |
| Rounded to | \$ | 9,800,000 | USE \$ 9,800,000 |
| | | | <hr/> |
| Facilities (Structures) | | | |
| Multi-Purpose Building (10,000 SF) | \$ | 1,500,000 | |
| Batting Cages (15,000 SF) | \$ | 750,000 | |
| Maintenance Building (3,200 SF) | \$ | 448,000 | |
| Observation Towers (2,000 SF) | \$ | 300,000 | |
| | | <hr/> | |
| Subtotal | \$ | 2,998,000 | |
| | | | |
| Rounded to | \$ | 3,000,000 | |
| | | | |
| Electrical Utilities (Lighting) | \$ | 2,500,000 | |
| | | <hr/> | |
| Subtotal | \$ | 5,500,000 | |
| Contingency (10%) | \$ | 550,000 | |
| | | <hr/> | |
| Total | \$ | 6,050,000 | |
| | | | |
| Rounded to | \$ | 6,100,000 | USE \$ 6,100,000 |
| | | | <hr/> |
| TOTAL BUDGET ESTIMATE, PHASE I | | | \$ 15,900,000 |
| | | | <hr/> |

PHASE II - SITE IMPROVEMENTS, UTILITIES & FACILITIES (STRUCTURES)

| | | | |
|--|----|-----------|------------------|
| Earthwork, Paving, Sidewalks, Fencing, Grassing | \$ | 2,784,400 | |
| Civil Utilities (On-Site Water, Sewer, Irrigation, Drainage) | | 500,000 | |
| | | <hr/> | |
| Subtotal | | 3,284,400 | |
| Contingency (10%) | | 328,440 | |
| | | <hr/> | |
| Total | \$ | 3,612,840 | |
| | | | |
| Rounded to | \$ | 3,620,000 | USE \$ 3,620,000 |
| | | | <hr/> |

| | | | |
|--|----|------------|-------------------|
| Facilities (Structures) | | | |
| Dormitory (22,200 S.F.) | \$ | 4,200,000 | |
| Stadium (5,000 Seating Capacity) | \$ | 9,000,000 | |
| | | <hr/> | |
| Subtotal | \$ | 13,200,000 | |
| Electrical Utilities (Lighting) | | | |
| | \$ | 250,000 | |
| | | <hr/> | |
| Subtotal | \$ | 13,450,000 | |
| Contingency (10%) | \$ | 1,345,000 | |
| | | <hr/> | |
| Total | \$ | 14,795,000 | |
| | | <hr/> | |
| Rounded to | \$ | 14,800,000 | USE \$ 14,800,000 |

TOTAL BUDGET ESTIMATE, PHASE II \$ 18,420,000

TOTAL ON-SITE PRELIMINARY BUDGET ESTIMATE, PHASES I AND II = \$ 34,320,000

ADDITIONAL SITE IMPROVEMENT COSTS: SITES "A" AND "D"

Of the four Alternative Sites, Sites "A" and "D" will require extensive mass excavation work and importing of "borrow" material due to steeply sloping site conditions or major land formations which protrude within the boundaries of the complex. Sites "B" and "C," however, are situated on gently sloping parcels of land which can be graded relatively easily. There are no mass excavation costs nor imported borrow material costs associated with Alternative Sites "B" and "C".

ALTERNATIVE SITE "A"

| | | | | | |
|--------------------------|--------------------|------------------|---|---------------|---------------|
| Mass Excavation | 36,265 Cu. Yds. | @ \$5. / Cu. Yd. | = | \$ 181,325 | |
| Imported Borrow Material | 1,775,500 Cu. Yds. | @ \$20 / Cu. Yd. | = | \$ 35,510,000 | |
| | | | | | |
| | | Total | = | \$ 35,691,325 | |
| | | USE | | | \$ 35,700,000 |

ALTERNATIVE SITE "D"

| | | | | | |
|--------------------------|------------------|------------------|---|--------------|--------------|
| Mass Excavation | 615,830 Cu. Yds. | @ \$10 / Cu. Yd. | = | \$ 6,158,300 | |
| Imported Borrow Material | 108,200 Cu. Yds. | @ \$20 / Cu. Yd. | = | \$ 2,164,000 | |
| | | | | | |
| | | Total | = | \$ 8,322,300 | |
| | | USE | | | \$ 8,350,000 |

OFF-SITE PRELIMINARY BUDGET ESTIMATES

ALTERNATIVE SITE "A"

Adequate utilities and infrastructure improvements are available and adjacent to this Alternative Site, therefore improvements are not required. Connections are required; however, their costs are considered insignificant.

Potable Water: Connect to existing 30" concrete cylinder / 20" C.I. pipe(s)
 Sanitary Sewer: Connect to existing 20" gravity sewer line
 Paved Roadway: Connect to adjacent Fort Weaver Road

TOTAL OFF-SITE BUDGET ESTIMATE, SITE "A": \$ 0

ALTERNATIVE SITE "B"

There are no piped utility lines (water, sewer), nor improved roadways within the vicinity of this Alternative Site.

| | | | | | | |
|-----------------|---------------------------------------|------------|---|------------------|---|------------|
| Potable Water: | 12" water main | 3,300 feet | @ | \$ 75.00 / foot | = | \$ 247,500 |
| Sanitary Sewer: | 12" sewer | 2,600 feet | @ | \$ 105.00 / foot | = | \$ 273,000 |
| Paved Roadway: | 4-lane road to tie in to HFDC roadway | 2,700 feet | @ | \$ 240.00 / foot | = | \$ 648,000 |

TOTAL OFF-SITE BUDGET ESTIMATE, SITE "B": \$ 1,168,500

ALTERNATIVE SITE "C"

There are no piped utility lines (water, sewer), nor improved roadways within the vicinity of this Alternative Site.

| | | | | | | |
|-----------------|---------------------------------------|------------|---|------------------|---|------------|
| Potable Water: | 12" water main | 6,300 feet | @ | \$ 75.00 / foot | = | \$ 472,500 |
| Sanitary Sewer: | 12" sewer | 2,000 feet | @ | \$ 105.00 / foot | = | \$ 210,000 |
| Paved Roadway: | 4-lane road to tie in to HFDC roadway | 2,000 feet | @ | \$ 240.00 / foot | = | \$ 480,000 |

TOTAL OFF-SITE BUDGET ESTIMATE, SITE "C": \$ 1,162,500

ALTERNATIVE SITE "D"

Potable water line (16" concrete cylinder pipe) and an improved roadway (Fort Weaver Road) available and adjacent to this site. Connections are required; however, their costs are considered insignificant.

Potable Water: Connect to existing 16" concrete cylinder pipe

| | | | | | | |
|------------------|----------------------|------------|---|-----------------|---|------------|
| Sanitary Sewers: | 6" sewer force main | 3,500 feet | @ | \$ 75.00 / foot | = | \$ 262,500 |
| Sewer Lift Sta.: | Lump Sum (Allowance) | | | | | \$ 100,000 |

Paved Roadway: Connect to adjacent Fort Weaver Road

TOTAL OFF-SITE BUDGET ESTIMATE, SITE "D": \$ 362,500

Appendix L

Comments on Draft EIS

Comments on Draft EIS

Note: Response letters with and without comments were received by the following organizations during the mandatory 45-day review period up to the deadline of February 23, 1992. Where substantive and appropriate all comments were responded to and incorporated into the Final EIS.

- Land Use Commission, Department of Business, Economic Development and Tourism, by Esther Ueda, Executive Officer
- Hawaii Air National Guard, by Lieutenant Colonel Jerry M. Matsuda Contracting and Engineering Officer
- State of Hawaii, Department of Land and Natural Resources, by William Paty, Chairperson
- Department of Public Works, City and County of Honolulu, by Sam Callejo, Director and Chief Engineer
- Building Department, City and County of Honolulu, by Herbert K. Muraoka, Director and Building Superintendent
- State of Hawaii, Office of Environmental Quality Control, by Jeyan Thirugnanan, Planner
- City & County of Honolulu, Fire Department, by Lionel E. Camara, Fire Chief
- City & County of Honolulu, Department of Parks and Recreation, by Walter M. Ozawa, Director
- City & County of Honolulu, Police Department, by Chester E. Hughes, Assistant Chief of Police, Support Services Bureau
- City and County of Honolulu, Department of Transportation Services, by Joseph M. Magaldi, Jr., Director
- United States Department of Agriculture, Soil Conservation Service, by Warren M. Lee, State Conservationist

February 19, 1992

Governor John Waihee
February 19, 1992
Page 2

RECEIVED
FEB 24 1992

MITSUMAGA ASSOCIATES, INC.

Honorable John Waihee
Governor, State of Hawaii
State Office Tower
235 South Beretania Street
Honolulu, HI 96813

Dear Governor Waihee: ..

Subject: Draft EIS Kapelei Sports and Recreation Center

We have reviewed the draft EIS, and would like to offer the following comments for your consideration.

1. The report (page 1) uses 10 acres/1,000 population as the standard requirement for recreation needs. We believe that 2 acres/1,000 population is the normal standard as shown on the Development Plan Common Provisions (ROH32-1.5 Bii and iii), and the standard generally used by the city's Department of Parks and Recreation to forecast recreation land needs.
2. We question the need to encumber Campbell Estate lands any further, as is proposed in sites A and D, when the state of Hawaii has recently acquired 1,100 acres of land from Campbell Estate in a condemnation. This acreage of land has not been designated for any specific use so that sites B and C, which are within the condemnation area, should be given priority consideration for a sports facility consistent with the restrictive easements affecting those sites.
3. While the sites are analyzed as to the presence or need for sewage lines (page 32) to serve the subject area, we believe that the analysis should be supplemented with an analysis of the adequacy of existing and proposed lines to handle the anticipated load from the facility.

We thank you for the opportunity to submit our comments and observations.

Very truly yours,

Henry Eng
Henry Eng, AICP
Manager, Land Planning

115-01002900/K10103

cc: Ralph Yukumoto, DAGS
Roy Iizaki, Mitsunaga & Assoc., Inc.

ORDINANCE NO. 84-54, as amended
by Ord. Nos. 84-111, 85-71, 86-68, 86-76, 87-43, 88-22, 89-9,
90-5, 90-41, 90-43, 90-89, 91-77, 91-78 and 91-82

CHAPTER 32
DEVELOPMENT PLANS

ARTICLE 1. DEVELOPMENT PLAN COMMON PROVISIONS

SECTION 32-1.1. DEFINITIONS

Whenever used in this development plan unless the context otherwise requires:

- (1) "Annual Amendment Review" means the process for considering significant amendments to the development plans as required by Section 5-403 of the charter.
- (2) "CIP" means the Capital Improvements Program and Budget Report of the City and County of Honolulu.
- (3) "City" means the body politic and corporate by the name of "City and County of Honolulu."
- (4) "Charter" means the Revised Charter of the City and County of Honolulu, 1973, as amended.
- (5) "City Council" means the City Council of the City and County of Honolulu ("Council").
- (6) "Chief Planning Officer" means the administrative head of the Department of General Planning.
- (7) "Department of General Planning" means the Department of General Planning ("DGP") of the City and County of Honolulu.
- (8) "Department of Land Utilization" means the Department of Land Utilization ("DLU") of the City and County of Honolulu.
- (9) "Development Plan Status Review" means the process for conducting an annual review of development plans as required by Section 5-403 of the charter.
- (10) "General plan" means the General plan of the City and County of Honolulu as defined by Section 5-408 of the Charter.
- (11) "LUO" means the Land Use Ordinance of the City and County of Honolulu, Chapter 21A of the Revised Ordinances of Honolulu 1978, as amended.

parcels smaller than the required minimum lot size of the surrounding uses or are not on a subdivision parcel solely for its use, the area occupied need not be shown on the maps and may be zoned in accordance with the use designation on the land use map.

- (i) Parks Standards. The following types of parks may be established within each community:
 - (aa) District Parks/Centers. District recreation parks shall consist of 15-20 acres or more and serve approximately 25,000 people. Facilities may include a gymnasium/recreation complex, a pool, playfield, courts and passive areas.
 - (bb) Community Parks/Centers. Community recreation parks shall consist of 10 acres or more and serve approximately 10,000 people. Facilities may include a recreational building, playfields, courts and passive areas.
 - (cc) Neighborhood Parks/Playgrounds. Neighborhood parks shall consist of 4-6 acres or more and serve approximately 5,000 people. Facilities may include playfields, courts and passive areas.
 - (dd) Mini Parks, Urban Squares, Malls and Passive Parks. Small mini parks, urban parks and squares shall be located wherever possible in high density neighborhoods as well as in high density business and industrial areas. Passive and picnic areas may be part of the above park types.
- (ii) Built-up Areas. Built-up areas with inadequate recreational opportunities and insufficient suitable sites for future recreational development shall have recreation opportunities made available within a reasonable distance of the immediate service area. Land for open space and recreation purposes within and outside of the immediate service area shall be provided at a minimum of 2 acres per thousand persons.
- (iii) Suburban and New Development areas. Suburban and new development areas shall include land for open space and recreation purposes at a minimum of 2 acres per thousand persons.

JOHN WAHKE
DIRECTOR



RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

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

P. O. BOX 118, HONOLULU, HAWAII 96810

LETTER NO. (P) 1613.2

JUL 1 1992

Mr. Henry Eng, AICP
Manager, Land Planning
Campbell Estate
828 Fort Street Mall, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Eng:

Subject: DEIS for the Kapolei Sports
and Recreation Center

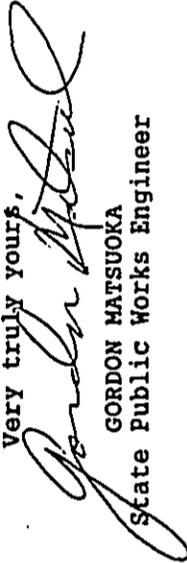
Thank you for your comments on the subject Draft Environmental Impact Statement (DEIS) regarding land ratios for recreation needs, sewage, and state condemnation of lands affecting Sites B and C. All of your comments have been included in Sections 1.2, 4.10, and 3.12.4 of the Final EIS (FEIS).

More specifically:

1. Your comment with regard to two acres/1000 population has been inserted in Section 1.2 Background.
2. Your comment that Sites B and C be given priority consideration for a sports facility is shared by others who we consulted with (e.g. OSCO, etc.) and has been addressed in Section 4.10 State Land Bank.
3. Your comment regarding an analysis of the adequacy of existing and proposed sewage lines to handle the anticipated load from the facility is reflected in Section 3.12.4 Sewage and will be addressed further in the design phase of the facility.

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,


GORDON MATSUOKA
State Public Works Engineer

RM:jk

U.S. AIR MAIL

U.S. AIR MAIL

POSTAL SERVICE
Department of the Interior



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
200 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE 595-1414

RECEIVED
10 1992

ASSOCIATES

January 8, 1992

TO: Mr. Roy Iizaki
Mitsunaga & Associates, Inc.
747 Amama Street, Room 216
Honolulu, Hawaii 96814

FROM: Jeyan Thirugnanam, Planner
Office of Environmental Quality Control

SUBJECT: Draft EIS for the Kapolei Sports and Recreation Center
This is to confirm that the information received for the distribution of the Draft Environmental Impact Statement for the subject project has been verified, therefore, distribution of the document may proceed.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 51
HONOLULU, HAWAII 96813

RECEIVED
FEB 03 1992

REF: OCEA:SKK

JAN 31 1992

FILE NO.: 92-409
DOC. NO.: 2490E

The Honorable Brian J. J. Choy, Director
Office of Environmental Quality Control
c/o Governor's Office
State of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Mr. Choy:

SUBJECT: Draft Environmental Impact Statement for the Kapolei Sports and Recreation Center

Thank you for giving our department the opportunity to review this matter. Our department's Historic Preservation Division has determined that this project will have "no effect" on historic sites. We have no other comments at this time.

Thank you for your cooperation in this matter. Please feel free to call me or Sam Lemmo at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

William W. Pyle
WILLIAM W. PYLE

cc: DACS
Mitsunaga & Associates, Inc.

WILLIAM W. PYLE, CHAIRMAN
OFFICE OF CONSERVATION AND ENVIRONMENTAL AFFAIRS

MEMBER
HONOLULU SOCIETY
Dan T. Kochi
Executive Director
State of Hawaii
Department of Land and Natural Resources
Honolulu, Hawaii 96813
TELEPHONE 595-1414

04/05/92

12:37

002

Handwritten note: Kua yuu 49...

Handwritten initials: JHC

JOHN WAIHEE
GOVERNOR OF HAWAII



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

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

RECEIVED In reply, please refer to:

March 30, 1992

'92 APR -2 AS 92-007/epo

To: The Honorable John Waihee
Governor, State of Hawaii
c/o Director, Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

From: John C. Lewin, M.D. *[Signature]*
Director of Health

RECEIVED
APR -3 1992

Subject: Draft Environmental Impact Statement (DEIS)
Kapolei Sports and Recreation Center
Ewa, Oahu

mitsunaga & associates, inc.

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

Wastewater

As the subject area is sewerred, we have no objections to the proposed sports and recreation center provided that the project is connected to the public sewers. The developer should work closely with the County to assure the availability of additional treatment capacity and adequacy for the project. Non-availability of treatment capacity will not be an acceptable justification for use of any private treatment works.

If you should you have any questions on the matter, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4200.

Drinking Water

1. Hawaii Administrative Rules, Title 11, Chapter 20, Potable Water Systems, Section 30 requires that new or substantially modified distribution systems for public water systems be approved by the Director. However, if the water system is under the jurisdiction of the City and County of Honolulu, the Board of Water Supply will be responsible for the review and approval of the plans.
2. Page 39, of the DEIS indicates that nonpotable water will be utilized to irrigate the playing fields, open space, and landscaped areas. The potable and nonpotable water systems must be carefully designed and operated to prevent cross-connections and backflow conditions. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow preventers to avoid contaminating the potable

The Honorable John Waihee
March 30, 1992
Page 2

92-007

water supply. In addition, all nonpotable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of nonpotable water.

Underground Injection Control (UIC)

1. All four Alternate Sites "A," "B," "C," and "D" are situated above the UIC line. Land areas above the UIC line are considered to contain underground sources of drinking water. Thus, these areas should be protected against all sources of groundwater contamination.
2. If the project plans to use drainage injection wells (drywells), it will be necessary to obtain a UIC permit to authorize the construction and operation of these wells.
3. The UIC rules prohibit sewage or industrial disposal wells in areas above the UIC line.
4. Injection wells cannot be sited within 1/4 mile of any drinking water source.

If you should have any questions, please contact Stuart Yamada (Drinking Water) or Chauncey Hew (UIC) of the Safe Drinking Water Branch at 586-4258.

Water Pollution

A storm water National Pollutant Discharge Elimination System (NPDES) permit is required for development activities involving clearing, grading or excavation of more than five (5) acres of total land area. The storm water NPDES permit application must be submitted to the Director of Health at least 90 days before the date on which construction is to commence.

If you have any questions on this matter, please contact Mr. Steve Chang at 586-4309.

Solid Waste

The assessment of solid waste impacts addressed in this DEIS is totally inadequate. No discussion of the total volume of waste generated during construction nor the annual volumes generated during operations is provided. In addition, the document does not present any possible alternatives to utilizing existing County facilities for disposal.

The State (HRS 342H: 25% by 1995 and 50% by 2000) and City and County of Honolulu (ordinance 89-114: 50% by 1995 and 75% by 2000) have established aggressive waste diversion goals. Provision for alternative systems must be included in the project design, focusing on internal separation mechanisms for recycling and composting.

As H-Power is reaching capacity and the Waimanalo Gulch Landfill is filling up faster than anticipated, the EIS must address the minimization and diversion of both construction and operational wastes.

If you should have any questions on this matter, please contact Mr. John Harder at 586-4240.

The Honorable John Waihee
March 30, 1992
Page 3

92-007

Noise

1. Noise from recreational activities, including people shouting, yelling or screaming, and from sound production and reproduction devices may impact surrounding residences in terms of annoyances at Alternative Sites A, C, and D. Future housing developments near Alternative Site B may also be impacted by such activities. Noise associated with increased vehicular traffic may also impact the neighboring communities.
2. Activities associated with the construction phase of the project must also comply with the provisions of Chapter 43, Community Noise Control for Oahu.
3. Heavy vehicles travelling to and from the project site must comply with the provisions of Title 11, Administrative Rules, Chapter 42, Vehicular Noise Control for Oahu.

If you should have any questions, please contact Mr. Jerry Haruno, Noise and Radiation Branch at 586-4701.

c: Wastewater Branch
Safe Drinking Water Branch
Clean Water Branch
Office of Solid Waste
Noise and Radiation Branch

c: Ralph Yukumoto, DAGS
/Roy Iizaki, Mitsunaga & Associates, Inc.

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER

ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1615.2

JUL 1 1992

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

Dear Dr. Lewin:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environmental Impact Statement (DEIS). Your comments regarding wastewater, drinking water, underground injection control, and water pollution deal primarily with the period after a final site has been determined. All of these concerns noted in your letter will be addressed further during the design phase of the project and the developer will be made aware of all requirements noted and all your suggestions for compliance.

Your comments with regard to solid waste are reflected and addressed in Section. 3.12.5 Solid Waste Disposal and in Appendix A of the Final EIS (FEIS).

We should also note that your letter and our response will be made part of the Comments Section of the FEIS.

Very truly yours,

RUSSEL S. NAGATA
State Comptroller

100



RECEIVED
DEPARTMENT OF TRANSPORTATION
100 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-0007
FEB 28 1992
MITUNAGA & ASSOCIATES, INC.

REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTORS
JOYCE T. OBIER
AL F. SCHULTZ
JEANNE K. SCHULTZ
CALVIN H. TSUBOKA
IN REPLY REFER TO:

HMY-PS
2.0743

Governor, State of Hawaii
c/o Office of Environmental Quality Control
Page 2
February 18, 1992
HMY-PS 2.07

TO: Governor, State of Hawaii
c/o Office of Environmental Quality Control
FROM: Rex D. Johnson
Director of Transportation
SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS), KAPOLEI
SPORTS AND RECREATION CENTER, EWA, OAHU

- 5. The applicant must commit to participate in regional roadway improvements on a prorata share basis.
- 6. Plans for roadway construction work within the State highway right-of-way must be submitted for our review and approval.

c: Mr. Ralph Yukumoto
Dept. of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, HI 96813
✓ Mr. Roy Iizaki
Mitsunaga and Associates, Inc.
Honolulu, HI 96814

have the following comments on the DEIS:

Upon selection of a site for the proposed project, the developer should prepare and submit a Traffic Impact Analysis Report for our review. The report should include an evaluation of possible traffic operational impacts that the project may have on the surrounding highway system.

Table 6, (Critical Road Volumes, should be revised based on full build-out in the Ewa plain. The 1987 Volume/Capacity Study may be outdated.

In section 4.3.1.5 (Transportation), pages 39 and 40, the statement relating to the Ewa Regional Highway Transportation Master Plan may not be completely correct. The State Department of Transportation has not accepted and agreed with the Master plan at this time.

The applicant must coordinate with affected developers on appropriate internal roadway connections and other infrastructure.



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

RUSSEL S. NAI
COMPTROLLER
ROBERT P. TAI
DEPUTY COMPTROLLER

LETTER NO. (P)16:

Honorable Rex D. Johnson
Page 2

Ltr. No. (P)1617.

Your letter and our response will also be made part of
the Comments Section of the FEIS.

JUL 1 1992

Honorable Rex Johnson
Director
Department of Transportation
State of Hawaii
Honolulu, Hawaii

Dear Mr. Johnson:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environ-
mental Impact Statement (DEIS). All of your specific concerns
have been addressed and your comments included in Table 6 of
Appendix F, and Sections 3.12.6 and 4.3.1.5 of the Final EIS
(FEIS).

More specifically:

1. Table 6 "Critical Road Volumes" of the Traffic
Impact Analysis combined the 1987 Volume Capacity
Study with other factors to arrive at the projected
capacity figures. This estimate will be revised as
necessary once the final site selection has been
determined.
2. Your comments with regard to the Ewa Regional High-
way Master Plan are addressed in Section 4.3.1.5
under Transportation.

Your other comments which apply to the period after the
selection of a site, of course, cannot be addressed until
that time. However, even these comments are made part of
Section 3.12.6 and the Comments Section of the FEIS, and will
be available for review by the developer and all other parties
involved after the final selection of a site.

Very truly yours,

RUSSEL S. NAITO
State Comptroller

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

410 SOUTH KING STREET, 21st FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 933-4433 • FAX: (808) 937-8438



F. PAKI

E. JAY
GAIL
DEPUTY

RECEIVED
MAR 11 1992

March 6, 1992
MITSUNAGA & ASSOCIATES, INC.

Honorable John Waihee
March 6, 1992
Page 2

We strongly recommend coordination with this Department during the planning and construction phases of this project.
Thank you for the opportunity to comment.

Sincerely,

E. JAMES TURSE
Director

cc: Department of Accounting
& General Services
Mitsunaga & Associates, Inc.

The Honorable John Waihee
Governor
State of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS)
Kapolei Sports And Recreation Center
December 1991

Thank you for the opportunity to review and comment on the DEIS for the Kapolei Sports And Recreation Center.

Our first comment applies to Chapter 3.0 Description of The Existing Environment, 3.11 Socioeconomic Resources, 3.11.7 Housing and Household Size, Page 29. Under the paragraph pertaining to planned developments which would increase the housing stock over the next 10 to 15 years, we recommend that the DEIS include residential projects of the Department of Housing and Community Development, which include the proposed Laulani/Fairways Subdivision (1,850 units) and the Ewa Villages Revitalization project (1,130 units). These projects are all situated within the "Second City" of Kapolei.

Our second comment addresses descriptions made in Chapter 3.0 Description of The Existing Environment, 3.14 Recreational Facilities, Pages 36 and 37. The DEIS fails to describe the City's planned 33 acre, Ewa Mahiko District Park in Ewa Villages and the City's recently completed 39 acre, West Loch Shoreline Park in West Loch.

Our third comment applies to Appendix A, Preliminary Analysis of Alternative Sites, Evaluation Criteria. We note that Alternative Site "C" for the subject project may have a significant impact upon the adjacent residences of Varona Village, a component of the Department's Master Planned Ewa Villages Revitalization Project. Should Alternative Site "C" be selected, we request that the DEIS provide additional detailed information on the probable impacts on the physical and socio-economic environments and infrastructure systems of the surrounding areas.



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

P. O. BOX 115, HONOLULU, HAWAII 96819

MUSSELLS MAGUIRA
COMPTROLLER
ROBERT P. TALUSHKA
DEPUTY COMPTROLLER

LETTER NO. (P)1616.2

Mr. E. James Turse
Page 2

Ltr. No. (P)1616.2

Your letter and our response will also be made part of
the Comments Section of the FEIS.

JUL 1 1992

Mr. E. James Turse
Director
Department of Housing
and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii

Dear Mr. Turse:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environ-
mental Impact Statement (DEIS). All of your comments have
been incorporated in Sections 3.11.7, 3.14, and Appendix A
(Alternate Site C) of the Final EIS (FEIS).

More specifically:

1. Your first comment with regard to description of
the existing environment and your suggestion to
include the proposed Iaulani/Fairways Subdivision
(1,850 units) and the Ewa Villages Revitalization
Project (1,130 units) in the discussion of the
"Second City" of Kapolei have been addressed in
Section 3.11.7 Housing and Household Size.
2. Your second comment suggesting that Ewa Mahiko
District Park and West Loch Shoreline Park be
included under Section 3.14 Recreational Facilities
has been done.
3. Your third comment with regard to Alternate Site C
and its potential impact on Varona Village has been
reflected in Appendix A. Also, your concerns will
be further addressed in the design phase after the
determination of a final site. At that time, we
expect a coordination of efforts with representa-
tives of the Department of Accounting and General
Services, Housing Finance and Development Corpora-
tion, and yourself.

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RH:jk



COPY

February 25, 1992

RECEIVED
FEB 28 1992

The Honorable John Waihee
Governor, State of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

mitsunaga & associates, inc.

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement for the Proposed Kapolei Sports and Recreation Center, TMK: 9-1-16: 25 (Sites B & C); 9-1-17: 4 (Site D); 9-1-18: 1 (Site A)

Thank you for the opportunity to review and comment on the proposed sites for the Kapolei Sports and Recreation Center. We have the following comments to offer:

1. The developer will be required to obtain a water allocation from either the State Department of Land and Natural Resources (DLNR) or the Campbell Estate.
2. The potable water requirements for the proposed project should be determined.
3. Potable water main extensions will be required for Sites B & C along Waimanalo Road.
4. Nonpotable water should be used for irrigation and should be of equal or better quality than the underlying aquifer. The use of nonpotable irrigation water should be coordinated with the State Department of Health and DLNR.
5. Landscaping should utilize xeriscape principles to reduce irrigation requirements.
6. Approved reduced pressure principle backflow prevention assemblies should be installed on the consumer side of the property line as close to the domestic water meter as physically possible and prior to any branch piping.

If you have any questions, please contact Bert Kuioka at 527-5235.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Kazu Hayashida".

KAZU HAYASHIDA
Manager and Chief Engineer

cc: **Ralph Yukumoto, DAGS**
✓ Roy Iizaki, Mitsunaga & Associates



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

P. O. BOX 114, HONOLULU, HAWAII 96819

RUSSELL S. MADAMA
COMPTROLLER
ROBERT P. TALLUHER
PROPERTY COMPTROLLER

LETTER NO. (P)1618.2

Mr. Kazu Hayashida
Page 2

Ltr. No. (P)1618.2

JUL 1 1992

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii

Dear Mr. Hayashida:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft
Environmental Impact Statement (DEIS). All of your comments
have been included in Section 3.3.1 of the Final EIS (FEIS).

More specifically, we have noted in Section 3.3.1 Ground-
water that:

1. The developer will be required to obtain a water allocation from either the State Department of Land and Natural Resources (DLNR) or the Campbell Estate.
2. The potable water requirements for the proposed project should be determined.
3. Potable water main extensions will be required for Sites B and C along Waimanalo Road.
4. Nonpotable water should be used for irrigation and should be of equal or better quality than the underlying aquifer. The use of nonpotable irrigation water should be coordinated with the State Department of Health and DLNR.
5. Landscaping should utilize xeriscape principles to reduce irrigation requirements.
6. Approved reduced pressure principle backflow prevention assemblies should be installed on the consumer side of the property line as close to the domestic water meter as physically possible and prior to any branch piping.

Also, your letter and our response will be made part of the Comments Section of the FEIS.

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RM:jk



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-6020

IN REPLY REFER TO:

11000
Ser 00F(238)/0534
09 MAR 1992

The Honorable John Waihee
Governor of Hawaii
Hawaii State Capitol
Honolulu, HI 96813

RECEIVED
MAR 10 1992

mitsunaga & associates, inc.

Dear Governor Waihee:

DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE
KAPOLEI SPORTS AND RECREATION CENTER

Thank you for the opportunity to review the draft EIS for the Kapolei Sports and Recreation Center of December 1991. We offer the following comments:

a. Page 21, under Section 3.5 - Noise

This section addresses the Naval Air Station Barbers Point (NAS Barbers Point) Air Installations Compatible Use Zone (AICUZ) of 1989 which is presented in Figure 3.5, Appendix C. This AICUZ map represents day/night average sound levels, called LDNs, from NAS Barbers Point operations. It does not depict aircraft noise level patterns originating from commercial aircraft landing or taking off from nearby Honolulu International Airport (HIA). We would suggest that the EIS consider the cumulative noise effects from both NAS Barbers Point and HIA as indicated in enclosure (1). Accordingly, we would recommend that enclosure (1) be included as an appendix to the 1989 AICUZ (Figure 3.5, Appendix C) with a statement saying it is for informational purposes only and is not the Navy's official AICUZ map.

b. Page 23, (first full paragraph) under Section 3.6 - Hazards

This section states:

"An agreement was reached between the Navy and Campbell Estates on matters arising out of the AICUZ Study. The Navy agreed to purchase restrictive easements for \$6.5 million to prevent the need for Accident Potential Zones (APZs) on 750 acres of Campbell Estate Land. To the extent that land uses are consistent with the terms of the agreement, no APZ is necessary with respect to the land. Additionally, . . . "

The underlined portion of the above second sentence is incorrect. By purchasing restrictive easements, the Navy was able to limit the scope of future development and uses in the affected areas, therefore obviating, i.e., eliminating or rendering unnecessary, references to these lands as APZs. Accordingly, the EIS should be amended to use the word "obviate" vice "prevent" in the referenced paragraph.

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE KAPOLEI SPORTS AND RECREATION CENTER

c. Page 23 and Appendix A. Discussions regarding the restrictive use easements should be modified to reflect the following:

Site B is encumbered by easement 2278 (Area 5) filed under Land Court Application 1067. Site C is encumbered by easement 2280 and 2279 (Areas 3a and 3b, respectively) filed under Land Court Application 1067. See enclosure (2).

(1) Land Use Restrictions

(a) Site B: Recreational and spectator sports activities are allowed. Sport stadiums are not allowed, except a 5,000 seat sports stadium is allowed within one-half of the easement area northwest of a line bisecting Area 5 and parallel to NAS Barbers Point Runway 040.

(b) Site C: Only recreational and spectator sports activities are allowed. Sports stadiums are not allowed.

(2) Height Restrictions

(a) Site B: Structures and other appurtenances such as light poles, flag poles, etc., should not exceed 228 feet elevation, mean sea level (MSL) datum.

(b) Site C: Structures and other appurtenances similar to above, should not exceed 183 feet elevation, MSL datum.

Therefore, it appears that further consideration of Site C as an alternative location would require modification to the existing easement as the proposed use is not allowed by the terms of the easement. It is recommended, therefore, that Site C no longer be considered as a feasible alternative. As to Site B, the location of the stadium would need to be carefully planned and height concerns carefully addressed. Only by use of Sites A and D could we state, based on the present information, that the land use proposed is, with respect to the NAS Barbers Point noise and accident environment, consistent with agreements reached between the Navy and the Campbell Estate regarding compatibility with aircraft operations.

d. Drainage. The proposed drainage plan for both Sites B and C is to provide on-site retention ponds, with two alternatives to handle excess runoff: either a connection to the Kapolei Golf Course (Villages of Kapolei Regional Drainage Plan); or to a realigned and improved Kalo Gulch. The completed drainage studies for the Villages of Kapolei or the Ewa Gentry and Ewa Marina developments should be revised to include the runoff contribution from this proposal if the appropriate study has not accounted for the proposed area. The Navy would request assurances from the developer and the State that NAS Barbers Point will not experience any runoff or flooding greater than it has experienced historically without the proposed developments. Also for Alternate Sites A and D, we would recommend that the potential drainage discharge and non-point source pollution impacts into West Loch and nearby wildlife refuge be addressed.

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE KAPOLEI SPORTS AND RECREATION CENTER

We appreciate the opportunity to review and comment on the draft EIS for the subject development, and request that we be provided three copies of the final document. The Navy point of contact is Mr. Bill Liu, telephone 471-3324.

Sincerely,



W K. LIU
Assistant Base Civil Engineer
By direction of
the Commander

Encl:

- (1) LDN Noise Contour Map
- (2) LDN Contour Mean Year (Including HIA)

Copy to:

Department of Accounting & General Services
State of Hawaii

Attn: Mr. R. Yukumoto

P.O. Box 119

Honolulu, HI 96813

Mitsunaga & Associates, Inc

Attn: Mr. R Iizaki

747 Amana Street, Room 216

Honolulu, HI 96814

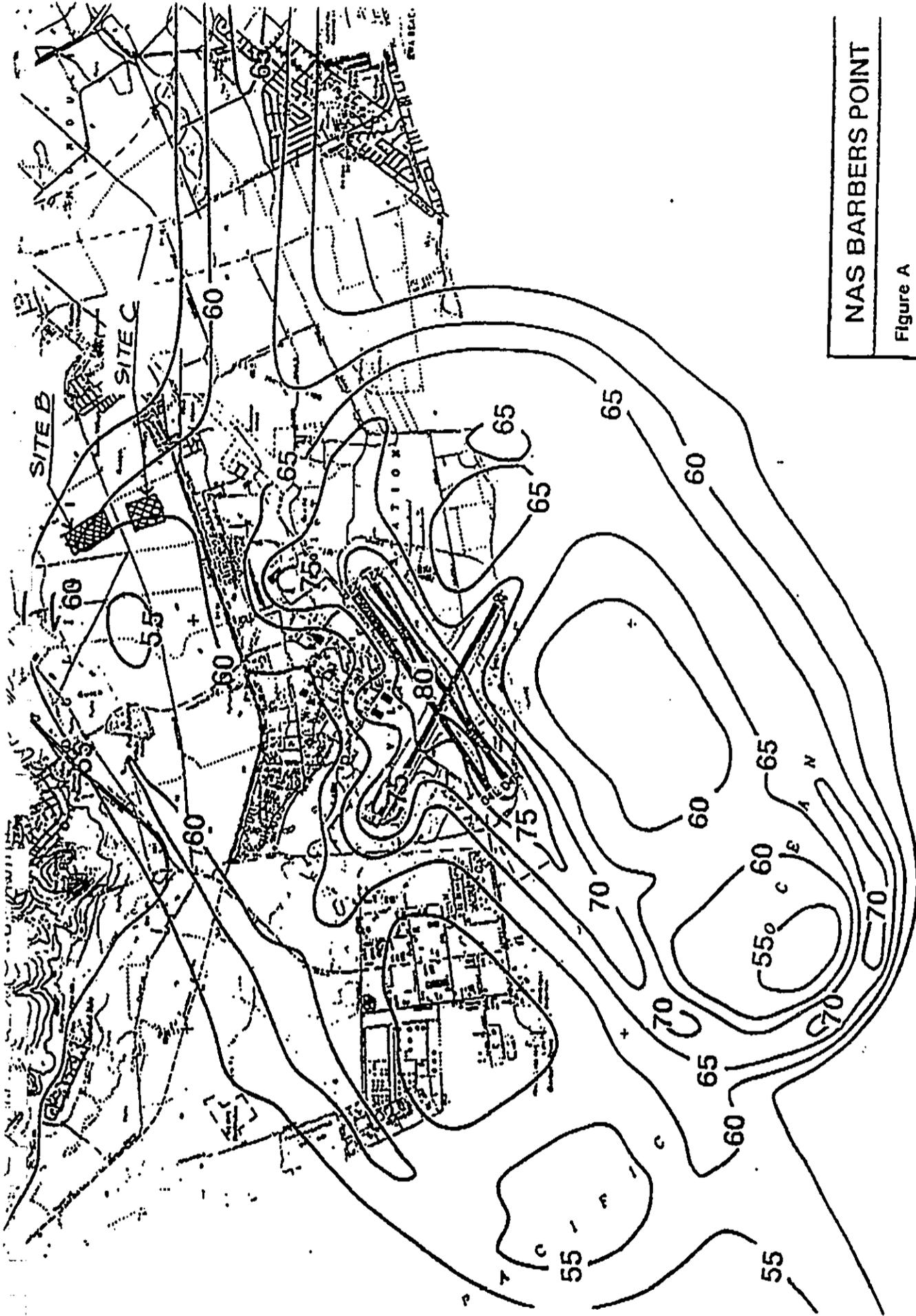
Director

State of Hawaii

Office of Environmental Quality Control

220 South King Street, Fourth Floor

Honolulu, HI 96813



NAS BARBERS POINT

Figure A
 Ldn Contours Mean Year
 Without TACAMO
 And With HNL Operations

SCALE IN FEET
 0 2000 4000 8000

HARRIS MILLER MILLER & HARRIS

Appendix To Figure 3.5
 Patterns indicate combined LDN noise contours generated by
 both NASBP and Honolulu International Airport.
 Unofficial AICUZ Map. For information only.

ENCLOSURE (1)

03/11/92 16:40



Enclosure

ENCLOSURE

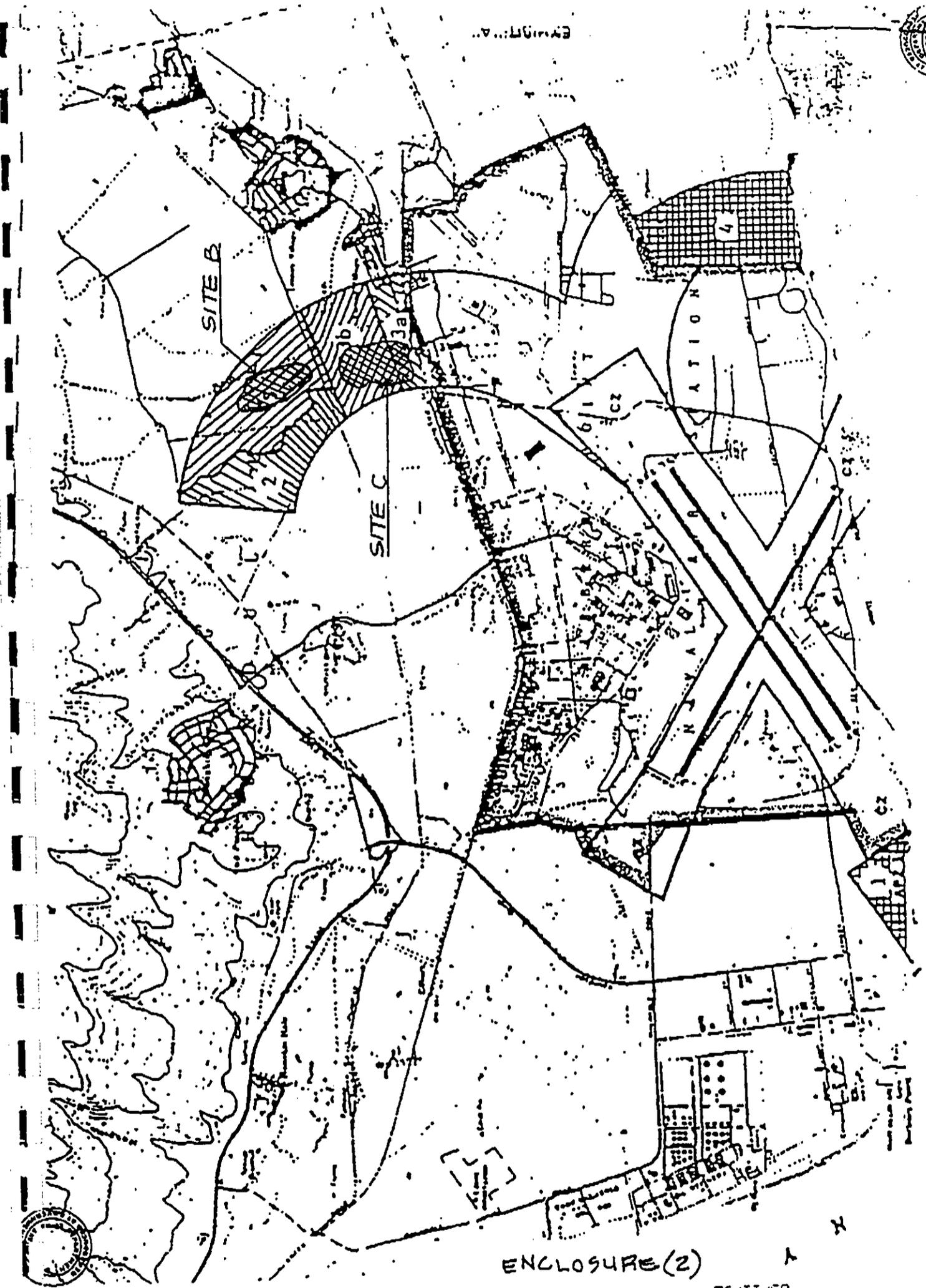
SITE B

SITE C

ATION

ENCLOSURE (2)

43



JOHN WAIHEE
GOVERNOR



RUSSEL S. HAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

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

LETTER NO. (P)1614.2

JUL 1 1992

Mr. William K. Liu
Assistant to the Commander
Naval Base Pearl Harbor
P. O. Box 110
Pearl Harbor, Hawaii 96860-5020

Dear Mr. Liu:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments, suggested revisions, and enclosures with regard to the subject Draft Environmental Impact Statement (DEIS). All of your comments, suggested revisions, and enclosures have been incorporated in Section 3.6, Appendix A, Appendix C and Appendix I of the Final EIS (FEIS).

More specifically, your comments regarding land use restrictions and height restrictions are reflected and addressed in Appendix I, while your comments on drainage are reflected and addressed in Appendix A. Also, your suggestions will be further addressed by the developer during the design phase of the facility after a final site has been selected.

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RM:jk



Jim A. Bonnel
 Director
 General Department

The Honorable John Waihee
 Governor of Hawaii
 Hawaii State Capitol
 Honolulu, HI 96813

February 24, 1992

RECEIVED
 FEB 26 1992

MITSUMAGA & ASSOCIATES, INC

The Honorable John Waihee
 Governor of Hawaii
 February 24, 1992
 Page 2

HECO shall reserve further comments pertaining to the protection of existing powerlines bordering and servicing the area until construction plans are finalized.

Sincerely,

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS)
 Kapolei Sports & Recreation Center
 Ewa, Oahu, Hawaii

Attachment (1)

We have reviewed the subject DEIS, and have the following comments:

cc: Mr. Ralph Yukumoto, DAGS
 Mr. Roy Iizaki, Mitsunaka & Associates, Inc.

1. Please include the following paragraph at the end of section 3.12.1 on page 31:

"HECO will provide power to the site from substations located outside of the development. New power distribution lines will be extended to the development from HECO's distribution system in the vicinity of the Alternate Sites."

2. Refer to attached map:

- a. Sites B and C will be impacted by the preferred alignment of the proposed Waiau-CIP 138KV Part 1 transmission lines.
- b. Site A will be impacted by an alternative alignment of the proposed Waiau-CIP 138KV - Part 2 transmission lines.
- c. Site D will not be impacted by any of the alternative alignments of the proposed Waiau CIP 138KV - Parts 1 and 2 transmission lines.



An HEI Company

JOHN WAIHEE
GOVERNOR



RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

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

LETTER NO. (P)1621.2

JUL 1 1992

Mr. William A. Bonnet
Manager
Environmental Department
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Bonnet:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environmental Impact Statement (DEIS) regarding electricity. All of your comments have been included in Section 3.12.1 and the specific impacts by site are reflected on the Location Map (Figure 1A) of the Final EIS (FEIS).

We should also note that a representative of the Department of Accounting and General Services, Division of Public Works will arrange a meeting with HECO prior to final location of the site. During this phase, we will discuss with HECO clarification of the alignment and appropriate distance from transformers.

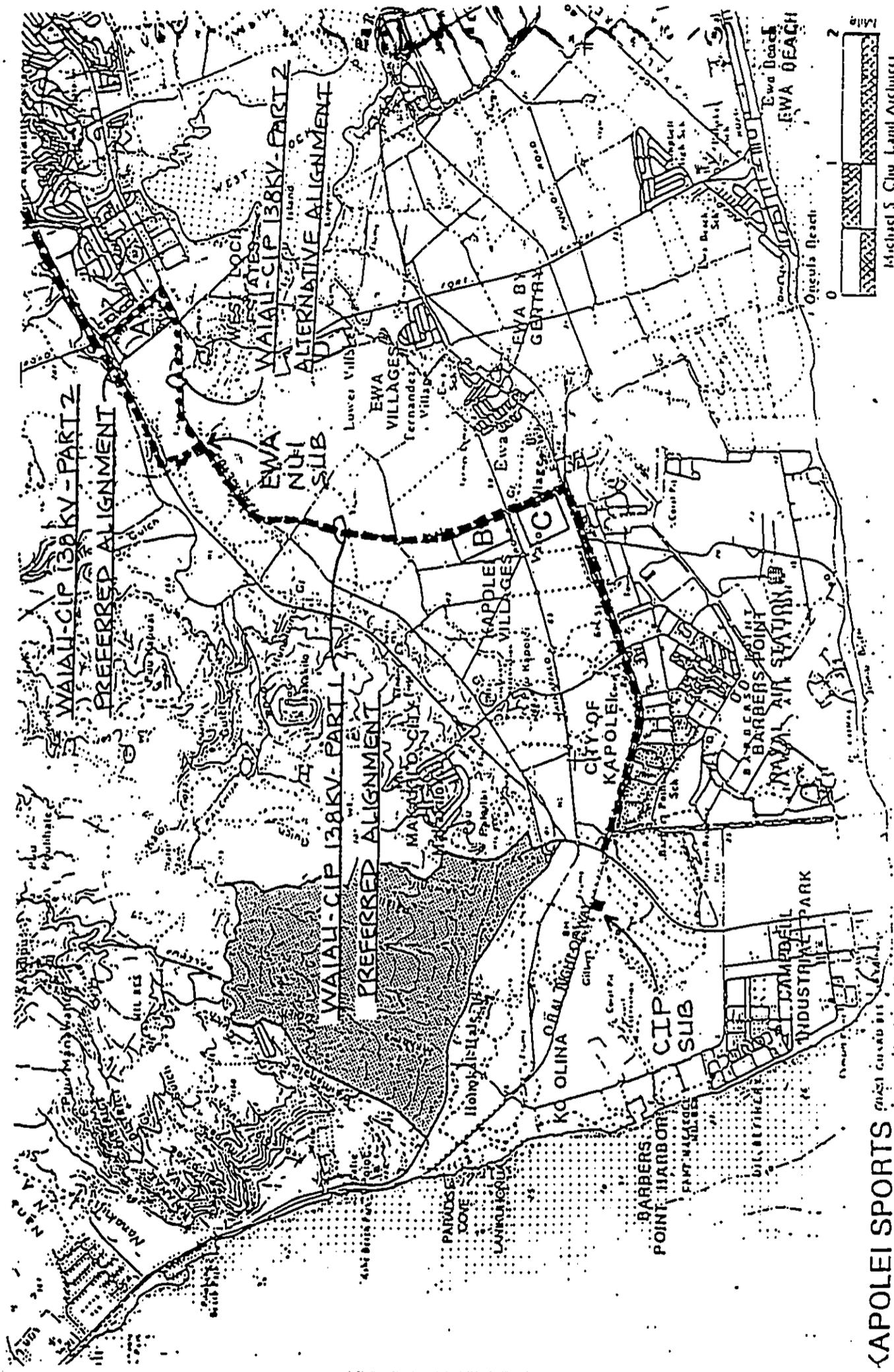
Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RM: jk



KAPOLEI SPORTS AND RECREATION CENTER PROJECT
 ALTERNATIVE SITES A, B, C, D

FIGURE 1A
LOCATION MAP

Michael S. Chiu, Land Architect



University of Hawaii at Manoa

RECEIVED
FEB 24 1992

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 956-7361

MITSUNAGA & ASSOCIATES, INC.

February 21, 1992
RE: 0598

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Governor Waihee:

Draft Environmental Impact Statement (DEIS)
Kapolei Sports and Recreation Center
Ewa, Oahu

The State of Hawaii Department of Accounting and General Services (DAGS) is proposing to build a sports and recreation center at Kapolei in Ewa, Oahu. Four possible sites are under consideration based on a feasibility study and preliminary alternate site analysis completed in June 1990. Each site is estimated to require approximately 75 acres of land that is predominantly agricultural, with residential areas planned and in progress.

Our review and comments were prepared with the assistance of Karl Kim, Urban and Regional Planning; Fred Creager, School of Architecture; Jon Matsuoka, School of Social Work; and Alex Buttarro; Environmental Center.

Agricultural Resources

This document does not appear to adequately address the potential impacts which may result from a permanent commitment to the removal of 75 acres of prime agricultural land. Although the potential for conflicts between continued agricultural use and urban plans for these areas were mentioned in brief, a more thorough discussion of the the present, long-term, and cumulative implications of these conflicts should be included in the Final EIS (FEIS). The FEIS should also include a description of how this particular project is anticipated to affect the conflict between present agricultural use and planned urban development. Additionally, the EIS should include a discussion of the social, cultural and economic implications stemming from the removal of prime agricultural land.

Transportation

Our reviewers note that the transportation analysis does not appear to address the expected future growth in the region. What is the basis for this limited analysis?

Socio-Economics

Although population and community characteristics were described in brief, our reviewers noted the EIS should more comprehensively discuss the potential impacts this sports center will have upon the Ewa District and adjacent communities. What primary, secondary, and cumulative socio-economic impacts are anticipated, and what is the basis for determining their significance?

This document should also provide a more thorough discussion of the specifics of community access. We note that other than the month the Japanese teams are expected to use the facility there is inadequate discussion of how, by whom, and when exactly the facility will be utilized by the general public and sport organizations the other 11 months of the year. Specific discussions regarding community use and accessibility should be fundamental components of this EIS because they are crucial to the evaluation of this project's potential impacts.

Public and State Comments

Did the preparers of this EIS receive any comments from the public or State agencies in response to the May 23, 1991 EIS Preparation Notice? If yes, what is the reason for their omission? Our reviewers noted a conspicuous lack of neighborhood, community, and City and County of Honolulu perspectives in the discussion of the project's impacts. We therefore suggest all such letters received regarding the DEIS be printed in the Final EIS (FEIS) to enable a more balanced presentation consisting of diverse perspectives.

Cumulative Impacts

How will this project along with the other Ewa developments cumulatively impact the lifeways of leeward Oahu and the Waianae Coast? What potential cumulative socio-cultural impacts is this project expected to have upon traditional community characters, housing and the changing resident demographics of leeward Oahu and the Waianae Coast?

Need for Recreational Facilities

The DEIS cited a lack of recreational facilities in West Oahu and in Ewa, and states, "a first class multi-purpose community-based facility assists in furthering the goals of multi-service social service programs related to children, teenagers, and young adults as well as senior citizens in the Ewa area" (section 4.6, page 44). Is this statement meant to imply this facility is "a first class multi-purpose community-based facility"? It seems much of the justification of the need for this project is based on a deficiency of recreational acreage to support sporting activities and the project's anticipated benefits to the public. Yet, the consensus of our

reviewing staff is that based on the DEIS's description of the proposed sports and recreation center and its potential environmental implications, this project does not appear to qualify as a "multi-purpose community-based facility," but might be better termed "a regional and international training facility for baseball players."

Because the language used in the above referenced statement and other similar statements throughout the document that may imply this sports center is a multi-purpose community-based facility appear unsubstantiated, they may be interpreted as a self-serving rationalizations of the project. According to Chapter 200 of Title 11 EIS Rules, "An EIS is meaningless without the conscientious application of the EIS process as a whole, and shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action" (Section 11-200-14).

Location

From the perspective of long-term planning, our review staff suggest that the consideration of the appropriate site selection for this sports complex should consider its relationship to such anticipated developments as a West Oahu campus for the university system. It seems appropriate to consider this sports center as a component of an extended campus.

Architecture

Our reviewers note that Figure 1 and 2 in Appendix B illustrating "Professional Baseball User" and "Public User" have limited value other for the purpose of developing an initial estimate of on-site facility construction cost, and should be limited to that purpose only. The symmetrical orientation of the playing fields will not allow optimization of sun and wind considerations for players and spectators on all fields. While some fields may be optimized for these considerations, the symmetry will cause others to oppositely experience worst case sun and wind conditions. We suggest that after a site has been chosen, the architects should incorporate sun and wind conderations into the final design of the structure.

Summary

The consensus of the Environmental Center reviewing staff is that this EIS document does not provide sufficient information to adequately address long-range planning and community recreational considerations germane to the assessment of the overall environmental consequences and implications of this proposed sports and recreation center.

Our reviewers expressed serious concern regarding the aforementioned deficiencies and therefore recommend that following the selection of a site, a Revised Supplemental EIS should be prepared due to the size, scope, potential impacts, and public expenditures involved in the development of this project.

Governor John Waihee
February 21, 1991
Page 4

Thank you for the opportunity to review this document and we hope you will find our comments helpful.

Sincerely,

John T. Harrison
John T. Harrison, Ph.D. *2/21*
Environmental Coordinator

cc: Ralph Yukumoto (DAGS)
Roy Iizaki, Mitsunaga & Associates, Inc.
Brian Choy, OEQC
Roger Fujioka
Fred Creager
Karl Kim
Jon Matsuoka
Alex Buttaro

JOHN WAIHEE
GOVERNOR



RUSSEL S. HAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

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

LETTER NO. (P)1620.2

JUL 1 1992

Dr. John T. Harrison
Environmental Coordinator
University of Hawaii at Manoa
Environmental Center
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Dr. Harrison:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environmental Impact Statement (DEIS) which were received on February 24, 1992. Your team of reviewers raised a number of issues, some of which were similar to those raised by other agencies, and addressed in preparation of the Final EIS (FEIS). Other issues raised by your group, as you acknowledged, can only be addressed once the permanent and final site is decided upon and the design phase begins.

1. In response to your concern about public and State comments, there were no formal written comments received in response to the May 23, 1991 EIS Preparation Notice. We did receive many comments through the interviews conducted by Mr. John Kawamoto during the consultation process in preparation of the DEIS. All of these comments were addressed including those concerns expressed by Ms. Jackie Miller of the Environmental Center on June 13, 1991 regarding lighting, etc.
2. Your comments on agriculture are addressed in the expansion of Section 1.6.5 and Appendix A. It should be noted that the removal of 75 acres of prime agricultural land was not a major concern of the groups we consulted with in preparation of the DEIS, including the Oahu Sugar Company, as long as either Sites B or C was the site selected. During on-site interviews with the OSCO leadership, they did not feel Sites B and C, as candidate sites, were as "prime" or "important" as Sites D or A in terms of

impact (to their program). Moreover, the area encompassing these sites were part of the condemnation process by the State in July 1991 for residential and other uses including public facility use (see attached map and news story).

3. With regard to transportation projections for future growth, which was also a concern of other respondents, it has been addressed in those sections related to transportation in the FEIS.
4. With regard to your comments on socioeconomics, the concerns which you have expressed are addressed in Sections 1.6.5., 3.11 and 6.0, and Appendix B which are revised in the FEIS where appropriate.
5. With regard to cumulative impacts, these concerns are addressed in the expansion of Sections 1.6.5, 3.11 and 6.0 in the FEIS as referred to in No. 4, above.
6. With regard to the need for recreational facilities, it should be pointed out that while the feasibility study of 1990 alluded to a training facility for baseball players as a prime purpose, this purpose was altered prior to the EIS phase to include an expanded public use. This was in response to interviews and consultations on the EIS Preparation Notice of May 23, 1991 and in the first phase of consultation with members of the Legislature, relevant public agencies (e.g. Recreation, etc.), developers (e.g. Campbell Estate, etc.), Neighborhood Boards, and other community board organizations who all expressed the dire need for recreational opportunities now and in the future, and advocated for the expansion of public uses of the facility. As such, it was a conscientious application of the EIS process as a whole and response to public concern and interest.
7. With regard to comments on location and the anticipated development of University of Hawaii's West Oahu Campus, this point is well-taken and is included in the FEIS.
8. With regard to comments on architecture, these are important considerations and will be addressed after a site has been chosen, and when the design phase of the project begins.

Dr. John T. Harrison
Page 3

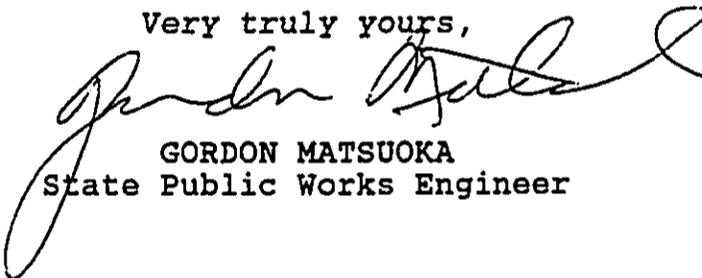
Ltr. No. (P)1620.2

9. The appropriateness of the suggestion in the summary of your review that a revised supplemental EIS be prepared, following the selection of the site, will need to be considered and approved by the Department of Accounting and General Services and other relevant public agencies. This would constitute another contract apart from the present one covering the FEIS involving the four alternate Sites A, B, C and D.

I would like to thank you and your team of reviewers for your comments and suggestions.

Your letter and our response will also be made part of the Comments Sections of the FEIS.

Very truly yours,



GORDON MATSUOKA
State Public Works Engineer

RM:jk
Attachments

State makes deal for Ewa sites

Will buy land for housing, feedlot and Raceway Park

By William Kresnak
and Jan TenBruggencate
Advertiser Staff Writers

The state has cut a \$110 million deal with the Campbell Estate to buy 1,283 acres in Ewa for future housing development and also to guarantee the continued operation of the Hawaii Meat Co. feedlot that was about to shut down, Gov. John Waihee announced yesterday.

The state also will take over the 59 acres occupied by Hawaii Raceway Park.

The purchase represents a major addition to the state's inventory of land in Ewa and further expands the potential of the planned "second city" as a major business and residential center for Oahu.

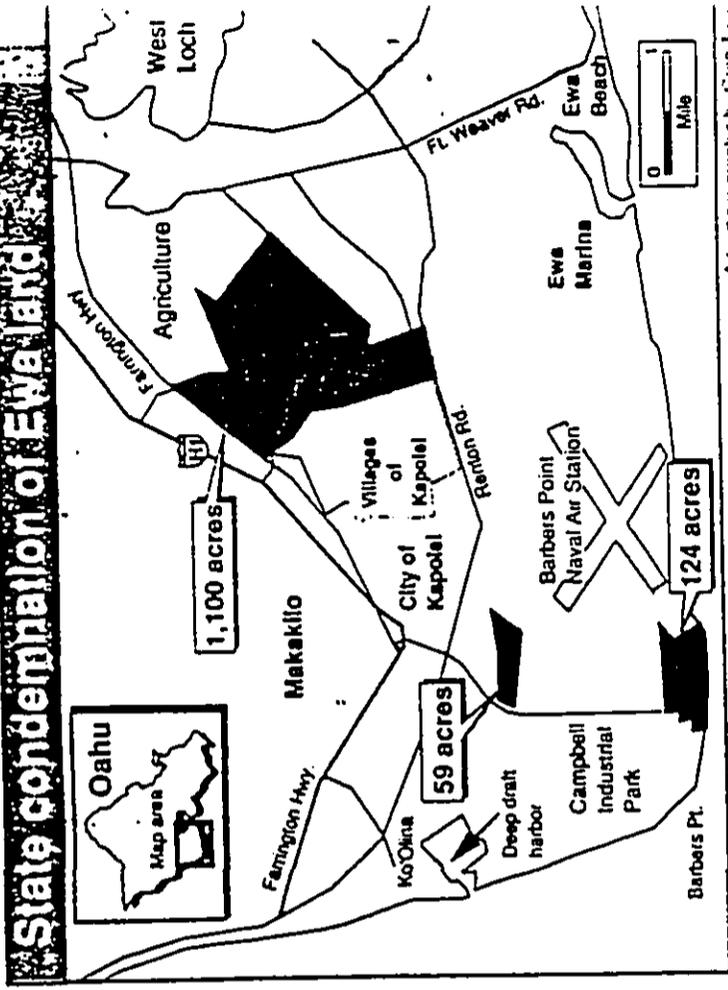
The deal, which still has some legal details to be worked out, involves three parcels:

- A parcel of 1,100 acres leased to Oahu Sugar Co. and currently under sugar cultivation. The land is east of the state's Kapolei Village housing development between Farrington Highway and the Barbers Point Naval Air Station. That land would be kept in sugar and land-banked for future housing development.

The Kapolei project is on former Campbell Estate land obtained earlier by the state.

- A parcel of 124 acres along the shoreline at Campbell Industrial Park currently leased by Hawaii Meat Co. and used as a cattle feedlot. Hawaii

See Land, Page A4



Advertiser graphic by Craig Tor

Flower shower

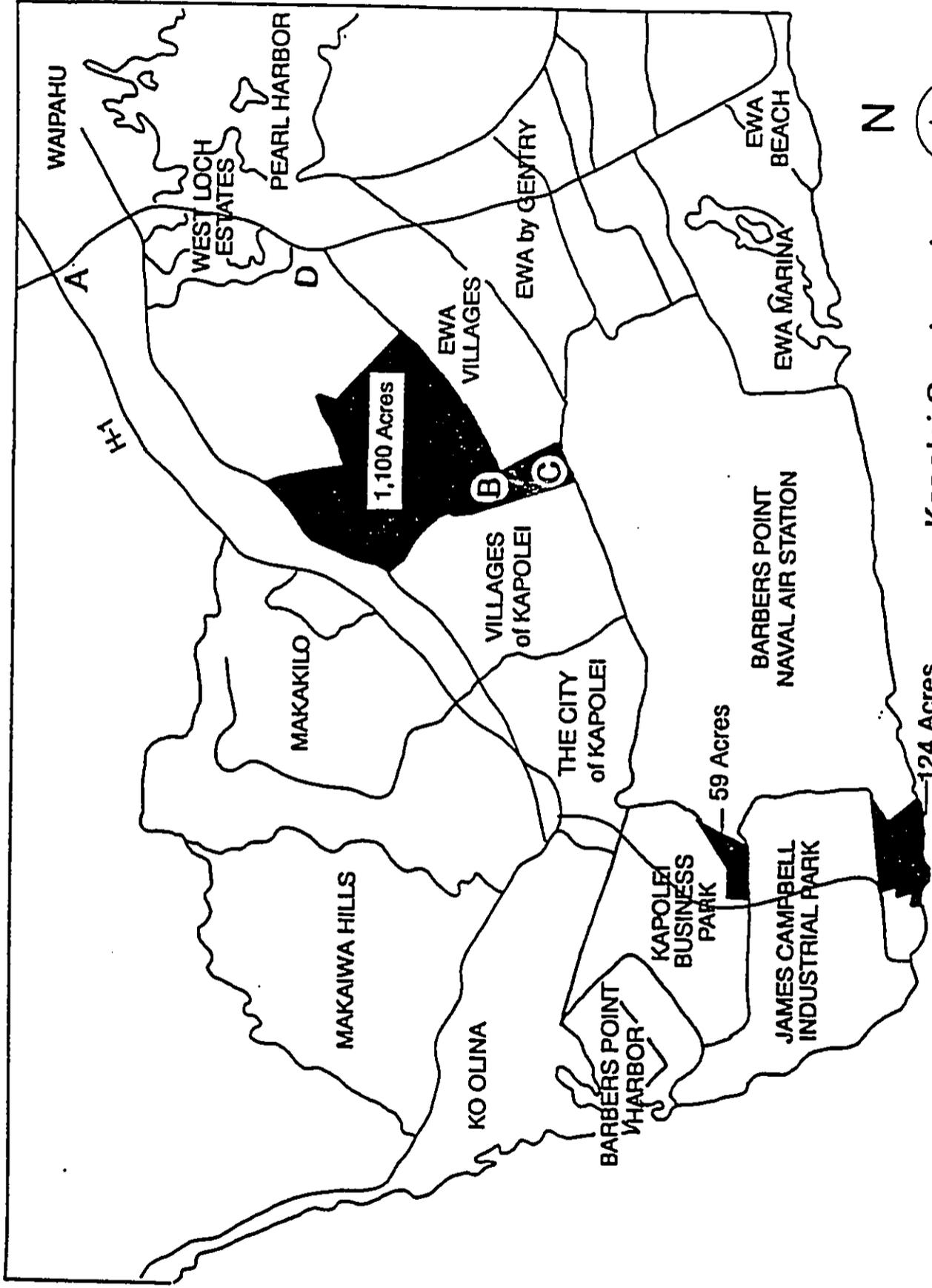


HECO finds trees probable blackout cause

Coincidence of two short-outs during line maintenance blamed

By Kit Smith

PHOTO BY KIT SMITH



Kapolei Sports and Recreation Center Project
 Ewa, Oahu
 State of Hawaii, DAGS

Figure 15A
 = State Condemnation of Ewa Land
 ALTERNATIVE SITES A, B, C, D



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

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813 PHONE: (808) 587-3800 FAX: (808) 587-3820

JOHN WAIHEE
Governor
MURRAY E. TOWILL
Director
BARBARA KIM STANTON
Deputy Director
RICK EGGED
Deputy Director
TAKESHI YOSHIHARA
Deputy Director

92:1015e

February 24, 1992

RECEIVED
MAR - 3 1992

MITSUNAGA & ASSOCIATES, INC.

The Honorable John Waihee
Governor, State of Hawaii
State Capitol
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS)
for Kapolei Sports and Recreation Center

Thank you for the opportunity to review the subject DEIS. The proposed project is a sports and recreation center at Kapolei in Ewa on Oahu. Four possible sites have been designated for this facility.

Draft Environmental Impact Statements (DEIS) should comply with the requirements found in State laws for evaluating any energy impacts that the project will have. The mandate for such an evaluation is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226, HRS ("Hawaii State Planning Act"). In particular, Chapter 226-18(a)(2) and (c)(3); 226-52(a) and (b)(2)(D); and 226-103(f)(1) and (2) should be considered.

We note that the DEIS omits any reference to Section 226-18 HRS and has given minimal attention to the State Energy Functional Plan. Therefore, we would like to request that the developer explain, in as much detail as possible, the project's energy impacts and the use of energy-efficient design/technologies that will be used to help meet its energy requirements. There are efficient energy-saving technologies which can be used in the facility's air conditioning, water heating, and lighting systems. High efficiency motors and chillers, a heat recovery system, and energy-saving metal halide and fluorescent lamps and ballasts are among the items we would like to have considered and specified in the EIS.

We would also like to bring to the developer's attention the possibility that the utilities will be implementing demand-side management (DSM) programs in the near future which may have a direct impact on the project.

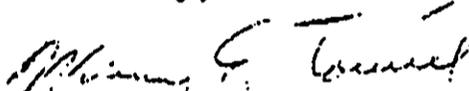
The Honorable John Waihee
Page 2
February 24, 1992

On page 2 of the Introduction and Summary, first paragraph, we would suggest adding that the Hawaii Winter League has expressed interest in signing a long-term lease for the facility.

In the second paragraph, we would omit the mention of the College World Series which we understand will not be leaving Omaha.

Thank you for the opportunity to comment on this worthwhile project.

Sincerely,


Murray E. Towill

MET/EU:do

cc: DEQC
Mr. Ralph Yukimoto
✓ Mr. Roy Iizaki
Mr. Gordon Sakamoto

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER

ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1619.2

JUL 1 1992

Honorable Murray Towill
Director
Department of Business,
Economic Development, and Tourism
State of Hawaii
Honolulu, Hawaii

Dear Mr. Towill:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the subject Draft Environmental Impact Statement (DEIS). All of your comments and suggestions have been addressed and/or incorporated into Sections 1.2, 1.6.7 and 4.3.2.3 of the Final EIS (FEIS).

More specifically:

1. Your comments with regard to energy impacts are reflected and addressed in Section 4.3.2.3 State Energy Plan.
2. Your comment with regard to the demand-side management (DSM) programs are reflected and addressed in Section 1.6.7 Utilities.
3. Your suggestion that we add the Hawaii Winter League to Section 1.2 Introduction and Summary has been done.

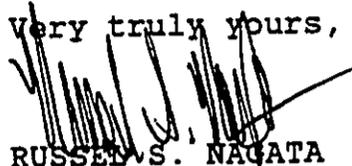
We should also note that your other comments regarding possible future energy impacts will be addressed in the design phase after a final site has been selected and as you suggest will be brought to the developer's attention.

Honorable Murray Towill
Page 2

Ltr. No. (P)1619.2

Your letter and our response will also be made part of
the Comments Section of the FEIS.

Very truly yours,



RUSSELL S. NAGATA
State Comptroller

RECEIVED
FEB 20 1992

MITSunaga & Associates, Inc.

TE-0081
PL92.1.012

February 18, 1992

The Honorable John Waihee
Governor, State of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Kapolei Sports and Recreation Center
Draft Environmental Impact Statement (DEIS)
TMK: 9-1-16: 25; 9-1-17: 4; 9-1-18: 1

This is in response to the DEIS submitted to us for review on January 8, 1992 by the Office of Environmental Quality Control.

Based on our review, we have the following comments:

1. All necessary roadway improvements should be completed prior to the opening of the facility at the chosen site.
2. The trip generation rates shown in Table 1 of the traffic analysis are inconsistent with the findings in the 1988 edition of Transportation and Land Development by the Institute of Transportation Engineers (attached) and should be adjusted accordingly.
3. The figures for the daily trips generated shown in Table 2 of the traffic analysis at the highest level of traffic created by the project should be verified and substantiated.
4. The traffic analysis in the DEIS was based on a project completion date in 1991. This study should be updated to reflect the current project schedule. A growth factor should be used to account for the future ambient traffic.

The Honorable John Waihee
Page 2
February 18, 1992

Should you have any questions, please contact Mike Oshiro of my staff at 527-5031.

Sincerely,



JOSEPH M. MAGALDI, JR.
Director

FEB 18 1992

Attachment

cc: Department of Accounting and General Services
Mitsunaga & Associates, Inc.

JOHN WAIHEE
GOVERNOR



RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

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

LETTER NO. (P)1836.2

P. O. BOX 119, HONOLULU, HAWAII 96810

SEP 29 1992

Mr. Joseph M. Magaldi, Jr.
Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

Dear Mr. Magaldi:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS. All of your comments have been reviewed and considered, and where possible and appropriate have been incorporated in Section 3.12.6 and Appendix F of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RY:jk

U.S. GOVERNMENT PRINTING OFFICE: 1975

WMA 92-2-16:25:1-17:4: 9-1-18:1

DEPARTMENT OF PUBLIC WORKS

CITY AND COUNTY OF HONOLULU

150 SOUTH KING STREET
HONOLULU, HAWAII 96813



RECEIVED
FEB 06 1992

MITUNAGA & ASSOCIATES, INC. January 28, 1992

The Honorable John Waihee
Governor
State of Hawaii
State Office Tower
35 South Beretania Street
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS)
Kapolei Sports and Recreation Center
TMA: 92-2-16:25:1-17:4: 9-1-18:1

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

- 1. Sewer adequacy is contingent upon the submittal of separate "Application for Sewer Connection" forms for each of the four proposed sites and subsequent approval by our Division of Wastewater Management.
- 2. At present, we would not issue any sewer connection approvals since the Honouliuli Wastewater Treatment Plant (WWTP) is approaching its design capacity of 25 mgd. However, we are currently re-evaluating the projected wastewater flow requirements of the WWTP. A more definite determination of sewer connection status will be possible after the re-evaluation is completed.
- 3. In view of the ongoing third party litigation against the City, we may have to halt all sewer connections once the average flow of the Honouliuli WWTP reaches 25 mgd. This would mean that not only no sewer connections will be issued but all previous approvals will be revoked regardless of when they were granted. Even if sewer connection approval for this project could be granted at some later time, it would have to be revoked if litigation requires that Honouliuli WWTP cannot exceed 25 mgd capacity. Depending upon the conditions imposed, sewer connections may be halted either until early 1993 when the expansion of the plant from 25 mgd to 36 mgd is completed or until the end of 1995 if secondary treatment is required.

The Honorable John Waihee
Page 2.
January 28, 1992

- 4. Please note that the current plans do not show any 20-inch sewer line on Farrington Highway adjacent to Alternate Site "A."
- 5. A drainage report should be submitted to our Drainage Section, Division of Engineering, for review and approval.

Very truly yours,

Sam Callego
SAM CALLEGO
Director and Chief Engineer

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1835.2

SEP 29 1992

Mr. C. Michael Street
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Street:

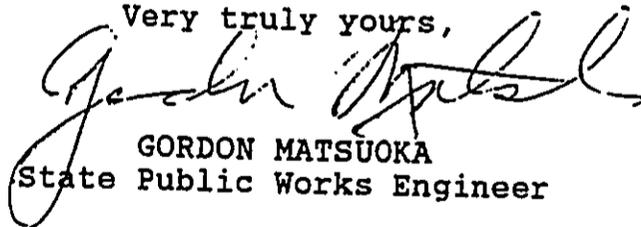
Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS regarding sewage and drainage. All of your comments have been addressed and are incorporated in Sections 1.6.8 and 3.12.4, and Appendix A (Alternate Site A) of the Final Environmental Impact Statement (FEIS).

I would also like to thank Mr. Kurashima for his assistance regarding the current plans for sewer lines along Farrington Highway.

Your letter and our response will also be made part of the Comments Section of the FEIS.

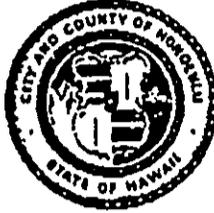
Very truly yours,


GORDON MATSUOKA
State Public Works Engineer

RY:jk

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
 HONOLULU, HAWAII 96813



FRANK F. FASI
 MAYOR

BENJAMIN B. LEE
 CHIEF PLANNING OFFICER

ROLAND O. LIBBY, JR.
 DEPUTY CHIEF PLANNING OFFICER

BS 1/92-58

February 27, 1992

The Honorable John D. Waihee, III
 Governor of Hawaii
 Office of the Governor
 Leiopapa A Kamehameha Building
 235 South Beretania Street
 Honolulu, Hawaii 96813

RECEIVED
 MAR - 3 1992

MITSUNAGA & ASSOCIATES, INC.

Dear Governor Waihee:

Comments on the Draft Environmental Impact
 Statement (DEIS) for the Kapolei Sports
 and Recreation Center, Ewa, Oahu

In response to the request for our review of the Draft
 Environmental Impact Statement (December 1991) for the subject
 project, we submit the following comments:

1. Section 4.0: Relationship to Land Use Plans and Policies;
 4.7, Ewa Development Plan:

This section incorrectly cites text from the City's outdated
 General Plan (not the Ewa Development Plan) that encouraged
 the development of a "secondary urban center in order to
 relieve development pressures in the urban-fringe and rural
 areas." The relevant section in the current amended General
 Plan (Resolution 88-404, CD-1, PD-1) states:

"Encourage 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" (Section
 on Population, Objective C, Policy 2 of the General
 Plan).

The Ewa Development Plan Special Provisions contains no
 related provisions. The Final EIS (FEIS) should contain
 accurate references to any text or provisions cited from
 either the City's General Plan or applicable Development

The Honorable John D. Waihee, III
Governor of Hawaii
February 27, 1992
Page 2

The section also states that the project "is consistent with the Plan objectives and design elements." The Ewa Development Plan identifies general areas of urban development and redevelopment including Makakilo, Ewa Plantation Villages, Ewa Beach, West Beach, Ewa Marina, Barbers Point and the City of Kapolei. Development outside of these areas would not be consistent with the Plan and would conflict with Development Plan Special Provisions for Ewa that state: "sufficient prime and other important agricultural lands are to be provided in Ewa in accordance with the general plan policy to encourage the continuation of sugar and pineapple as viable industries (Section 24-3.1)." The FEIS should address the issue of cumulative impacts caused by the removal of agricultural lands from sugar production, and the net impact on maintaining the viability of sugar operations in the Ewa region.

The Development Plan Special Provisions for Ewa do not specifically address design considerations for a sports complex. Therefore, an amendment to the Special Provisions may be needed to address the issue of height controls for the project. Based on the information we have at this time, we consider the project to be of a "Residential" nature which, according to Section 24-3.2(a)(3) Revised Ordinances of Honolulu 1990 (ROH), as amended, Ewa Development Plan Special Provisions, has a maximum height limit of 25 feet.

In addition to the possibility of a text amendment to the Special Provisions, the proposed project would require a Development Plan Public Facilities Map amendment to add a symbol for a site determined park which is to be funded within the next six years.

2. Appendix A: Preliminary Analysis of Alternative Sites - Evaluation Criteria; Alternative Site "B", Land Use/Compatibility, 3. Adjacent Land Uses, Planned:

This section should also discuss any potential conflict caused by the development of Site B with the City's proposed rapid transit system alignment in Ewa. Eventual development of Alternative Site B, and indeed selection of any site for this sports complex, should take into consideration accessibility to a rapid transit station in order to reduce traffic congestion and parking requirements.

The Honorable John D. Waihee, III
Governor of Hawaii
February 27, 1992
Page 3

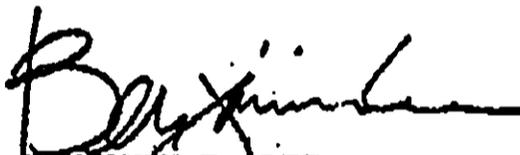
3. Section 5.0: Alternatives to the Proposed Action:

The DEIS, in Appendix A: Preliminary Analysis of Alternative Sites and Evaluation Criteria, states that the City is currently proposing (Alternative Site A) a 100-acre regional sports complex.

Historically, the type of "active" public recreational facilities being proposed for the State's sports complex (tennis courts, basketball courts, softball fields, etc.) have been developed and maintained by the City's Parks and Recreation Department. The City has had many years of experience in designing, constructing and maintaining this type of facility. We question the need for two regional sports facilities in the Ewa area over the next 20 years. We suggest that an alternative considered should be the possibility of a joint development between the City and State that would include: (1) the selection of a mutually agreed upon site; (2) a shared funding agreement scheme; (3) an agreed upon site plan; (4) a joint maintenance agreement; and (5) an agreement on whom will be responsible for conducting the public recreation programs for the complex.

Thank you for the opportunity to review and comment on the subject Draft Environmental Impact Statement. If there are any questions, please contact Brian Suzuki of my staff at 527-6051.

Sincerely,



BENJAMIN B. LEE
Chief Planning Officer

BBL:lh

cc: Office of Environmental Quality Control
Department of Accounting and General Services
✓ Mitsunaga & Associates, Inc.
Department of Parks and Recreation

JOHN WAIHEE
GOVERNOR



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

P. O. BOX 119, HONOLULU, HAWAII 96810

RUSSEL S. NAGATA
COMPTROLLER

ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1841.2

SEP 29 1992

Mr. Michael T. Lee
Acting Chief
Operations Division
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Lee:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center
(Reference File No. PO 92-099)

Thank you for your comments on the DEIS. All of your comments and suggestions have been incorporated in Section 3.3.2 and Appendix A (Alternate Site C) of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RY:jk

MUSSEL
ROBERT
LETTER NO. P.



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 114, HONOLULU, HAWAII 96819

SEP 29 1992

JOSEPH E. CONANT
EXECUTIVE DIRECTOR

IN REPLY REFER TO:
92:PPE/633jt

RECEIVED
FEB 2 1992



MITSUNAGA & ASSOCIATES, INC.
STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
SEVEN WATERFRONT PLAZA, SUITE 300
500 ALA MOANA BOULEVARD
HONOLULU, HAWAII 96813
FAX (808) 587-0600

February 20, 1992

TO: The Honorable John Waihee
Governor, State of Hawaii

FROM: *Joseph E. Conant*
Executive Director

SUBJECT: Draft EIS for the Kapolei Sports and Recreation Center

We have reviewed the subject DEIS and offer the following comments.

The HFDC will be assisting in the master planning of land adjacent to the Villages of Kapolei. The master planning area includes Alternate Sites B and C. Therefore, we would like to work closely with DAGS on the siting of the proposed sports and recreation center.

Thank you for the opportunity to comment.

cc: Ralph Yukumoto, DAGS
Roy Iizaki, Mitsunaga & Associates, Inc.

Mr. Joseph Conant
Executive Director
Housing Finance and Development Corporation
Seven Waterfront Plaza, Suite 300
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Mr. Conant:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for informing us that you will be assisting in the master planning of the land adjacent to the Villages of Kapolei which includes Alternate Sites B and C. Your comment are reflected in Section 4.10 of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

Gordon Matsuoaka
GORDON MATSUOKA
State Public Works Engineer

RY:jk

03/23/82 114E

884



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFER, HAWAII 96860-4416

OPERATIONS DIVISION
Operations Division

17 MAR 1982



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 118, HONOLULU, HAWAII 96810



MUSZEL
ROBERT
LETTER NO. (P)

SEP 29 1982

EGEVE
MAR 19 1982
MITSUNAGA & ASSOCIATES, INC.

Office of Environmental Quality Control
State of Hawaii
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Sir:

This responds to your request for comments on the Draft Environmental Impact Statement for the proposed Kapolei Sports and Recreation Center, Ewa, Oahu, Hawaii.

The document states that the four alternative sites for the center do not contain any perennial streams, ponds, or wetlands. However, the intermittent Kaloi Gulch passes through sites B and C. Any discharge of fill material into the gulch for the construction of drainage improvements would require a Department of the Army permit. When preliminary plans for these improvements are drawn up, they should be coordinated with the Corps Operations Division (Phone: 438-9258) to determine the type of permit that would be required. Please refer to File No. PO 92-099 in any contact or correspondence with us.

Sincerely,

Michael I. Lee
Michael I. Lee
Acting Chief, Operations Division

Copies Furnished:

Dept of Accounting and General Services, State of Hawaii, P.O. Box 119
Honolulu, HI 96810 ATTN: Mr. Ralph Yukumoto

Mitsunaga and Associates, Inc., 747 Amama St., Room 216,
Honolulu, HI 96814

Mr. Benjamin B. Lee
Chief Planning Officer
Department of General Planning
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Lee:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS. All of your comments and suggestions have been addressed and/or incorporated into Sections 1.6.5, 4.7 and 5.0, and Appendix A of the Final Environmental Impact Statement (FEIS).

Please also thank Mr. Brian Suzuki for his assistance in the follow up discussion on the potential of joint arrangements with regard to alternatives.

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

Gordon Matsuoaka
GORDON MATSUOKA
State Public Works Engineer

RY:jk

02/07/92

10:43

JOHN WAIHEE
GOVERNOR



ESTHER UEDA
EXECUTIVE OFFICER

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

RECEIVED
JAN 28 1992

WITSUNAGA & ASSOCIATES, INC.

January 24, 1992

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

Dear Mr. Choy:

Subject: Draft Environmental Impact Statement for the
Kapolei Sports and Recreation Center

The Department of Business, Economic Development and Tourism has referred the subject Draft Environmental Impact Statement (DEIS) to our office for response.

Based on our review of the DEIS, we find that all four of the Alternative Sites for the project, as approximately shown on the Vicinity Map (figure 2), are located in the State Land Use Agricultural District.

It also appears that the proposed project would require either a State Land Use Boundary Amendment to the Urban District, or a State Special Use Permit. Neither of these two approvals are listed as necessary in Section 2.6.1: Approvals Necessary.

We also find that Section 4.4: State Land Use Law, incorrectly states that the four Alternative Sites are located in the State Land Use Urban District. This information conflicts with the information provided in other sections of the document.

Figure 8, State Land Use Map appears to be inaccurate. We suggest that it be replaced with a map which correctly represents the current Land Use District Boundaries.

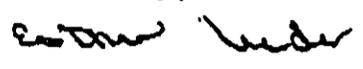
We also note that the exact tax map key numbers for each of the Alternative Sites are not clearly listed in the DEIS.

We have no other comments to offer at this time.

Mr. Brian Choy
January 24, 1992
Page 2

Thank you for the opportunity to comment on this matter.
If you have any questions, please call me or Steve Tagawa of my
staff at 587-3822.

Sincerely,



ESTHER UEDA
Executive Officer

EU:fl

cc: ✓ Roy Iizaki
DBED
DAGS

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1839.2

SEP 29 1992

Ms. Esther Ueda
Executive Director
Land Use Commission
Department of Business, Economic
Development and Tourism
State of Hawaii
Honolulu, Hawaii

Dear Ms. Ueda:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS regarding the Vicinity Map (Figure 2), Approvals Necessary Section 2.6.1, consistency of Section 4.4 with other sections, clear listing of tax map key numbers for each site in Section 2.2.1, and replacement of Land Use Map (Figure 8) and Vicinity Map (Figure 2).

In accordance with your comments, we have made all necessary revisions and have incorporated them into the Final Environmental Impact Statement (FEIS).

Please also thank Mr. Steve Tagawa for his assistance in representing the current Land Use District Boundaries relevant to the four alternative sites.

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RY:jk

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR



RECEIVED
FEB 17 1992

WALTER M. OZAWA
DIRECTOR

ALVIN K.C. AU
DEPUTY DIRECTOR

mitsunaga & associates, inc.

February 12, 1992

The Honorable John Waihee
Governor
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS) for
Kapolei Sports and Recreation Center

Thank you for allowing us to review the DEIS on the proposed
State Sports and Recreation Center.

The Department of Parks and Recreation, City and County of
Honolulu, completed a similar needs-study called the
"Honolulu Youth Sports Facility" in August 1989 which
proposes support for a consolidated sports center in the Ewa
area with a wide range of sports facilities.

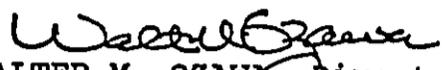
We are forwarding a copy of this document with a view that a
slightly broader spectrum of recreational activities could be
considered for the Kapolei Sports and Recreation Center. Our
study proposes a youth park facility of approximately 100
acres versus the Kapolei concept of about 71 acres. The
additional space could conceivably be designed to satisfy
both the requirements of professional sports practice as well
as those of amateur competition.

A jointly planned facility which would serve the general
public could expect to enjoy wider public support.

The Honorable John Waihee
Page 2
January 12, 1992

You or your staff can contact me at 527-6343 for a meeting to discuss this proposal in more depth.

Sincerely,


WALTER M. OZAWA, Director

WMO:ei

Attachment

cc: Office of Environmental Quality Control
Dept. of Accounting & General Services (Ralph Yukumoto)
✓ Mitsunaga & Associates, Inc. (Roy Iizaki)

Table 3-2 (continued) TRANSPORTATION AND LAND DEVELOPMENT ITE 1988

| LAND USE GENERATOR DESCRIPTION & ITE CODE | VEHICLE TRIPS PER DAY TO & FROM LAND USE (Rate/Unit as noted) | | | | | | | | | | VEHICLE TRIP RATES IN PEAK HOUR | | | | | | | | | | | |
|---|---|-------------------|-------------------|---------------------|-------------------|------------------|------|------|------|-------------------|---------------------------------|------|-------|------|------|-------|-------|-------|-------|------|-----------------|-----------------|
| | STATISTICS | | | | | STATISTICS | | | | | AM | | | | | PM | | | | | | |
| | UNITS | MEAN | MIN | MAX | STD DEV. OF MEAN* | UNITS | MEAN | MIN | MAX | STD DEV. OF MEAN* | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| RECREATION (400) | | | | | | | | | | | | | | | | | | | | | | |
| Parks 410 | PRKSPC EMP ACRE | 7.81 96.17 30.37 | 2.93 42.35 2.99 | 24.28 183.62 214.55 | 6.74 59.56 62.22 | 2.25 29.78 16.07 | 9 | | | | | | | | | | | | | | | |
| City Parks 411 | PRKSPC EMP ACRE | 6.50 51.10 3.66 | 1.91 47.06 1.04 | 12.55 66.67 129.83 | 5.51 9.97 55.36 | 3.18 5.76 24.76 | 3 | | | 0.43 | | | 2.32 | | 2.43 | 0.60 | | 3.21 | 3.37 | | | 1.00 5.37 5.63 |
| County Parks 412 | PRKSPC EMP ACRE | 2.18 26.46 5.09 | 0.42 23.33 0.17 | 21.00 183.33 81.24 | 5.58 50.32 21.12 | 1.61 13.96 5.12 | 12 | | | | | | | | | 0.22 | | 2.17 | 7.50 | | | |
| Slate Parks 413 | PRKSPC EMP ACRE | 1.15 60.20 0.69 | 0.40 21.93 0.05 | 3.13 183.33 16.67 | 0.97 67.14 6.51 | 0.34 20.24 1.81 | 8 | | | | 2.35 | | 0.64 | | | | | 4.60 | 0.06 | | | 5.45 1.49 |
| Marinas 420 | BOSBER EMP ACRE | 2.96 251.47 20.92 | 1.91 231.50 10.32 | 10.04 276.67 75.45 | 2.33 24.13 32.64 | 0.70 12.06 18.84 | 11 | | | 0.09 | | | 9.75 | | | 0.17 | | 18.00 | | | | 0.20 31.75 |
| Golf Course 430 | PRKSPC EMP ACRE | 5.32 20.63 6.91 | 1.75 10.90 2.33 | 16.39 75.00 22.78 | 3.47 18.27 4.42 | 0.87 5.07 0.94 | 16 | 0.22 | 0.06 | 0.28 | 0.13 | 0.20 | 0.33 | | | | | | | | | |
| INSTITUTIONS (500) | | | | | | | | | | | | | | | | | | | | | | |
| Military Base 501 | DEFEMP CIVEMP | 1.80 2.20 7.10 | | | NA NA NA | | | | | | | | | | | | | | | | | |
| Day Care Cen 511 (Suburban) | STDNT 1K SF EMP | 4.98 79.14 33.20 | 4.10 57.20 25.60 | 7.10 125.10 50.40 | 1.22 26.40 12.73 | 0.55 11.81 5.70 | 5 | 0.53 | 6.47 | 14.85 | 6.94 | 7.45 | 14.40 | 9.36 | 7.32 | 0.91 | 14.40 | 6.04 | 3.93 | 3.07 | 0.46 | 1.05 15.68 6.60 |
| Elem School 520 | STDNT EMP ACRE | 1.02 13.10 33.69 | 0.45 4.47 3.72 | 1.82 26.37 123.80 | 0.35 5.28 28.41 | 0.06 0.84 4.49 | 40 | 0.12 | 1.08 | 6.24 | | | 1.60 | | | 0.03 | 0.28 | 1.50 | 5.96 | 2.75 | 0.19 3.39 8.71 | |
| High School 530 | STDNT EMP ACRE | 1.38 16.79 23.81 | 0.71 4.28 1.02 | 2.49 32.87 103.20 | 0.52 6.52 26.71 | 0.10 1.26 5.97 | 27 | 0.23 | 0.64 | 2.61 | 0.07 | 1.13 | 0.21 | 0.83 | 3.38 | 0.23 | 0.55 | 8.70 | 8.70 | 3.09 | 0.33 3.58 11.79 | |
| Jr Comm Coll 540 | STDNT EMP ACRE | 1.58 10.06 11.90 | 0.94 NA NA | 27.52 NA NA | 5.65 NA NA | 1.23 NA NA | 21 | 0.16 | 0.02 | 0.18 | 0.05 | 0.07 | 0.12 | 0.16 | 0.02 | 0.18 | 0.16 | 0.12 | 0.16 | 0.02 | 0.18 1.73 2.04 | |

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1837.2

SEP 29 1992

Mr. Walter M. Ozawa
Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street, 10th Floor
Honolulu, Hawaii 96813

Dear Mr. Ozawa:

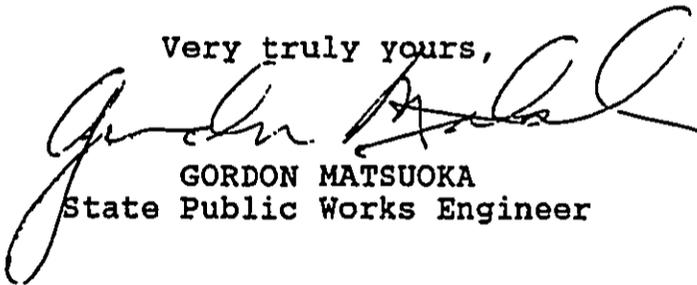
Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS. Also thank you for the copy of the Honolulu Youth Sports Facilities study. We already had one copy and reviewed it prior to preparation of the DEIS.

Your comments regarding a jointly planned facility have been incorporated in Section 5.0 of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,



GORDON MATSUOKA
State Public Works Engineer

RY:jk

CITY AND COUNTY OF HONOLULU

FIRE DEPARTMENT

1485 SOUTH BERETANIA STREET, ROOM 305
HONOLULU, HAWAII 96814



LIONEL E. CAMARA
FIRE CHIEF
DONALD S. M. CHANG
DEPUTY FIRE CHIEF

RECEIVED
FEB 07 1992

February 5, 1992

MITSUMAGA & ASSOCIATES, INC.

The Honorable John Waihee, Governor
State of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Sir:

We have reviewed the subject material provided and request the following information be inserted:

Page 34, Section . 3.13.2, 2nd paragraph

The Campbell Industrial Park Fire Station is scheduled to begin construction in late 1992.

Ewa Tenny Village Fire Station is listed as beyond six years and the relocation of the Ewa Beach Fire Station to the entrance of the Ewa Marine Project is not scheduled until 1995.

Should you have any questions, please call Acting Assistant Chief Attilio Leonard of our Administrative Services Bureau at 943-3838.

Very truly yours,

Lionel E. Camara
LIONEL E. CAMARA
Fire Chief

KL:lm

c: Dept. of Accounting & General Services - State of HI
(Attention: Ralph Yukimoto)
Mitsunaga & Associates, Inc.
(Attention: Roy Iizaki)



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

P. O. BOX 115, HONOLULU, HAWAII 96810

LETTER NO. (P)1

RUSSELL S. H.
COMMISSIONER
ROBERT P. LA
ADMINISTRATOR

SEP 29 1992

Mr. Lionel E. Camara
Fire Chief
Fire Department
City and County of Honolulu
1455 South Beretania Street, Rm. 305
Honolulu, Hawaii 96814

Dear Mr. Camara:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS regarding fire protection. Your comments have been inserted as requested in Section 3.13.2 of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

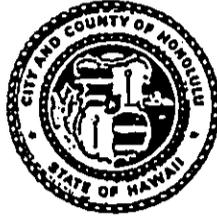
Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RY:jk

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU HAWAII 96814 - AREA CODE: (808) 843-3111

FRANK F. FASI
MAYOR



MICHAEL S. NAKAMURA
CHIEF

HAROLD M. KAWASAKI
DEPUTY CHIEF

OUR REFERENCE KN-LK

February 10, 1992

The Honorable John Waihee
Governor of Hawaii
Hawaii State Capitol
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: KAPOLEI SPORTS AND RECREATIONAL CENTER

We have reviewed the materials for the proposed development and would like to offer the following comments.

A major concern of our department is how the anticipated increase in population will affect traffic conditions in the area. We are in support of measures, such as those proposed in the Traffic Analysis for alternatives A, B, C, and D, that will minimize the effects of increased traffic.

Also, the collective result of the proposed Sports and Recreation Center and other developments that will make up the "second city" in Ewa will definitely increase the demand for police services provided by the Pearl City District.

Our ability to adequately meet the greater demand will depend primarily on the availability of funds for sufficient police personnel, equipment, and facilities: another district and two substations.

Governor John Waihee

-2-

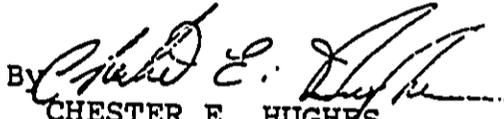
February 10, 1992

The increase in facilities and workforce is essential to our efforts to proactively prepare for the needs of the growing community: more beats, more patrol units, effective traffic management within and to/from Ewa, and the necessary support staff.

Thank you for the opportunity to comment.

Sincerely,

MICHAEL S. NAKAMURA
Chief of Police

BY 
CHESTER E. HUGHES
Assistant Chief of Police
Support Services Bureau

cc: Mr. Ralph Yukumoto
Mr. Roy Iizaki
OEQC

JOHN WAIHEE
GOVERNOR



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

RUSSEL S. NAGATA
COMPTROLLER
ROBERT P. TAKUSHI
DEPUTY COMPTROLLER

LETTER NO. (P)1833.2

SEP 29 1992

Mr. Chester E. Hughes
Assistant Chief of Police
Support Services Bureau
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Hughes:

Subject: Draft Environmental Impact Statement (DEIS)
for The Kapolei Sports and Recreation Center

Thank you for your comments on the DEIS regarding police protection. All of your comments have been included in Section 3.13.1 of the Final Environmental Impact Statement (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

A handwritten signature in black ink, appearing to read "Gordon Matsuoka".

GORDON MATSUOKA
State Public Works Engineer

RY:jk

US/ECON DEV-TOURISM :10-12-92 : 2:18PM :BUS/ECON DEV-TOURISM
Office of Agriculture

UNITED STATES
DEPARTMENT OF
AGRICULTURE
SOIL
CONSERVATION
SERVICE
P. O. BOX 50004
HONOLULU, HAWAII
96850



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS
P. O. BOX 111, HONOLULU, HAWAII 96810
LETTER NO. (P)1878

JANUARY 31, 1992

RECEIVED

92 FEB -4 P1:26

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

The Honorable John Waihee
Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Governor Waihee:

Subject: Draft Environmental Impact Statement (DEIS)-
Kapolei Sports and Recreational Center, Ewa, Oahu

We have reviewed the DEIS for the Kapolei Sports and Recreational Center and would like to offer the following comments:

The Soil Conservation Service believes that the State of Hawaii should avoid the loss of Prime Agricultural Land whenever possible. We feel it is unfortunate that all four sites indicated in this DEIS are located on Prime Agricultural Land. Because selection of any site will involve the loss of productive agricultural land, we would like to express our support for the selection of site B or C. We cannot support site A because it is part of the core of Oahu Sugar Company and represents a cornerstone of plantation operations. We cannot support site D because it contains irrigation wells that are vital to the plantation's viability.

Thank you for the opportunity to comment on this document.

Sincerely,

Warren M. Lee
WARREN M. LEE
State Conservationist

Mr. Warren M. Lee
State Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 50004
Honolulu, Hawaii 96850

Dear Mr. Lee:

Subject: DEIS for the Kapolei Sports
and Recreation Center

Thank you for your comments on the Draft Environmental Impact Statement (DEIS) regarding agricultural resources and your support for the selection of proposed Site B or C. All of your comments and concerns are addressed in Section 1.6.5 and 4.10 of the Final EIS (FEIS).

Your letter and our response will also be made part of the Comments Section of the FEIS.

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RY:jk