DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
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JEREMY HARRIS
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DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

November 2, 2001

2001/ELOG-4330

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

APPLICATION FOR DEVELOPMENT PLAN LAND USE AMENDMENT
AND ZONE CHANGE
ENVIRONMENTAL ASSESSMENT (EA) DETERMINATION
FINDING OF NO SIGNIFICANT IMPACT

Recorded Owner	:	Lani Properties
Applicant	:	Lani Properties
Agent	:	Group 70 International, Inc.
Land Owner	:	RCJ Corporation
Location	:	Near the intersection of Kamehameha Highway and Kohomua Street
Tax Map Key	:	9-9-03:068
Request	:	Development Plan Land Use Amendment and Zone Change
Proposal	:	Build a retail center composed for a convenience store and takeout restaurant and related facilities.
Determination	:	A Finding of No Significant Impact is Issued

Attached and incorporated by reference is the Final EA prepared by the applicant for the project. Based on the significance criteria outlined in Title 11, Chapter 200, Hawaii Administrative Rules, we have determined that preparation of an Environmental Impact Statement is not required.

We have enclosed a completed OEQC Bulletin Publication Form and four copies of the Final EA. If you have any questions, please contact Robert Reed of our staff at 523-4402.

Sincerely yours,

RANDALL K. FUJIKI, AIA
Director of Planning and Permitting

RKF:rr
124861 rev 1

Enclosures

cc: Group 70 International

2001-11-23-OA-FEA-

Final Environmental Assessment

Application for Development Plan Land Use Amendment and

Zone Change

Lani Properties

(Aloha Market)

TMK (1) 9-9-03:68
Halawa, 'Aiea, Island of O'ahu

Applicant:

Lani Properties
50 South Beretania Street C-203
Honolulu, Hawaii 96813

Prepared By:

Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
Honolulu, HI

September 2001

Final Environmental Assessment

Application for Development Plan Land Use Amendment and

Zone Change

Lani Properties

Aloha Market

TMK: (1) 9-9-03:68
Halawa, 'Aiea, Island of O'ahu

This environmental document is prepared in accordance with the requirements of Chapter 343, HRS and Hawai'i Administrative Rules, Title 11, Department of Health.

Applicant:
Lani Properties
50 South Beretania Street C-203
Honolulu, Hawaii 96813

Accepting Authority:
Department of Planning and Permitting
City and County of Honolulu

Responsible Official: _____ _____
Date

Prepared By:
Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
925 Bethel Street, 5th Floor
Honolulu, HI 96813
808-523-5866

September 2001

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LIST OF FIGURES

Section 1.0
Applicant Information

1.0 APPLICATION INFORMATION

Project Name:	Lani Properties: Halawa Site
Authorized Agent:	Group 70 International, Inc. 925 Bethel Street, 5th Floor Honolulu, HI 96813 Contact: George Atta, AICP Telephone: 523-5866 extension 103
Applicant:	Lani Properties 50 South Beretania Street C-203 Honolulu, Hawai'i 96813 Contact Person: Warren Ho Telephone: (808) 521-0081, Fax: 533-3887
Land Owner:	RCJ Corporation 50 South Beretania Street C-203 Honolulu, Hawai'i 96813
Location:	Near the intersection of Kamehameha Highway and Kohomua Street Near Aloha Stadium and Pu'uwai Momi Housing 'Aiea, O'ahu, Hawai'i 96701
Address:	Not available
Tax Map Key:	9-9-03:068
Land Area:	32,181 sq. ft or .7 acres
Required Maps:	Figure 1-1 Location Map Figure 1-2 Tax Map Key
Summary:	The project proposes to build a retail center with a convenience store and takeout restaurant which will serve nearby residents and tourists in the area. The project also includes a parking lot and space for a police workstation as well as road and traffic improvements beneficial to nearby residents.

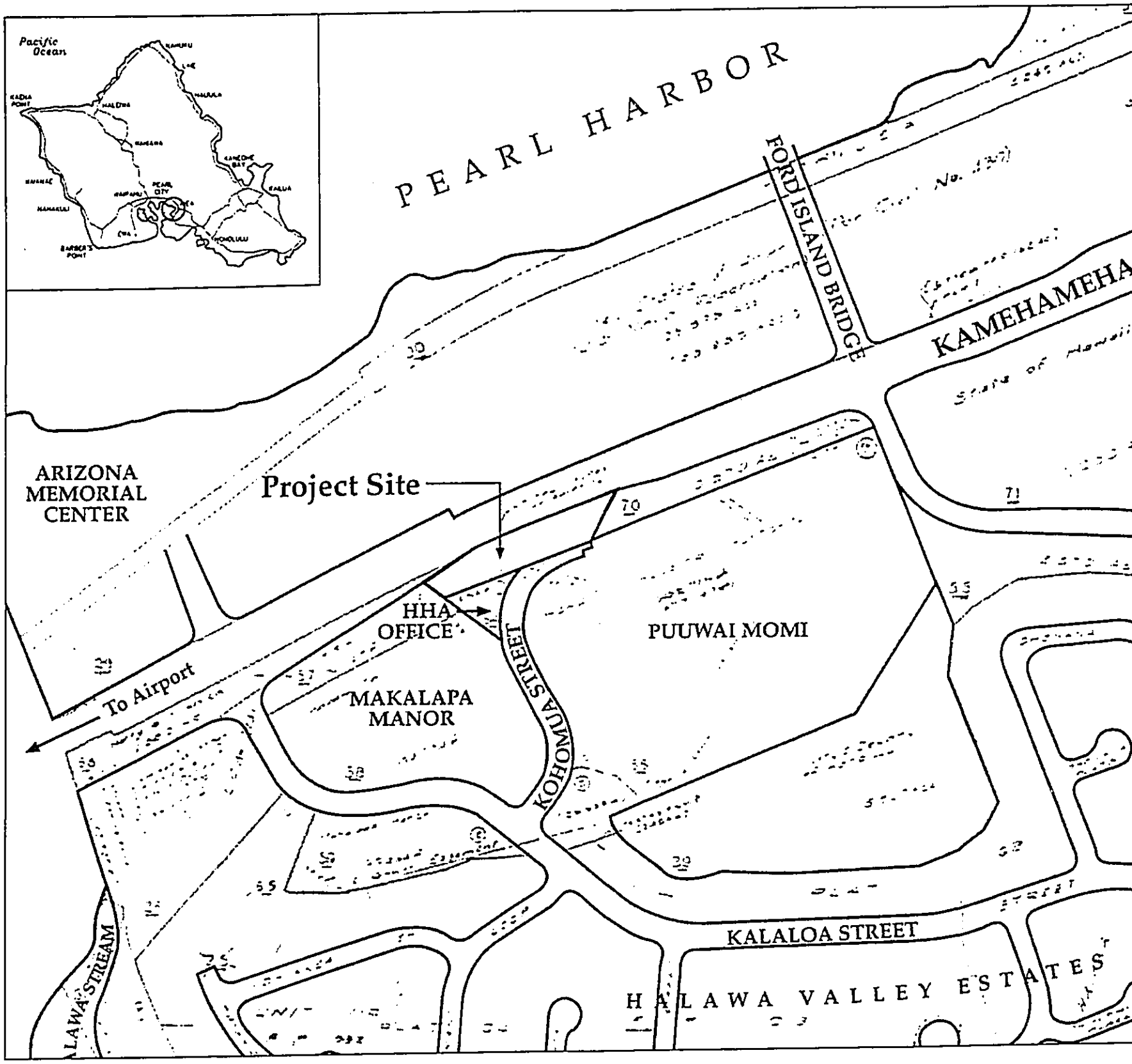

Figure 1-1 Location Map

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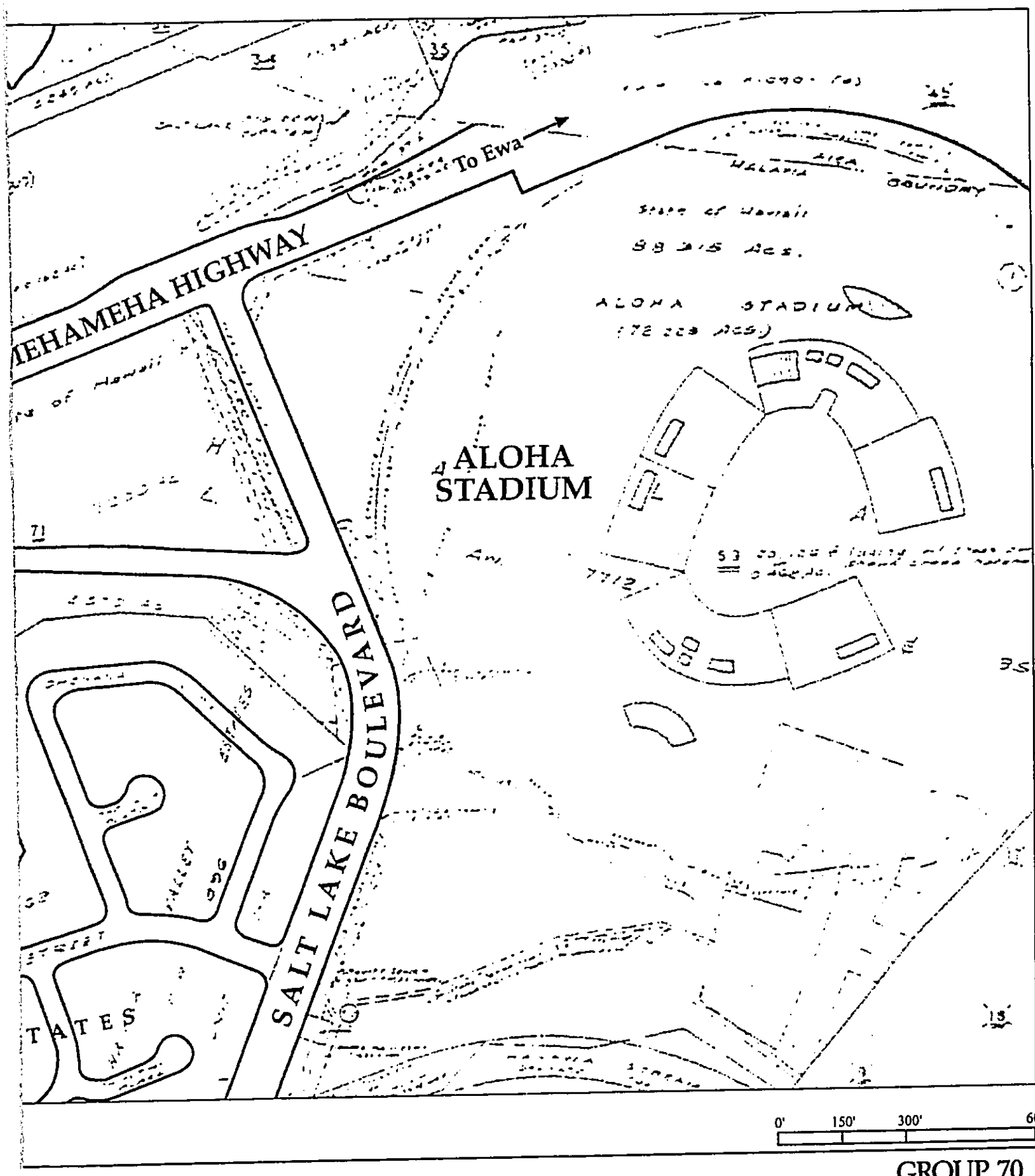

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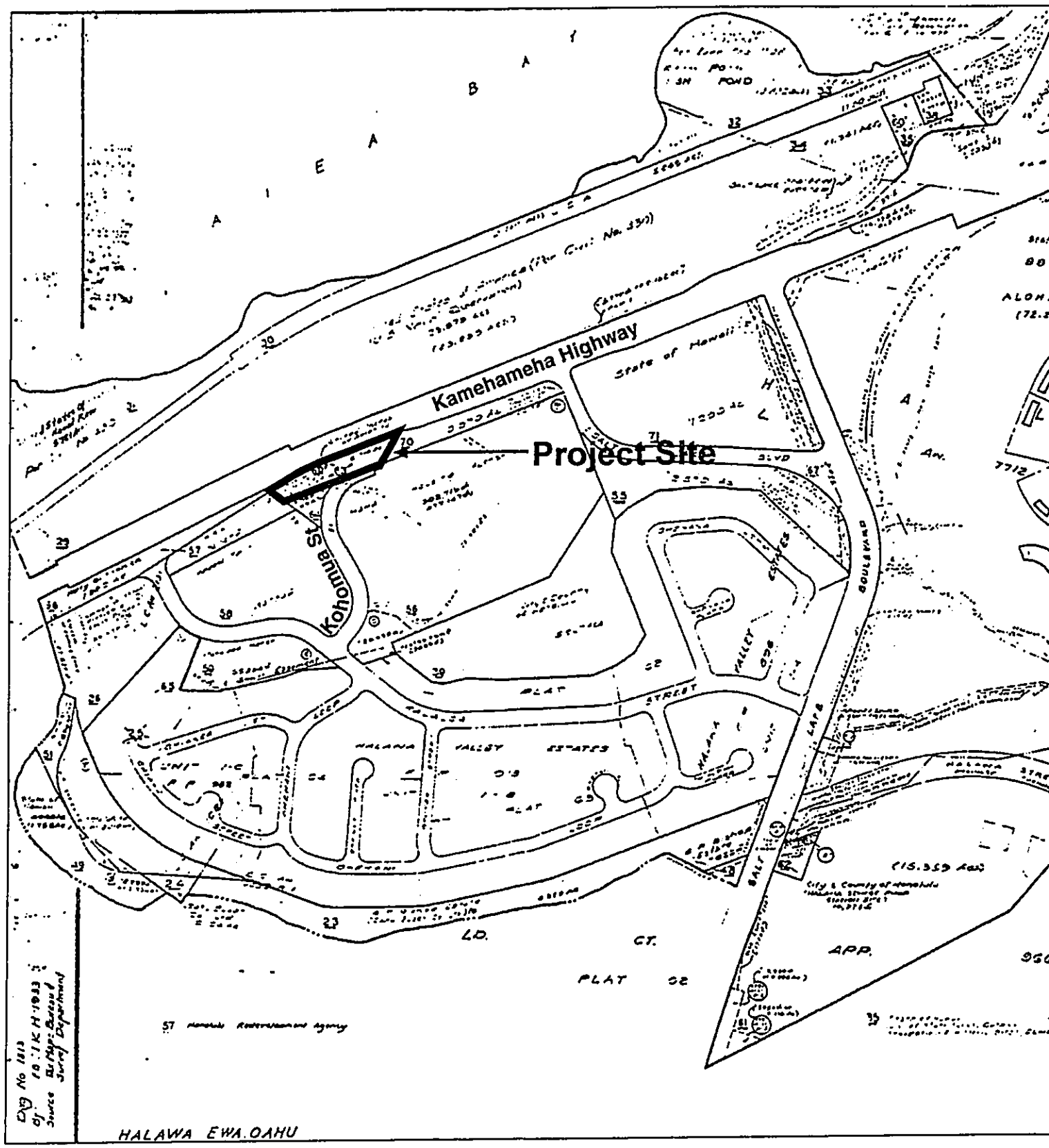

Figure 1-2 Tax Map Key: 9-9-03: 68

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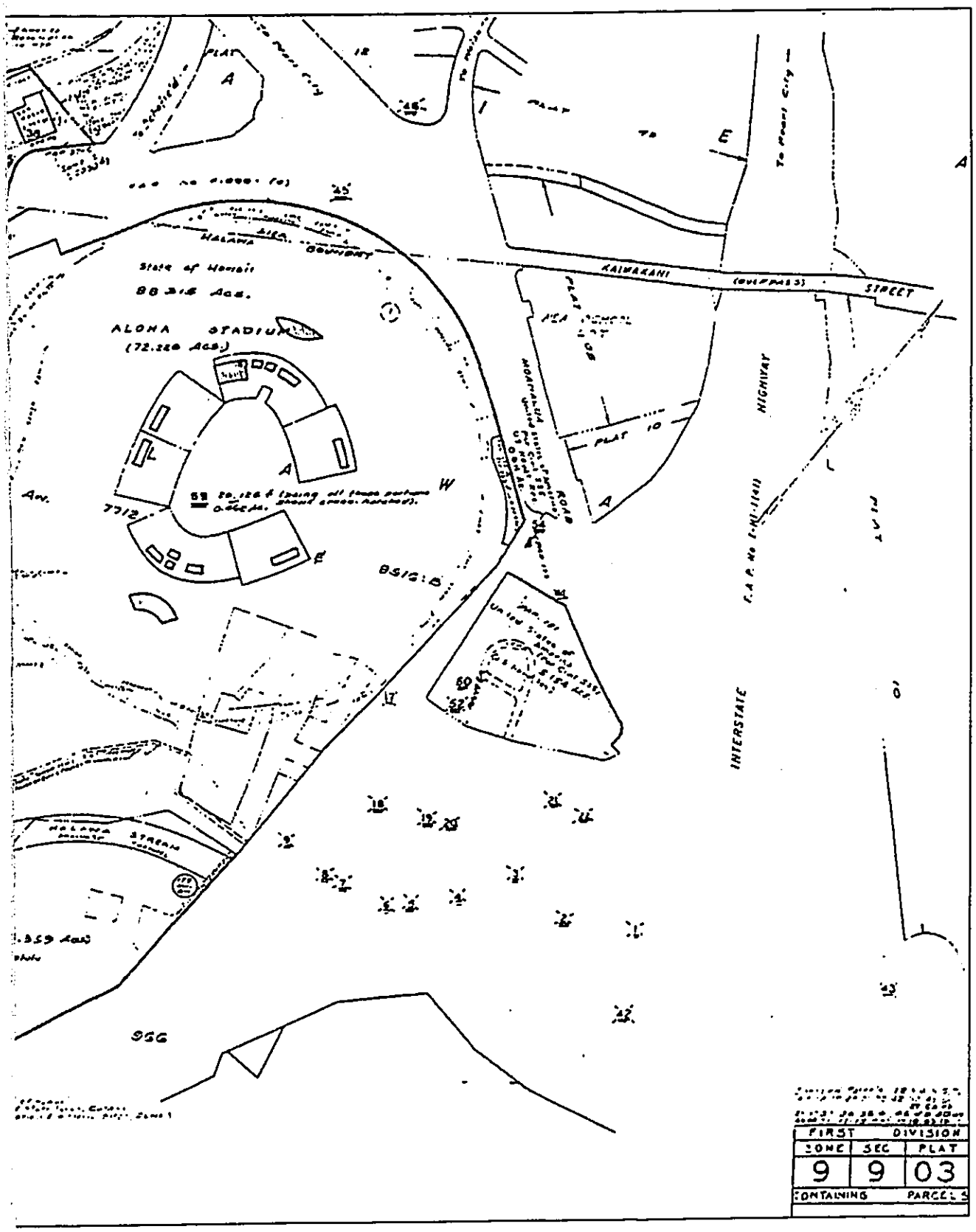

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Section 2.0
Land Use Information

2.0 LAND USE INFORMATION

State Land Use District:	Urban
Development Plan Land Use Map:	Primary Urban Center, Residential
DP Public Facilities Map:	Not Applicable
Existing Zoning (LUO):	R-5 Residential District
Request:	Change Zoning from R-5 to B-2 for the purpose of developing a three-story commercial center for convenience retail operation. Amend Primary Urban Center Development Plan Land Use Map.
Required Maps:	Figure 2-1 State Land Uses Figure 2-2 Primary Urban Center Development Plan Land Use: Residential Figure 2-3 Existing Zoning: R-5 Figure 2-4 Special Management Area Map
Permits Required:	Primary Urban Center Development Plan Land Use Amendment Zone Change Construction Permits
Summary:	The project proposes to build a retail center with a convenience store and takeout market which will serve nearby residents, people en route to Aloha Stadium, and tourists in the area. The project also includes a parking lot and space for a police work station as well as road and traffic improvements beneficial to nearby residents.

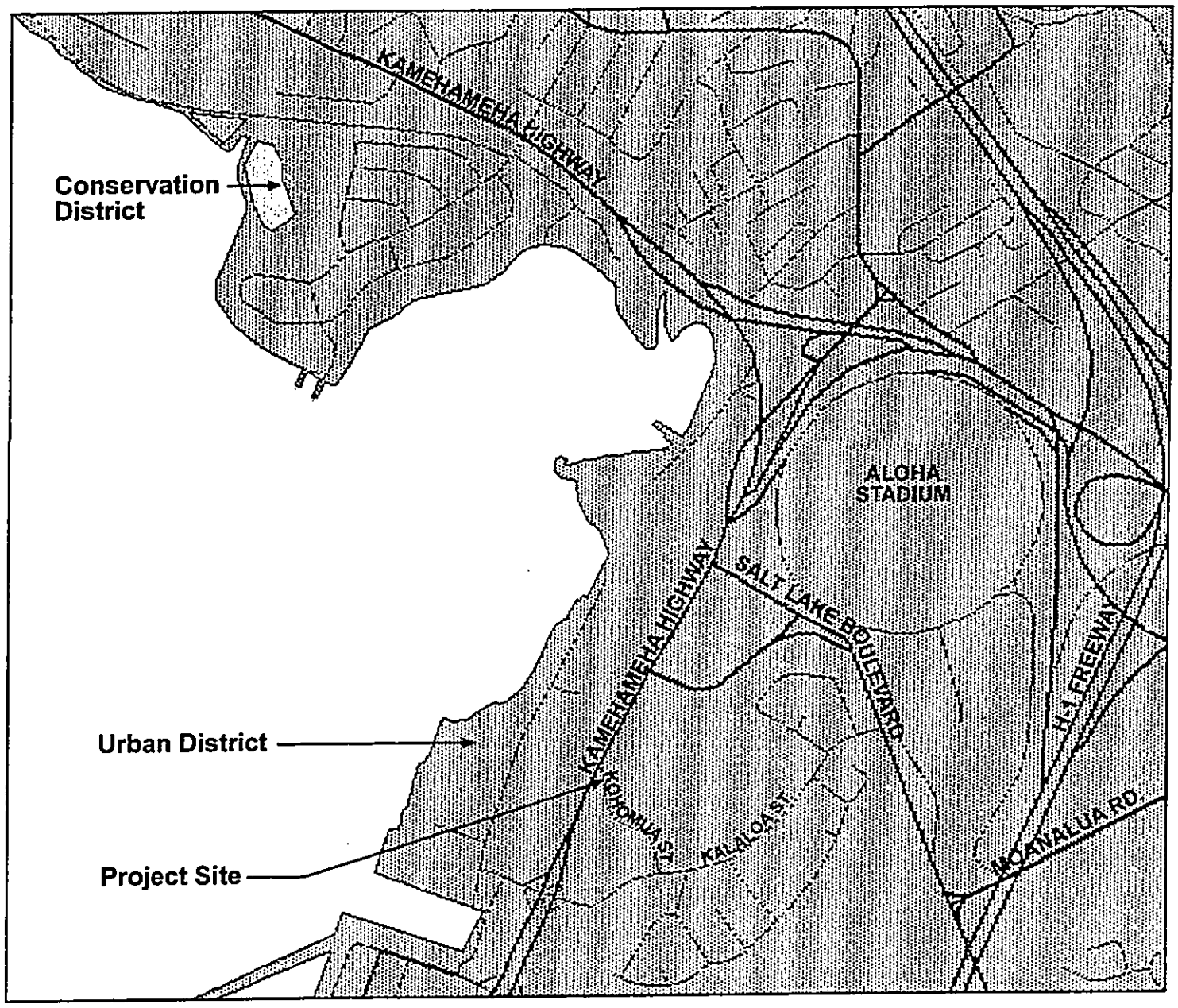

Figure 2-1 State Land Uses

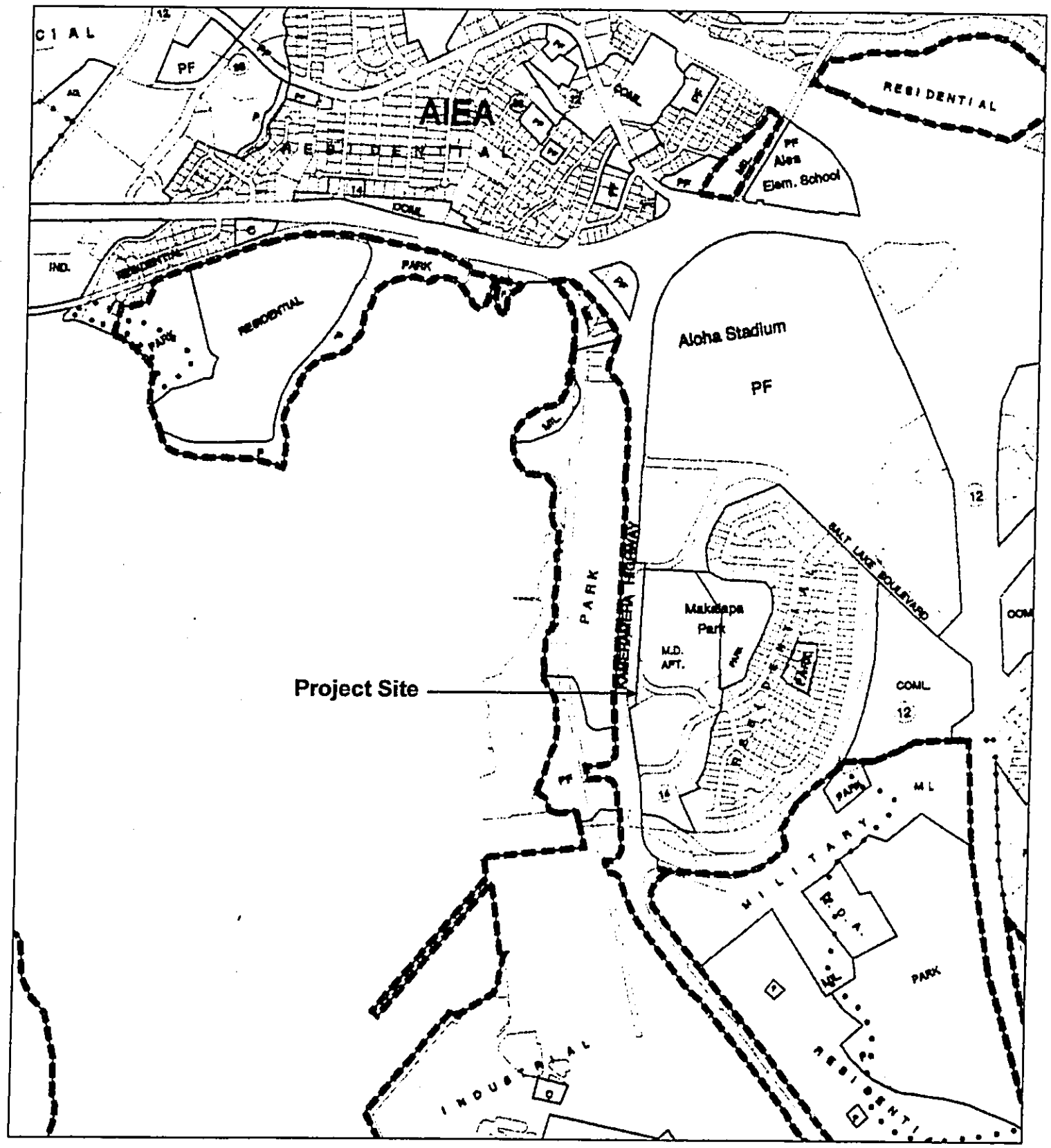

Figure 2-2 Primary Urban Center Development Plan Land Use: Residential

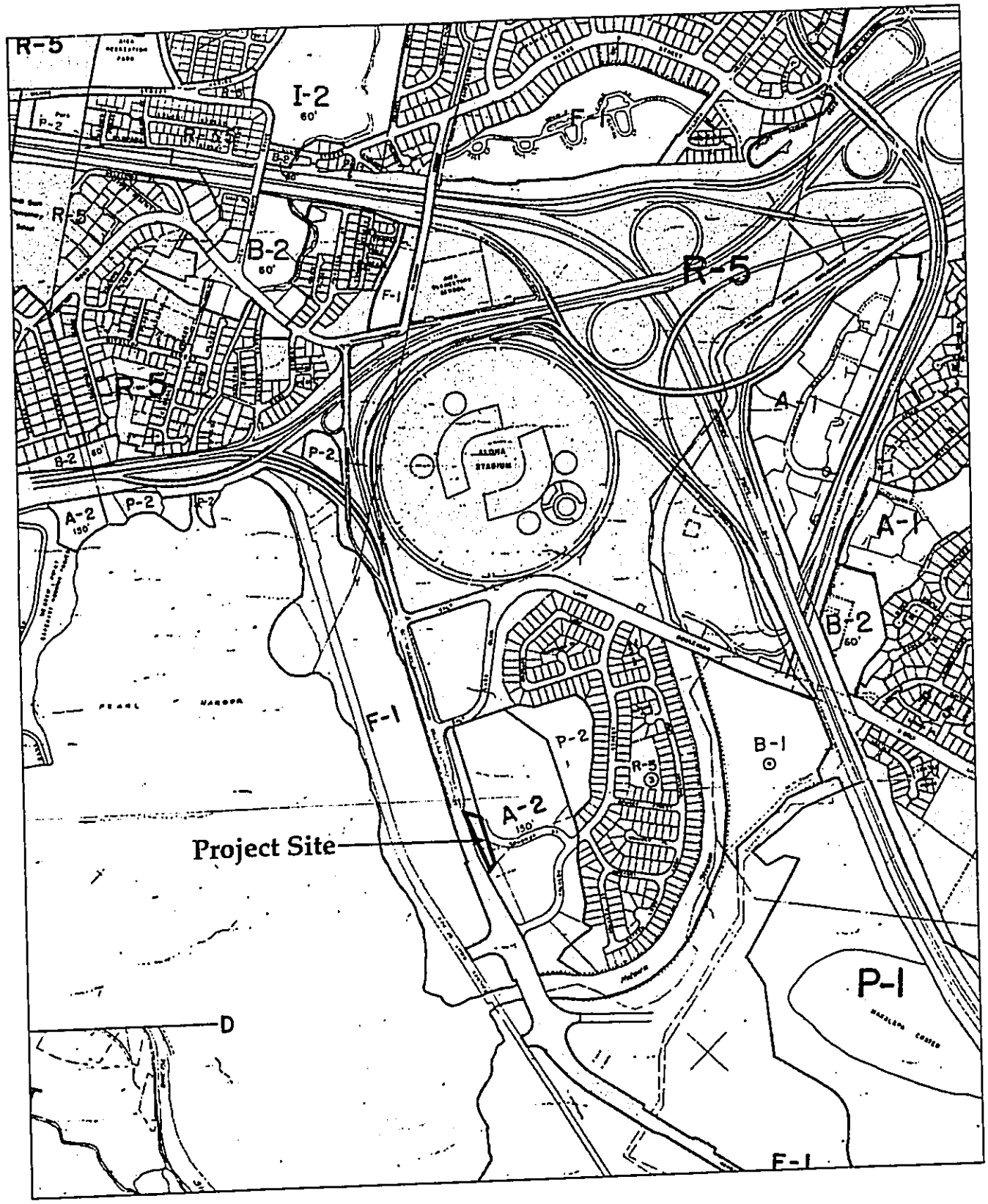

Figure 2-3 Existing Zoning: R-5
Zoning Map No. 7 Halawa to Pearl City 1986

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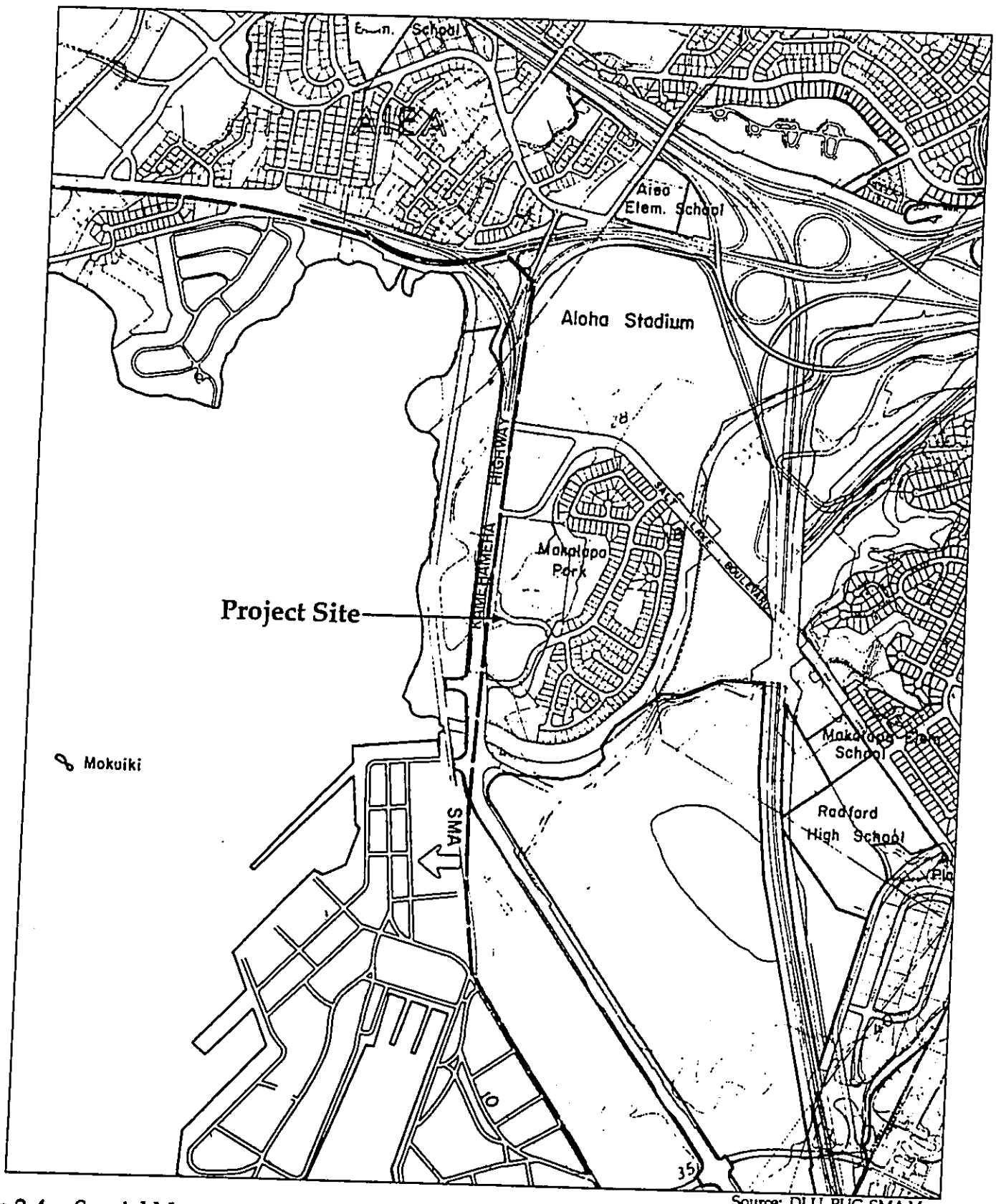


Figure 2-4 Special Management Area Map
Property is Outside SMA per DPP

Section 3.0
Description of Property

3.0 DESCRIPTION OF PROPERTY

3.1 LOCATION

The project site is located at Makalapa, Halawa, 'Aiea, O'ahu along Kamehameha Highway near the Aloha Stadium and Pu'uwai Momi housing area. The parcel, listed as TMK 9-9-03: 068, consists of 32,181 square feet or .7 acres of land.

3.2 EXISTING USE

Over the past 40 years the original owner was the State of Hawaii who possessed the property as part of a larger parcel containing Halawa Housing and a road. When the road alongside the housing was to become Kamehameha Highway, the decrepit housing was taken down, Kamehameha Highway was built, and the project site property remained as a highway remnant. St. Paul Evangelical Church purchased the land from the State and planned to build a church on the property. During this tenure an extension of Kohomua Street that connects to Kamehameha Highway was built. The church was never built on the property, and in 1992 R C J Corporation, the current owner, purchased the property.

The parcel is considered a vacant unimproved lot (Figure 3-1). However, the site is currently being used to support several general purposes. A portion is utilized as a construction staging area for equipment and materials. Another section is used as an egress route connecting Kohomua Street to Kamehameha Highway. The other part is utilized as overflow parking during Aloha Stadium events. These two portions are shown in Figure 3-2.

3.3 SURROUNDING USES

Aloha Stadium, located about a half a mile from the project site, is the largest stadium in the state. It hosts a variety of sporting and entertainment activities each year such as University of Hawai'i football games and the Pro Bowl as well as the swap meet which attracts thousands of visitors each week.

Other visitor destinations in the area include the U.S.S. Arizona Memorial and the U.S.S. Bowfin Submarine Museum. The site is also located very close to Pearl Harbor Naval Station.

Two low to moderate income housing projects, Pu'uwai Momi (Figure 3-3) and Makalapa Manor (Figure 3-4) are located adjacent to the proposed development in an area zoned A-2. The structures closest to the site are two story walk-ups. Other apartment complexes in the area include Centre Court, Halawa View Estates, and Halawa Valley Estates.

Kamehameha Highway, a major east west traffic route is located adjacent to the site.

3.4 TOPOGRAPHY

The project site is located 1,500 feet from Pearl Harbor. The site is approximately 10 feet above sea level and is generally flat.

3.5 SOILS

The project site is associated with the Lualualei-Fill land – Ewa soil association: Deep, nearly level to moderately sloping, well-drained soils that have a fine textured or of fill land; on coastal plains.

More specifically, the project site contains Makalapa clays with 2 to 6 percent slope (MdB). The MdB soil is used for urban development. In a representative profile of this soil type, the surface layer is very dark grayish-brown clay about 8 inches thick. The next layer, 18 to 36 inches thick, is very dark grayish-brown, weathered volcanic tuff. The clays are very sticky and very plastic, and they crack widely upon drying. The soil is mildly alkaline in the surface layer and mildly alkaline to moderately alkaline in the next layer. Permeability is slow. Runoff is slow, and the erosion hazard is slight. The available water capacity is about 1.4 inches per foot of soil. Roots penetrate to the volcanic tuff. Workabilitiy is difficult because the clay is very sticky and very plastic. The shrink-swell potential is high.

Much of the site is composed of imported fill from adjacent highway, roadway, and housing construction. These have mixed with the underlying soil associations.

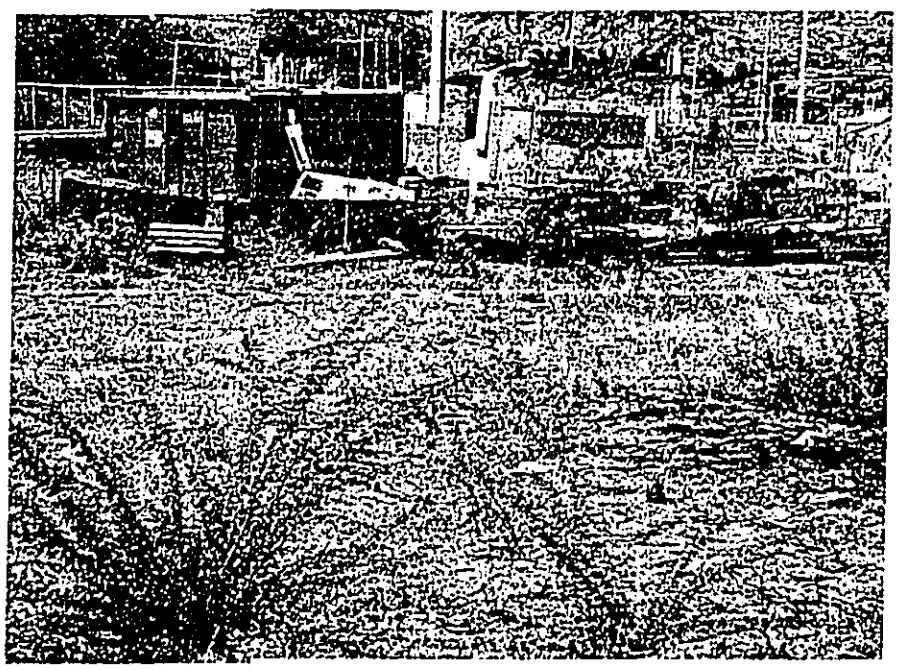
3.6 SLOPE

The project site is generally flat. There is a shallow drainage swale on the southern part of the site.

3.7 BOUNDARIES

The project site is bound by Kamehameha Highway to the west, Kohomua Street to the north and east and the Pu'uwai Momi Housing Project Administrative Office to the south.

3.8 MAPS AND FIGURES



Existing Use of Project Site

Figure 3-1

Surrounding Use: Egress Route and Vacant Lot

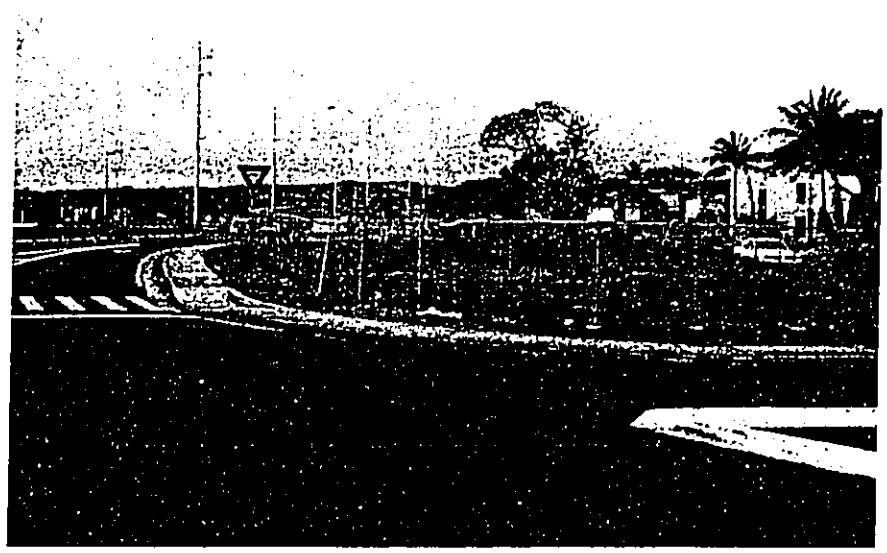
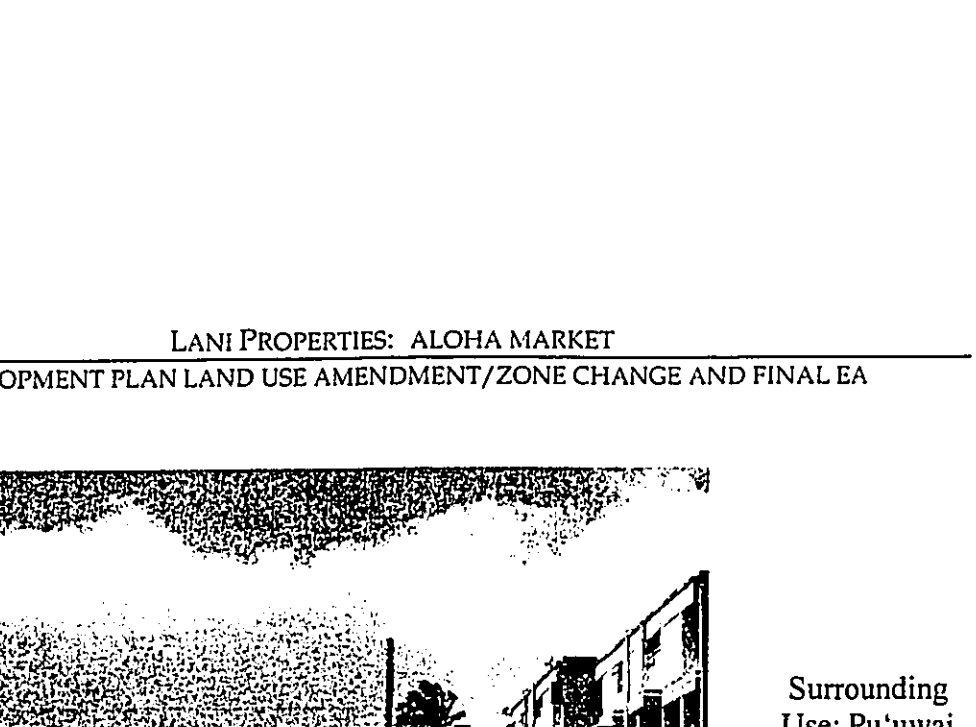


Figure 3-2

Surrounding Use: Pu'uwai Momi Housing Complex

Figure 3-3



Surrounding Use: Makalapa Manor Housing Complex

Figure 3-4

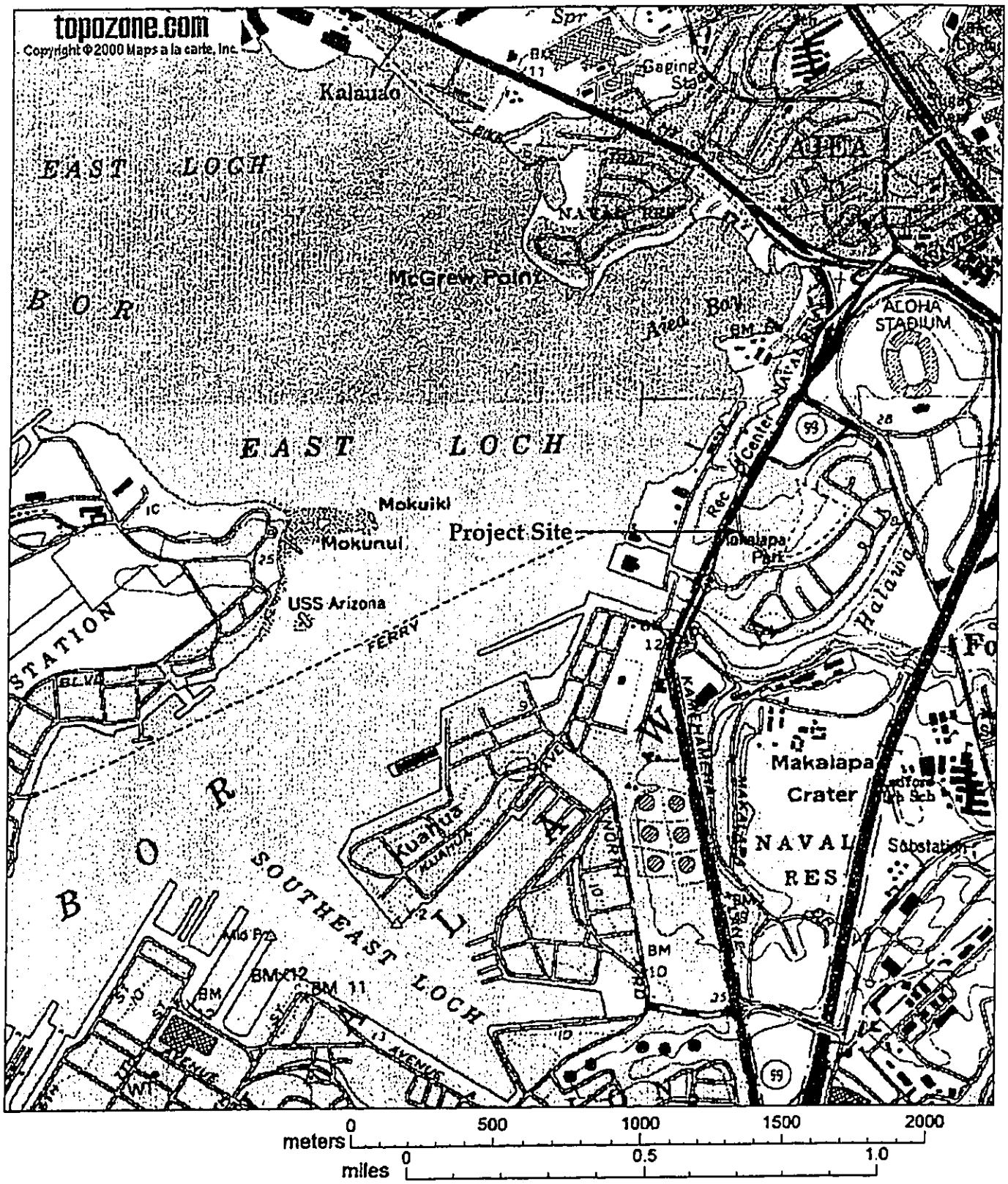


Figure 3-5 Topography
USGS Quadrangle Pearl Harbor

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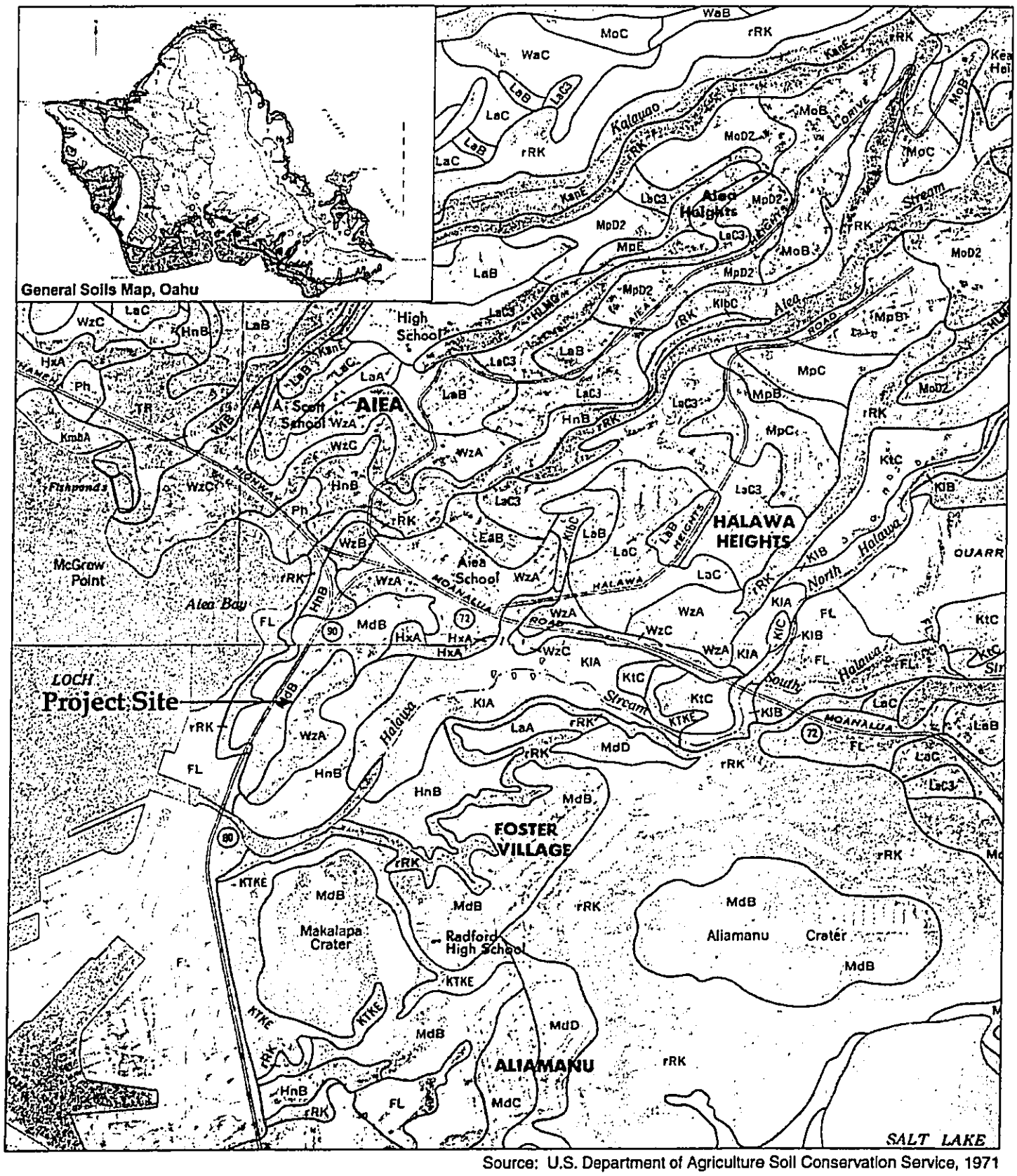

Source: U.S. Department of Agriculture Soil Conservation Service, 1971

Figure 3-6 Soils Makalapa Clay (MdB) Lualualei - Fill Land - Ewa Association

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Section 4.0
Development Proposal

4.0 DEVELOPMENT PROPOSAL

4.1 PROPOSED USE

The project proposes to utilize a 32,181 square foot lot as a 3-story 24-hour commercial establishment with a parking lot and access road.

The total area of the building will be 8,184 square feet. The first and second floors will each be 3,636 square feet and the third floor will be 912 square feet. The proposed uses include: a neighborhood convenience store, deli/take-out counter, outdoor patio area with tables and chairs, police work station, restrooms, third floor observation deck, and storage space. There will be additional tenant space for either a retail shop or museum.

The highest portion of the structure will be the elevator tower with a height of 45 feet. The height of the main roof will be 35 feet while the height of the outdoor observation deck area will be 22 feet. The project also includes the creation of 24 parking spaces and one loading zone. The project site will be landscaped to complement the area.

In addition, a right turn access from Kamehameha to Kohomua Street is also proposed. The traffic configuration will be discussed further in Section 6.4.

4.2 TIMETABLE

Construction on the project will begin in the Spring of 2002 and take twelve months to eighteen months to complete.

4.3 PROJECT COST

The costs of constructing the building will be approximately $1 million. Landscaping around the project site will cost approximately $42,000.

There are additional costs associated with redesigning the roadway.

4.4 PROJECT NEED

The surrounding residential neighborhood is a market for the commercial services that will be provided by the neighborhood convenience store and deli/take out counter. This residential population was estimated at 3,080 individuals according to the 1990 census. There are currently no convenience stores or restaurants within easy walking distance of the Makalapa Manor and Pu'uwai Momi housing complexes or Makalapa Park.

Tourists visiting the U.S.S. Arizona Memorial and Hawai'i residents attending events at Aloha Stadium are also a market for the proposed convenience store. The number of tourists is significant with more than 1.4 million individuals visiting the U.S.S. Arizona in 1996.

In addition, the police work station will increase the police presence in the neighborhood enhancing safety in the neighborhood.

4.5 MAPS AND FIGURES

Figure 4-1 Proposed Development Plan Land Use Map
Figure 4-2 Preliminary Site Plan
Figure 4-3 First, Second, and Third Floor Site Plans
Figure 4-4 Front Elevation
Figure 4-5 Conceptual Roadway Circulation Plan

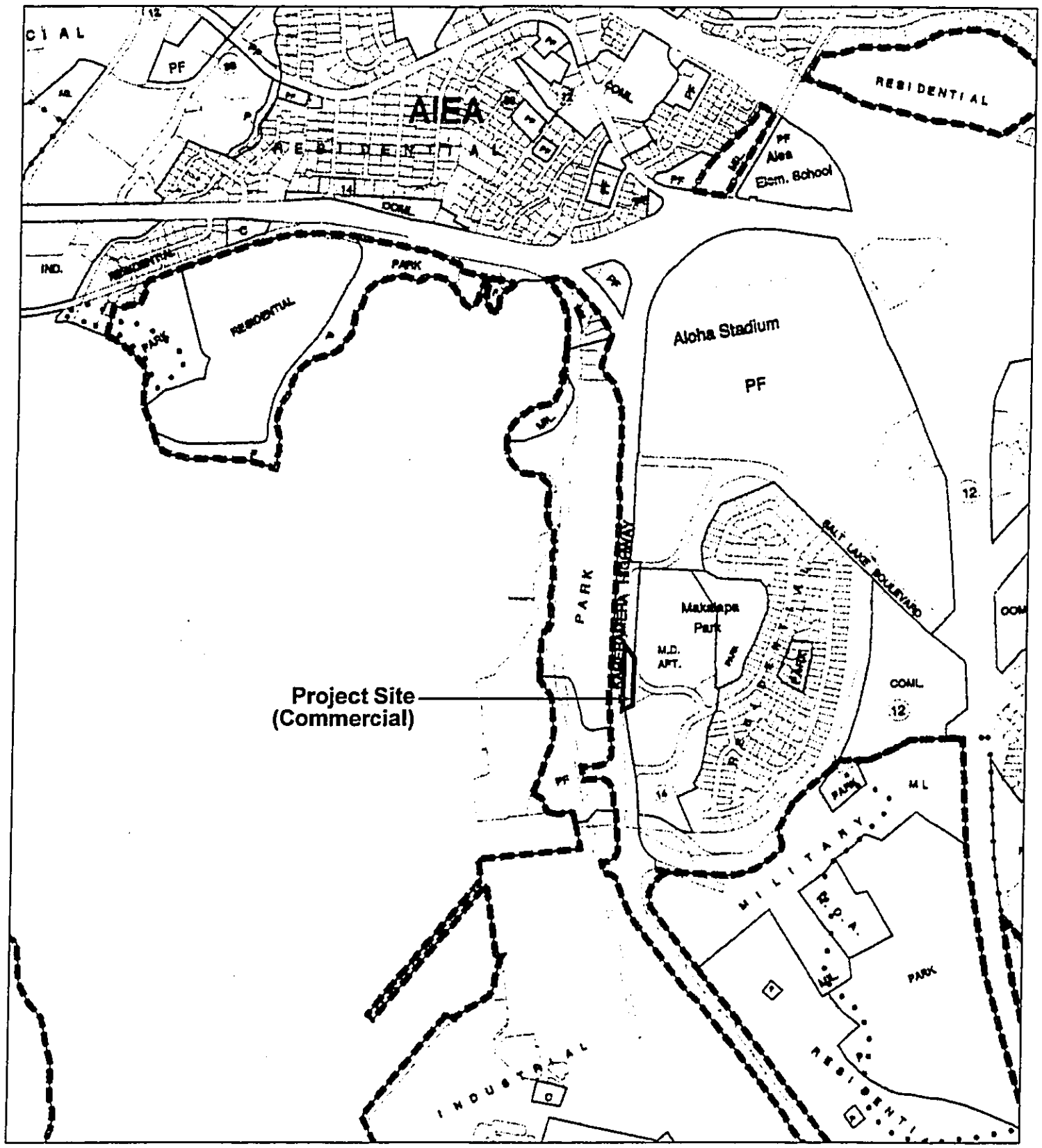


Figure 4-1 Proposed Development Plan Land Use map

CORRECTION

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

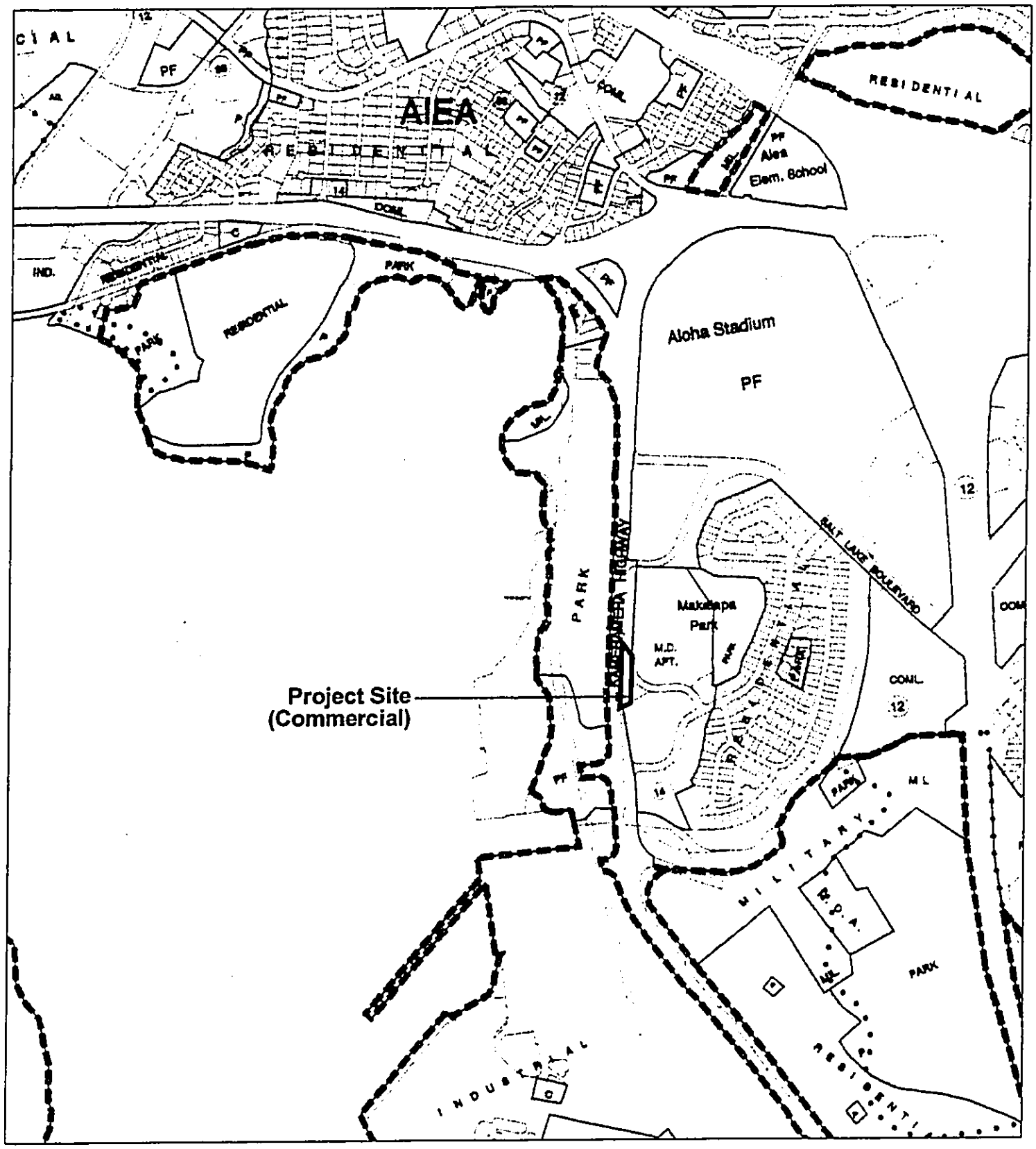


Figure 4-1 Proposed Development Plan Land Use map

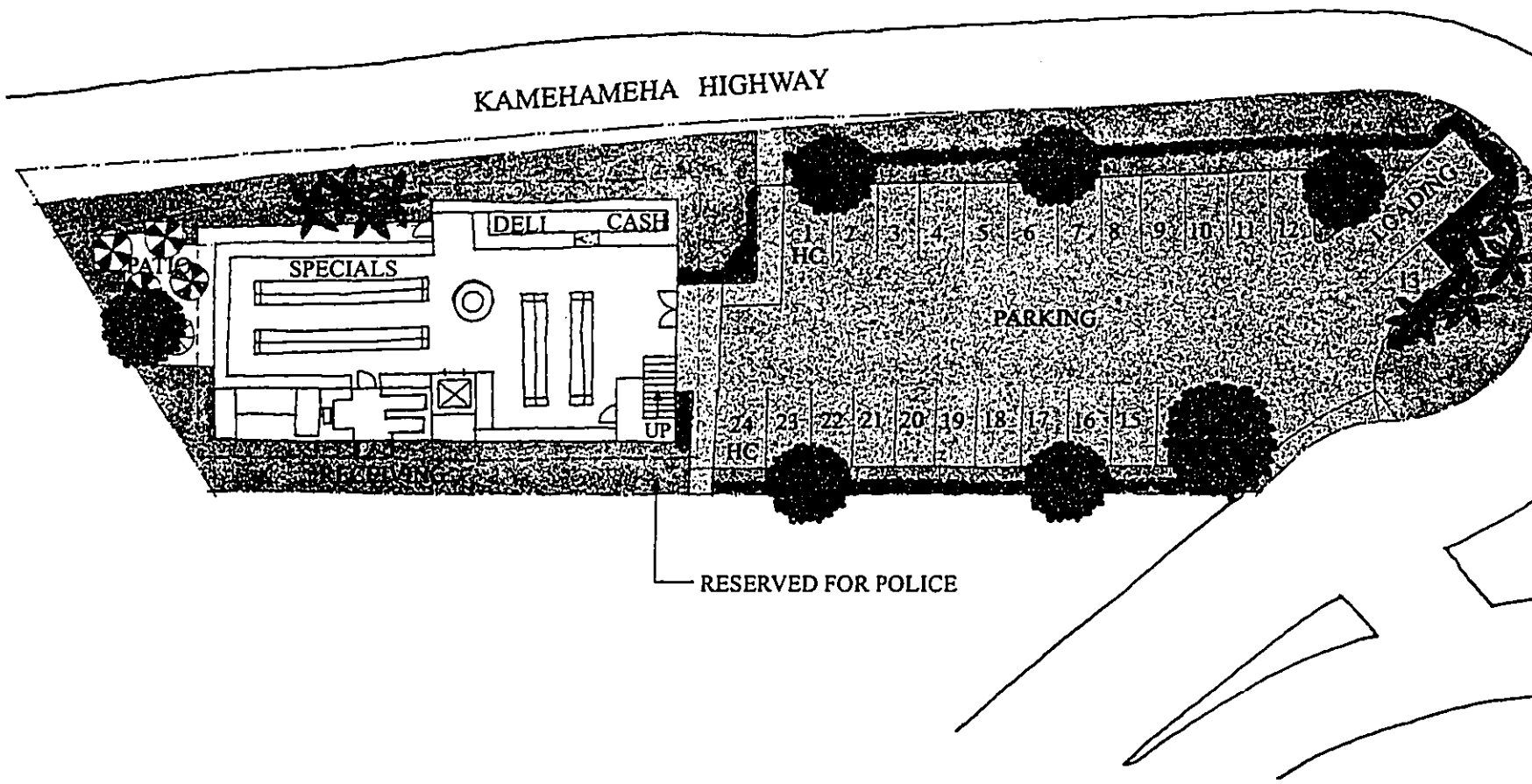
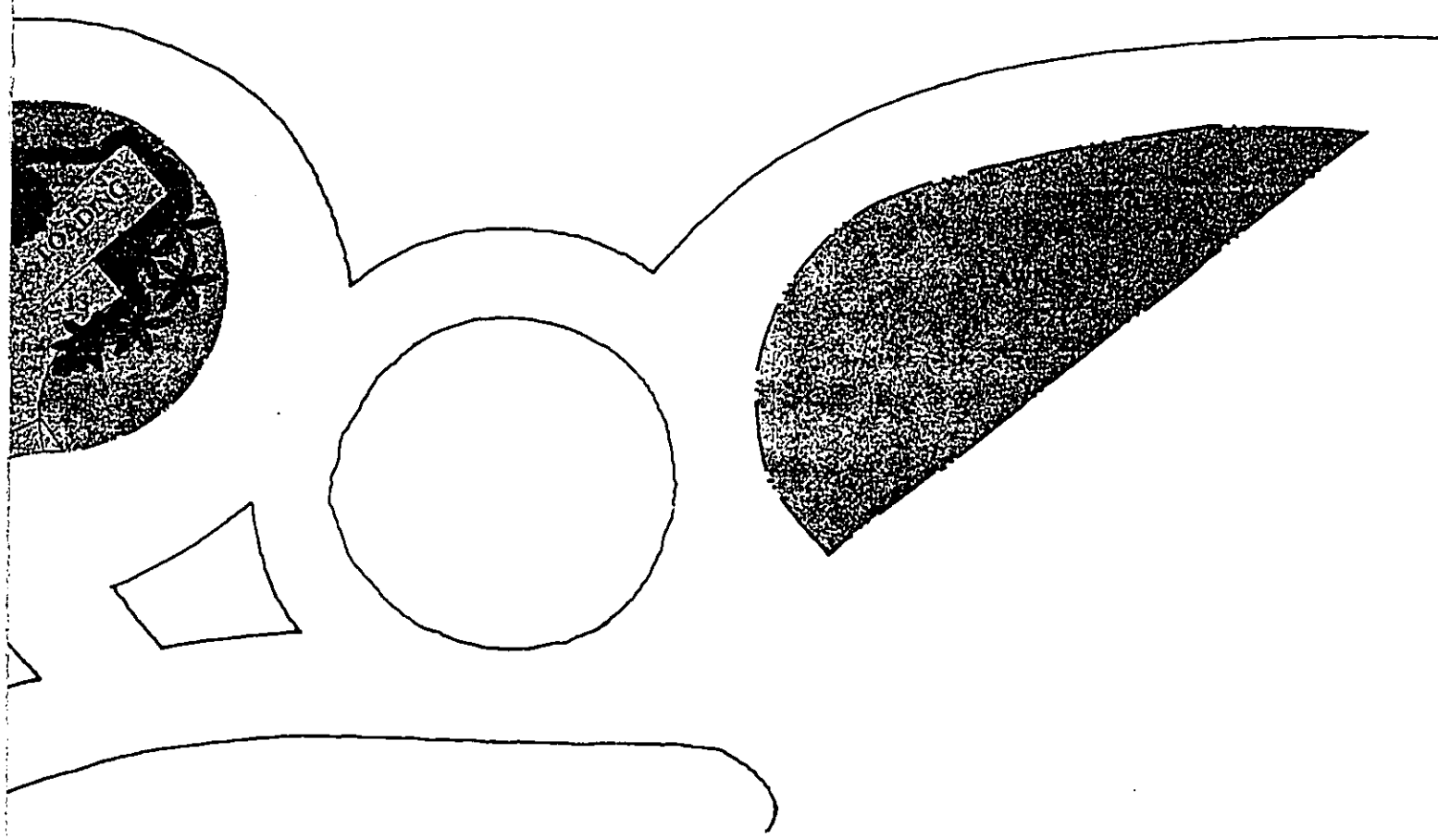


Figure 4-2 Preliminary Site Plan



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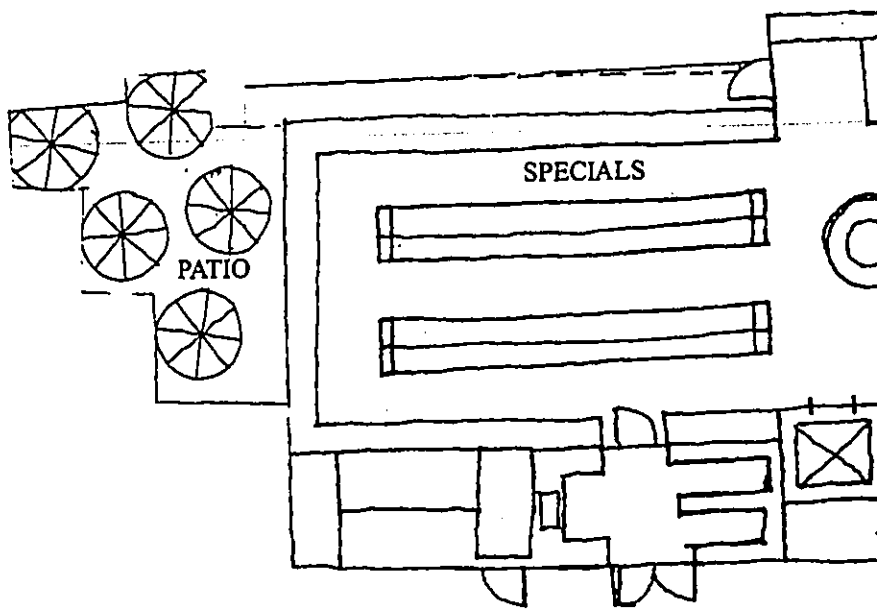
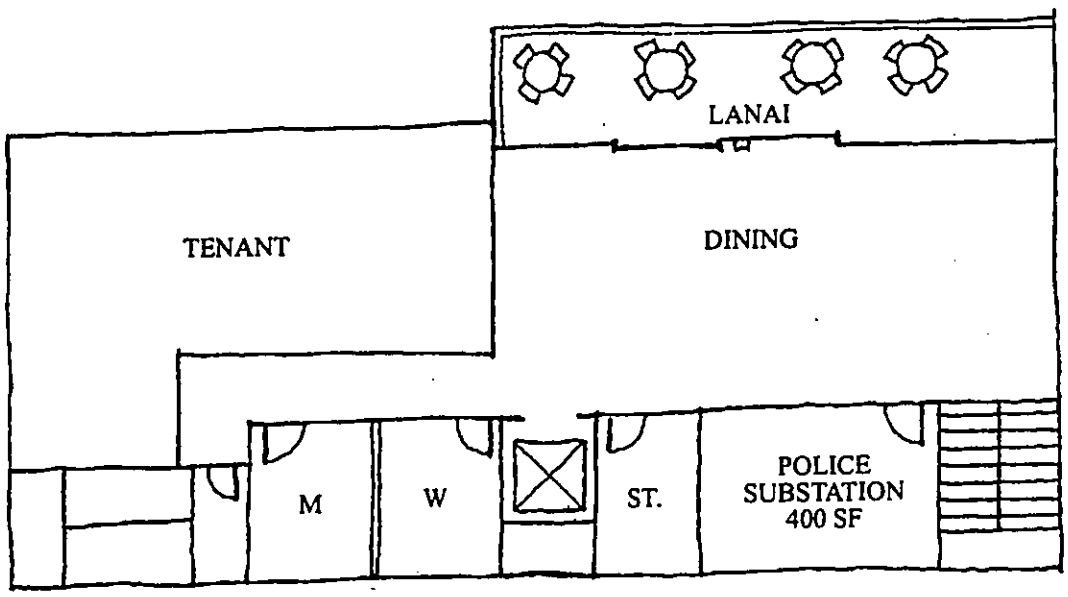
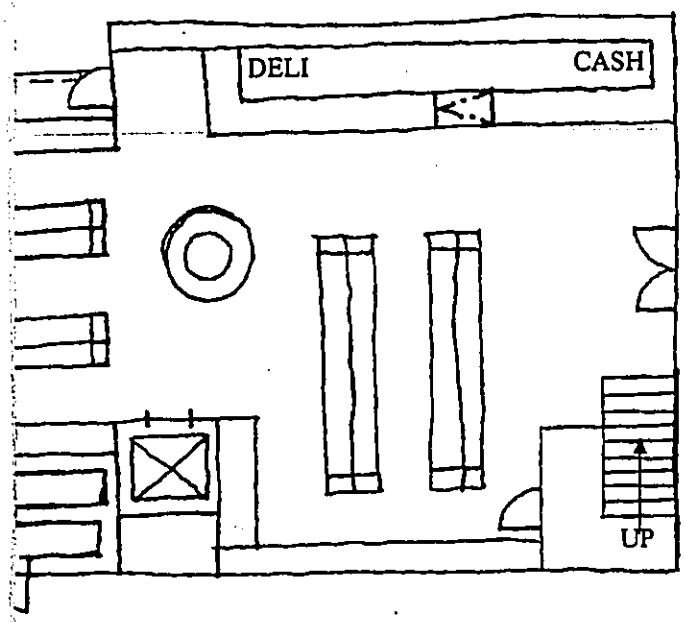


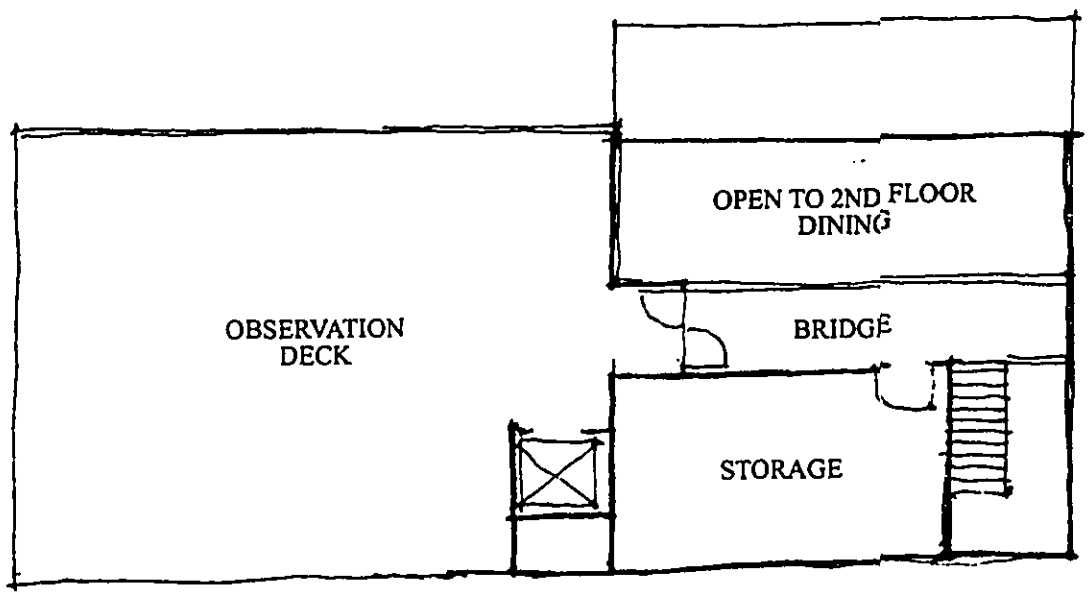
FIRST FLOOR PLAN



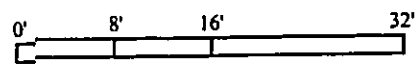
SECOND FLOOR PLAN

Figure 4-3 First, Second and Third Floor Site Plans





THIRD FLOOR PLAN



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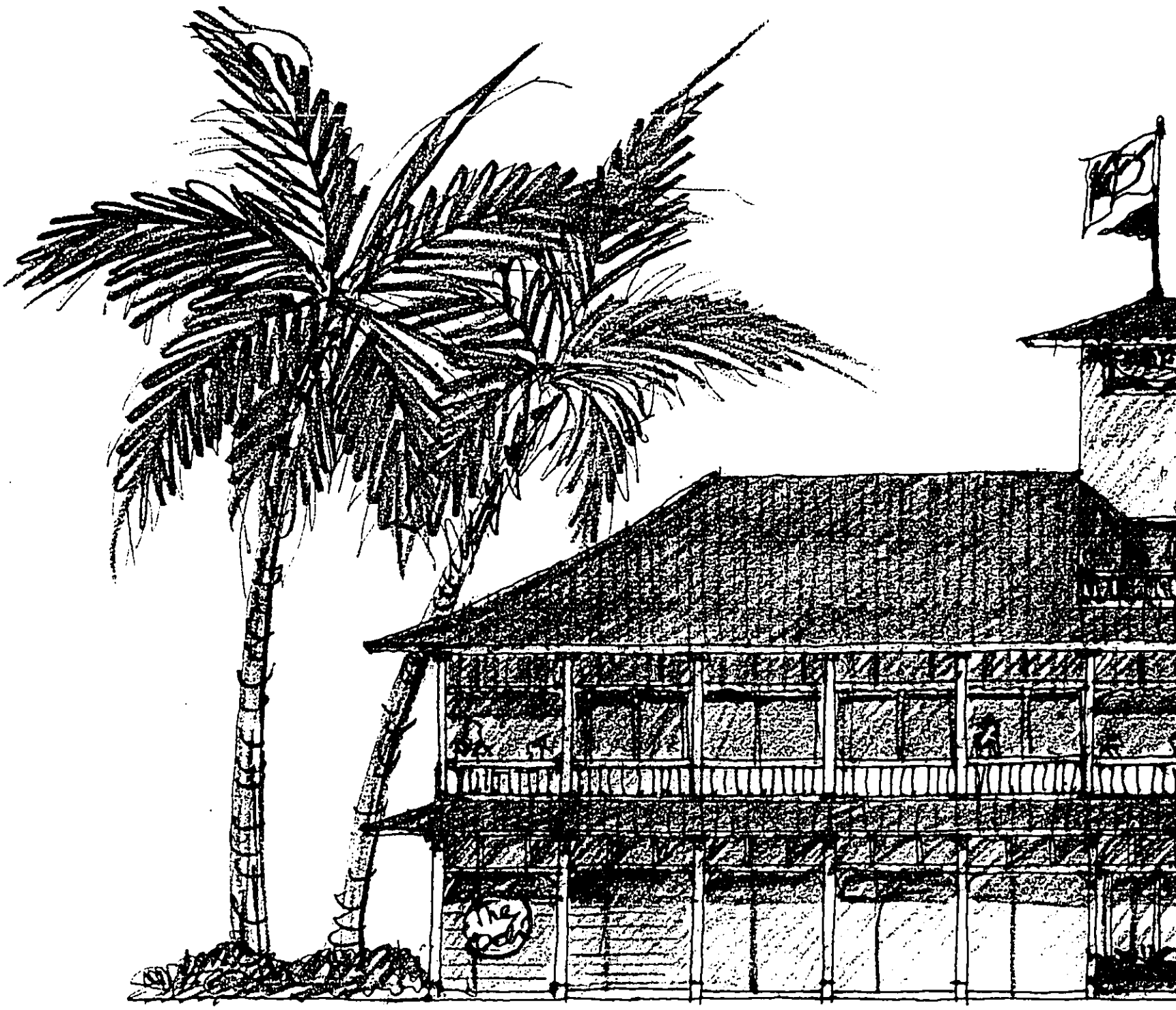
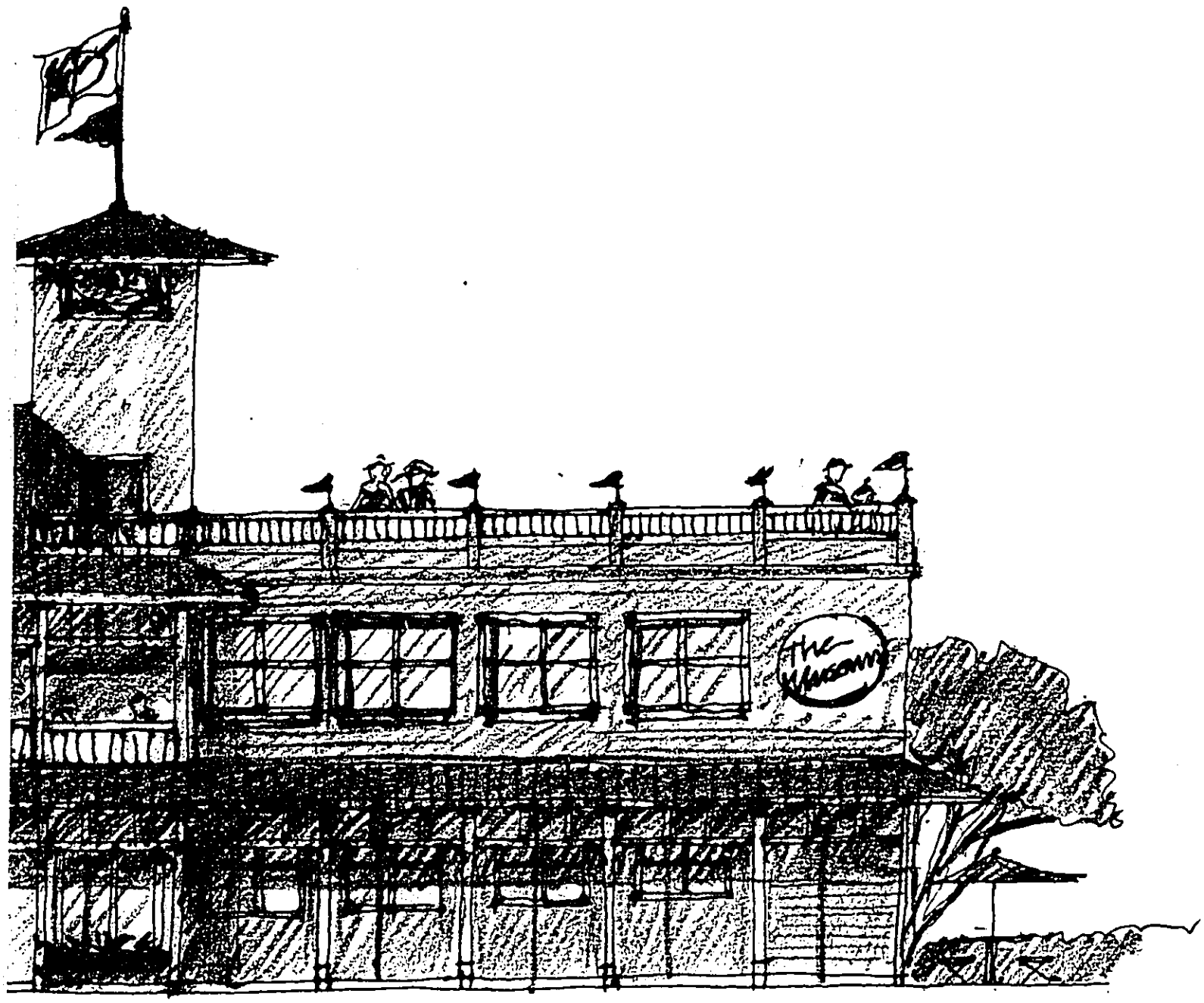


Figure 4-4 Front Elevation



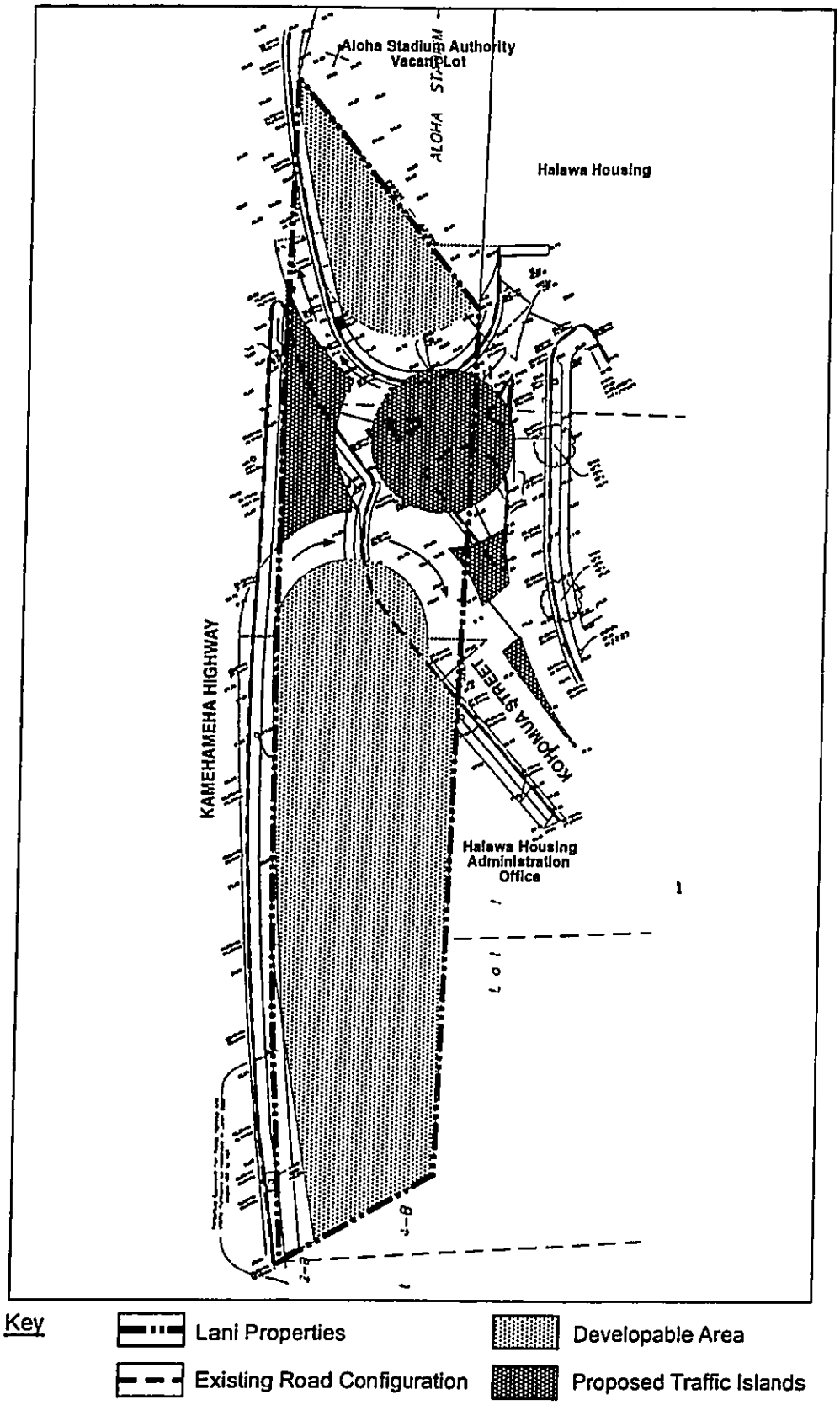


Figure 4-5 Conceptual Roadway Circulation Plan

Section 5.0

Conformance to Federal, State and City Plans and Programs

5.0 CONFORMANCE TO FEDERAL, STATE AND CITY PLANS AND PROGRAMS

5.1 EXISTING LAND USE AND ZONING DESIGNATIONS

Current zoning and land use designations for the project site are as follows:

State Land Use District:	Urban
State Coastal Zone Management Program:	Consistent
Primary Urban Center Development Plan:	Residential
County Zoning District:	R-5, Residential

5.2 APPROVALS NEEDED

The proposed project will require the following government approvals and/ or permits:

- Independent Consideration for a Development Plan Land Use Map Amendment – from the City Department of Planning and Permitting and Planning Commission
- Environmental Assessment – Accepting agency is the City Department of Planning and Permitting
- Zone Change – City Department of Planning and Permitting, City Council
- Connection to Federal Aid Highway – State Department of Transportation

5.3 HAWAI'I STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies which detail priority directions and concerns of the State of Hawai'i. The proposed project supports and is consistent with the following State Goals, Objectives, Policies and Priority Guidelines:

A. Economy - General
Objective: Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.

B. Physical Environment – Land, Air, and Water Quality
Objective:
1. Maintenance and pursuit of improved quality in Hawai'i's land, air and water resources

Policy:
7. Encourage urban developments in close proximity to existing services and facilities.

C. Facility Systems - Transportation

Objective:

1. An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.

Policies:

6. Encourage transportation systems that serve to accommodate present and future development needs of communities.

10. Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment.

D. Socio-cultural advancement – Public Safety

Objective:

1. Assurance of public safety and adequate protection of life and property for all people.

Policies:

1. Ensure that public safety programs are effective and responsive to community needs.

5.4 HAWAI'I STATE FUNCTIONAL PLANS

The State Functional Plans implement the Goals, Objectives, Policies and Priority Guidelines of the Hawai'i State Plan. The Functional Plans provide the connection between State programs and State policy. Twelve functional plans have been adopted by the State Legislature which include the areas of Agriculture, Conservation Lands, Education, Energy, Health, Higher Education, Historic Preservation, Housing, Recreation, Tourism, Transportation and Water Resources. The applicant intends to respect the guidelines of all adopted Functional Plans.

The State Transportation Functional Plan:
The overall objective of the State Transportation Plan is to provide for the efficient, safe, and convenient movement of people and goods. Relative to this, the proposed project will incorporate practices to insure compatibility with the policies of the Plan. For example, one objective is to reduce travel demand through zoning and decentralization initiatives. The location of the convenience store adjacent to the neighboring apartment complexes will reduce travel demand. As such, there would be general compliance with the Plan. The impacts of the proposed project on existing transportation facilities are addressed in Section 6.4.1.

The remaining functional plans are not directly relevant to the proposed project.

5.5 STATE LAND USE DISTRICT BOUNDARIES

The project site is located within the State Urban District. The State of Hawai'i Land Use Law regulates the classification and uses of lands in the State to accommodate growth and development, and to retain the natural resources of the area. All State lands are classified by the State Land Use Commission, with consideration given to the General Plan of the County, as

either Urban, Rural, Agricultural, or Conservation. The proposed project does not require a change in the State Land Use designation; it is a permitted use within the Urban District.

5.6 HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Hawai'i Coastal Zone Management (CZM) Program is a framework for designing and carrying out permitted land and water uses and activities while respecting the resources and values expressed by the CZM objectives and policies. All property in the state is classified as Coastal Zone Management Area. However, the project site is not located within a Special Management Area.

Scenic and Open Space Resources

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

Policy C: Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.

Discussion: The third floor observation deck of the project will open up opportunities to view the harbor to area residents and visitors. Improved landscaping onsite will beautify the landscape and improve the aesthetic quality of the area.

Coastal Ecosystems

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

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

Discussion: The project will continue to protect the coastal ecosystem from runoff. During construction the use of best management practices will reduce runoff, and after construction, landscaping vegetation will serve to filter runoff.

5.7 CITY AND COUNTY OF HONOLULU GENERAL PLAN

The General Plan for the City and County of Honolulu sets forth long-range objectives for the general welfare and prosperity of the people of O'ahu and broad policies to attain those objectives. The development of a commercial facility advocates the following goal and policies of the City and County of Honolulu General Plan:

Economic Activity

Objective A: To promote employment opportunities that will enable all the people of O'ahu to attain a decent standard of living.

Policy: Encourage the development of small businesses and larger industries which will contribute to the economic and social wellbeing of O'ahu residents.

Discussion: The proposed development will generate two types of employment opportunities, those in construction and those in operations. The proposed

development will provide opportunities for small businesses to service the neighboring community and surrounding attractions.

Transportation and Utilities

Objective A: To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.

Discussion: The proposed development will improve the vehicular circulatory system by providing a new access from Kamehameha Highway onto Kohomua Street. The new intersection will be designed to provide safe vehicular and pedestrian access. The store's convenience to housing will encourage walking. Its location near bus routes also encourages non-auto travel.

Physical Development and Urban Design

Objective A: To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy: Provide more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.

Discussion: The proposed design will compliment the character of the residential neighborhood.

Objective B: To develop Honolulu, 'Aiea, and Pearl City as the Island's primary urban center.

Policy: Encourage the establishment of mixed-use districts with appropriate design and development controls to insure an attractive living environmental and compatibility with surrounding land uses.

Discussion: The proposed convenience store is compatible with the surrounding residential uses and tourist attractions. Its development will enhance the mixed-use quality of the community that is important to its vitality.

5.8 PRIMARY URBAN CENTER DEVELOPMENT PLAN

The subject property is designated Residential on the City and County of Honolulu's Primary Urban Center Development Plan Land Use Map. The project proposes to seek an Independent Consideration for a Development Plan Land Use Map Amendment to change a Community Commercial.

The City and County of Honolulu's Development Plans and Sustainable Communities Plans provide direction for a region's orderly future growth within the framework of the General Plan, and serves as guides for specific land use and development decisions.

5.9 ZONING DISTRICTS

The purpose of the Land Use Ordinance for the City and County of Honolulu is to implement the General Plan and Regional Development Plan's policies for growth and development through the regulation of the uses permitted within different zoning districts. The property is designated R-5, Residential on the City and County of Honolulu's Zoning Map. Adjacent properties are zoned A-2, Apartment and surrounding zones include F-1, Military and B-1, Business use.

The proposed project is inconsistent with the existing Zoning Map designation. The proposed project will require a zone change to B-2 for purposes of commercial uses. As part of the zone change requirements, the applicant must also request for an Independent Consideration of a Development Plan Land Use Map Amendment, which also requires an Environmental Assessment.

Section 6.0
Socio-Economic Impacts

6.0 SOCIO-ECONOMIC IMPACTS

6.1 DEMOGRAPHIC

Existing Conditions: There are visitor and resident populations in the area where the project site is located. In 1990, there were 3,080 individuals and 801 households in the immediate area (Figure 6-1). 37% of the population was under 18 and the medium household income was $28,350. Residents live in both multi-family and single-family housing.

The closest residents to the project site reside in two low-to-moderate income housing developments, Pu'uwai Momi and Makalapa Manor (Figure 6-1). There are 222 units in Pu'uwai Momi, a Housing and Community Development Corporation of Hawai'i (HCDCH) public housing complex, and 1,200 individuals reside in the complex. 122 families inhabit Makalapa Manor. Other apartment complexes in the area include Centre Court, Halawa View Estates, and Halawa Valley Estates.

The primary visitor destinations in the area are the U.S.S. Arizona Memorial, the U.S.S. Bowfin Submarine Museum, and Aloha Stadium. Each year more tourists visit the U.S.S. Arizona Memorial than any other museum or cultural attraction on O'ahu. In 1996, more than 1.4 million individuals visited the U.S.S. Arizona and 180,227 toured the U.S.S. Bowfin Submarine Museum. The Aloha Stadium hosts a variety of sporting and entertainment activities each year. For example, in 1998 nearly 50,000 individuals attended the Pro Bowl at the stadium. In addition, the swap meet at the stadium attracts thousands of visitors each week.

Although there is a large visitor population in the area, the overall character of the neighborhood is apartment residential. The business areas closest to the project site are depicted in Figure 6-2.

Anticipated Impacts and Mitigative Measures: This project will not displace residents or negatively impact visitors in the area. The proposed convenience store will provide important commercial services to visitors and residents in the area.

As depicted in Figure 6-1, there are no other business districts near the project site. The proposed zoning change would not negatively impact the surrounding character because the scale is very small and the convenience store/deli use is compatible with the neighborhood. The applicant does not own any other property in the area and therefore does not intend to expand his business activities at a later date. The vacant lot across from the project site is owned by the State of Hawai'i and their future intentions are unknown.

No mitigative measures are necessary.

6.2. ECONOMIC

Existing Conditions: Most residents of the area work in 'Aiea, Pearl City and Honolulu. Nearby commercial activities include K Mart and other commercial establishments at the Stadium Market Place and Stadium Mall.

Anticipated Impacts and Mitigative Measures: The new retail area will create both short-term and long-term economic benefits. The project will create short-term benefits as a result of design and construction employment. The project will create jobs for local construction personnel. Local material suppliers and retail businesses can also be expected to benefit through a multiplier effect from the increased construction activities. State General Excise Tax revenues will be generated by the project's construction and related expenditures.

Long-term economic benefits include the creation of new retail jobs and increased government revenues generated from the retail activities. No mitigative measures are necessary.

6.3 HOUSING

The proposed project does not add nor subtract any housing units. Instead, the project is intended to support existing housing by providing retail and commercial services.

6.4 PUBLIC FACILITIES

6.4.1 Traffic and Transportation

Existing Conditions: The site is located along Kamehameha Highway, a State Highway. Kamehameha Highway is the major north-south arterial road near the project. The Highway links the airport and the Mapunapuna area to Pearl City. In the vicinity of the project site, Kamehameha Highway is a two-way divided roadway with two lanes in the northbound direction and three lanes in the southbound direction. The posted speed limit is 35 miles per hour. While the highway abuts the site, there is no direct access to the site from the Highway. Access to the site is from Kamehameha Highway through Kalaloa Street and Kohomua Street.

Kalaloa Street is a smaller street that connects Kamehameha Highway to Salt Lake Boulevard. Kalaloa is a two-way, two-lane road with a posted speed limit of 25 miles per hour. Kohomua Street is a residential two-way, two-lane road that connects Kalaloa Street to Kamehameha Highway. Kohomua Street currently has a right turn only access to northbound Kamehameha Highway.

Kamehameha Highway is a major transit corridor and several bus routes service the area. There is a bus stop just north of the site.

Manual traffic counts were taken during the weekday morning and afternoon peak periods at the Kamehameha Highway/Kalaloa Street intersection and the Kalaloa Street/Kohomua Street intersection. A machine counter was used to record the traffic volumes from Kohomua Street to northbound Kamehameha Highway on May 15, 2001. According to the traffic count data, the morning (AM) peak hour of traffic on northbound Kamehameha Highway occurs from 7:15 AM to 8:15 AM and the afternoon (PM) peak hour of traffic occurs from 3:30 PM to 4:30 PM. Figure 6-3 displays the existing weekday peak hour traffic volumes.

Anticipated Impacts and Mitigative Measures:

Construction Period: Construction activities will be appropriately scheduled to avoid unnecessary impacts on transportation. Contractors will be responsible for providing necessary traffic controls and precautions to maintain traffic safety on roadways fronting the project site.

Future Traffic Flow: A Traffic Impact Analysis Report (TIAR) was completed to determine the impact of the convenience store/deli and roadway change (Appendix B). The report concluded that traffic impacts of the project are anticipated to be nominal. The TIAR indicated that the Aloha Market will generate a total of 135 trips during the weekday morning of peak hour of traffic and 109 trips during the evening peak hour of traffic. See Figure 6-4.

The project will construct a right-turn access to Kohomua Street from northbound Kamehameha Highway. Based on the traffic count data, the diversion for non-project related traffic is not anticipated to be significant. It was estimated that approximately 50 percent of the existing traffic that enters Kohomua Street from Kamehameha Highway will divert to the new access resulting in a diversion of approximately ten trips during the morning peak hour of traffic and twelve trips during the evening peak hour of traffic. The majority of project traffic, however, is anticipated to use the new access to Kohomua Street.

The proposed improvements will have no effect or minor effects on surrounding intersections. The Kamehameha Highway and Kalaloa Street intersection will operate at acceptable levels. The intersection of Kalaloa Street and Kohomua Street will continue to remain free of traffic congestion. Right turn movement at the Kamehameha Highway/Kohomua Street intersection will experience slightly higher delays during the morning peak hour of traffic and will continue to operate at the current level of congestion during the afternoon peak hour traffic. The intersection of the project driveway and Kohomua Street forms an unsignalized "Tee" intersection. These intersections will operate at acceptable level levels.

In order to mitigate any adverse effects, a right-turn deceleration lane on northbound Kamehameha Highway for the new access to Kohomua Street is proposed. This deceleration lane can be implemented by extending the existing right-turn acceleration

lane at the Kamehameha Highway/Kalaloa Street intersection to the Kohomua Street access forming an auxiliary lane between the two intersections. In addition, a turn-around lane could be provided at the north end of Kohomua Street. A small radius circle would facilitate turn movements at the north end of Kohomua Street (Figure 4-7) The turning radius would effectively channel Pu'uwai Momi traffic into that parking area. During peak traffic periods, vehicles turning into the Pu'uwai Momi may pause before entering, however, the time saved by using the new exit from Kamehameha Highway should exceed the time spent traveling along the longer current access from Kalaloa Street.

The proposed crosswalks for the revised intersection at Kohomua and Kamehameha Highway will be elevated a few inches above the roadway surface. This design provides two major benefits. First, it improves pedestrian safety by elevating them and making them more visible to drivers. Second, they function as defacto speed bumps for traffic calming and safety.

6.4.2. Water

Existing Conditions: *The Board of Water Supply's system provides potable water to the* area. There is an existing water main fronting the property along Kohomua Street.

Anticipated Impacts and Mitigative Measures: The proposed development will require potable water. A hook-up can be established to the existing water main fronting the property. The small amount of water used for the retail center and landscaping is not expected to significantly impact the capacity of the area's water supply system. No mitigative measures are considered necessary.

6.4.3 Wastewater

Existing Conditions: There is no wastewater disposal system on the property at present. Local residential areas are served by the City and County of Honolulu Sewer System, which collects wastewater and transmits it to the wastewater treatment plant. The closest wastewater hook-up which would not require easements through private property is approximately 700 feet away at the intersection of Kalaloa and Kohomua Streets. There is another connection about 500 feet from the project site on Kalaloa Street. However, easements from the State would be required to access this connection.

Anticipated Impacts and Mitigative Measures: The project is not anticipated to generate a significant amount of wastewater. It is expected that the additional wastewater created by the project can be accommodated by the City system without adverse impacts on the current system.

6.4.4 Drainage

Existing Conditions: There is an existing drainpipe under Kamehameha Highway that funnels water off the site towards the airport.

Anticipated Impacts and Mitigative Measures: The proposed project will utilize the existing drainage system. No mitigative measures are considered necessary.

6.4.5 Solid Waste

Existing Conditions: Municipal solid waste generated by local residents in the area is currently removed by City and private haulers. This waste is disposed at City landfills.

Anticipated Impacts and Mitigative Measures: Waste generated during construction will be appropriately managed temporarily in on-site storage areas and then later disposed off-site at a proper disposal site. Materials generated from clearing and grubbing activities will be disposed of separately from the other construction wastes.

The waste generated from the retail center will be collected by private haulers and transported to an appropriate City disposal facility on O'ahu. City waste disposal facilities are expected to be able to accommodate waste from this project without adverse effects on capacity.

6.4.6 Schools

Existing Conditions: There are several schools found within one to two miles of the project site. To the north are 'Aiea Intermediate School, 'Aiea High School, Alvah A. Scott Elementary School and Gustave H. Webling Elementary School. South of the project site are Makalapa Elementary School, Radford High School, Salt Lake Elementary School, Pearl Harbor Elementary School, and Nimitz Elementary School.

Anticipated Impacts and Mitigative Measures: Construction of the retail center on this site will have no impact on the local schools and no mitigative measures are considered necessary.

6.4.7 Parks

Existing Conditions: Makalapa Park, a small community park, and Richardson Recreation Center are located close to the proposed development. Several other parks and playgrounds are found within one to two miles of the project site. 'Aiea District Park is north of the project site. To the east of the project site is Halawa District Park. Aliamanu Playground and Salt Lake District Park, the largest park in the area, are located to the southeast.

Anticipated Impacts and Mitigative Measures: The proposed project will provide commercial services to park and recreation center users. No mitigative measures are considered necessary.

6.4.8 Police

Existing Conditions: The site is located in the Honolulu Police Department, District 3, and Beat 366. District 3 encompasses the Pearl City area.

Anticipated Impacts and Mitigative Measures: It is expected that the impact on police services in the area will be negligible. If the operation becomes a 24 hour establishment, there will be a two person team working during the evening and early morning hours to increase safety and deter unwanted activity. Space will be available for a police work station, should the City be interested in locating there. This would improve police service to the immediate area and benefit the surrounding community.

6.4.9 Fire

Existing Conditions: There are three fire stations between one and 2.5 miles of the project site. They are 'Aiea Fire Station, Moanalua Fire Station, and Mokulele Fire Station.

Anticipated Impacts and Mitigative Measures: The expected impact on fire services in the area will be negligible.

6.4.10 Utilities

Existing Conditions: The Hawaiian Electric Company, Inc (HECO) serves the electrical needs of the surrounding residential area.

Anticipated Impacts and Mitigative Measures: The construction of the proposed retail center will not create significant demands on electrical services.

6.4.10 Other Issues

Existing Conditions: Concerns have been voiced regarding the possibility of alcoholic beverage sales.

Anticipated Impacts and Mitigative Measures: The application is for a convenience store and commercial zoning, so this issue is premature. Liquor sales, if pursued will be pursued during permits that will be needed from the Liquor Commission.

6.5 MAPS AND FIGURES

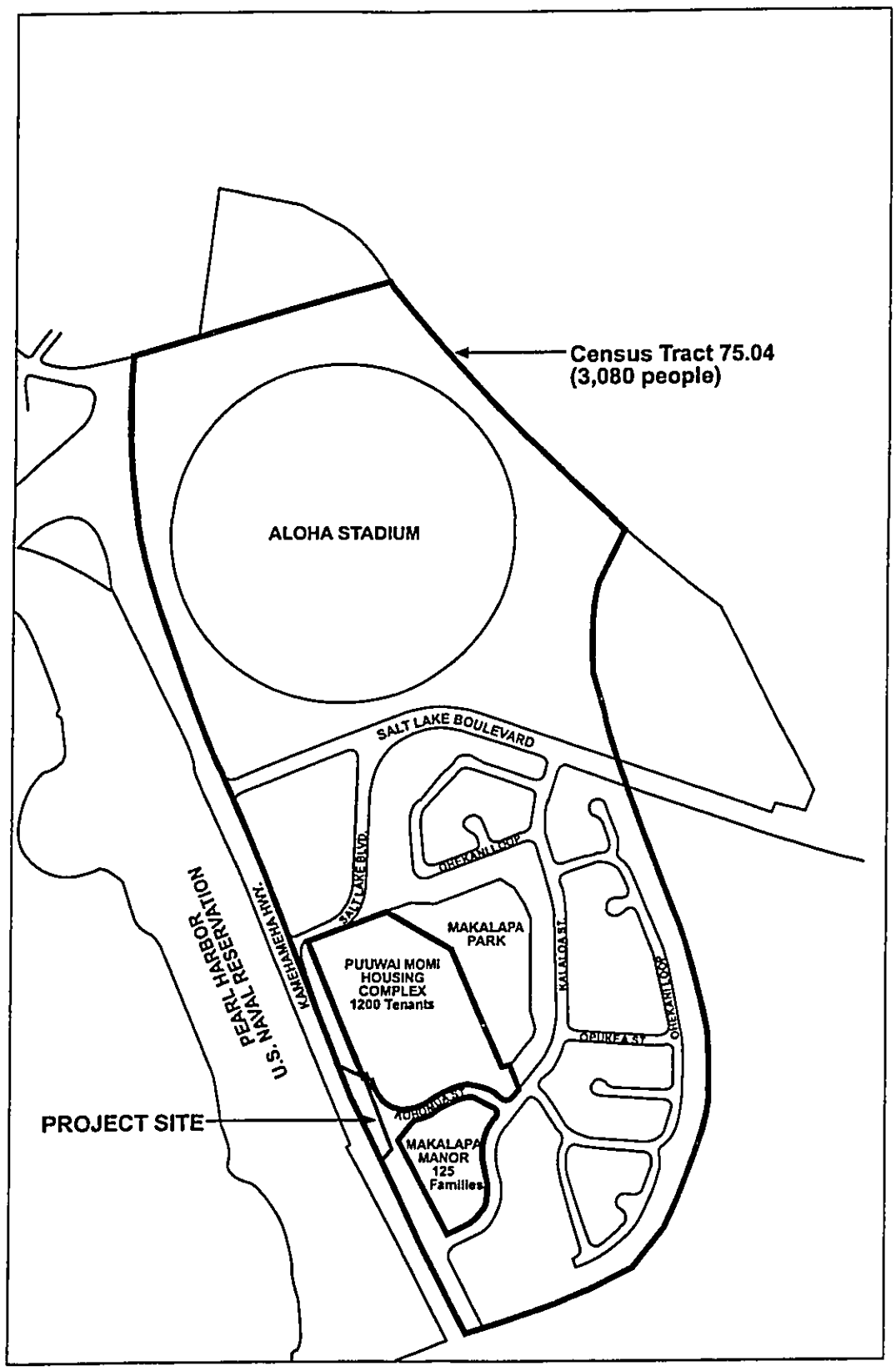


Figure 6-1 Surrounding Residential Areas

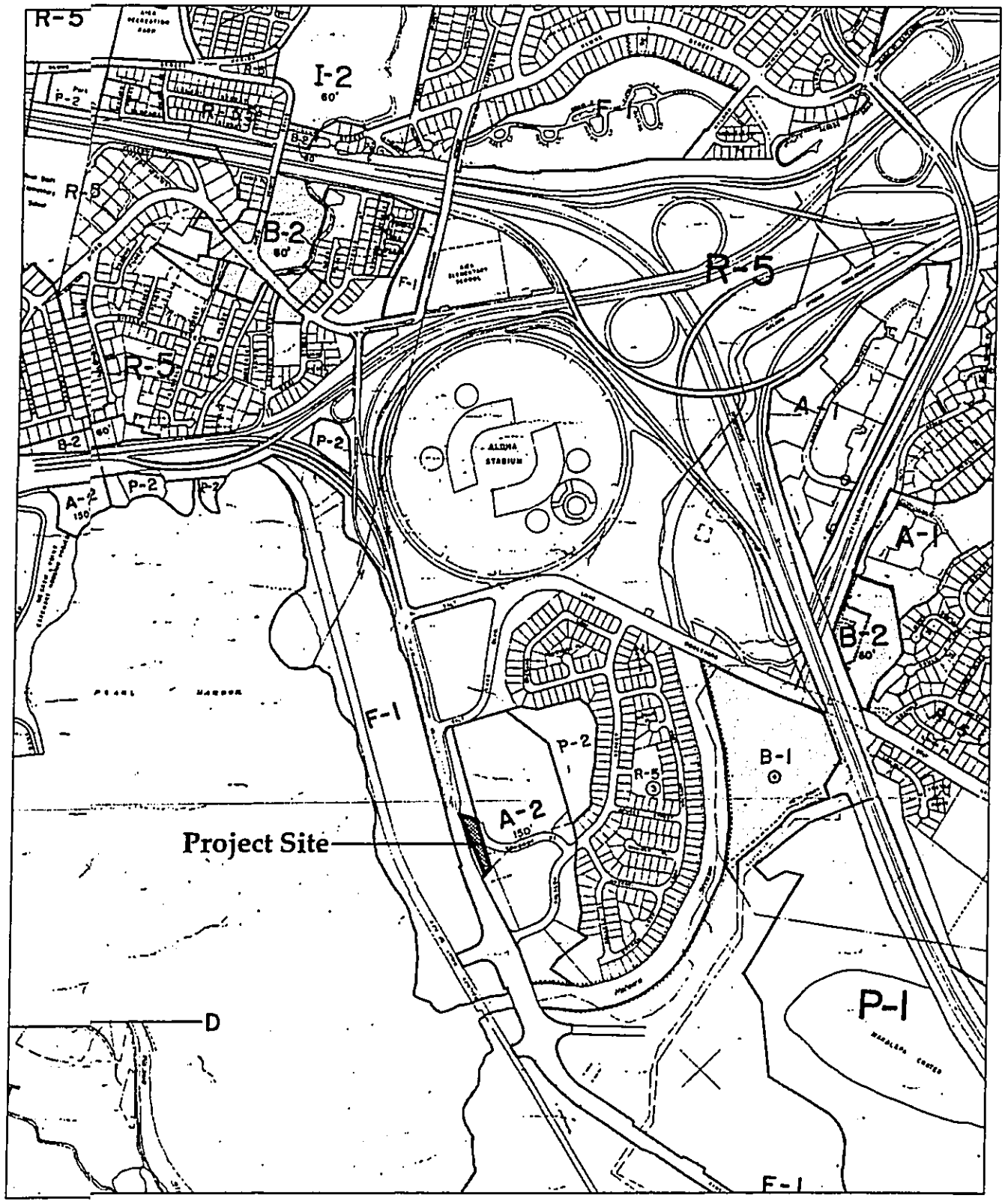
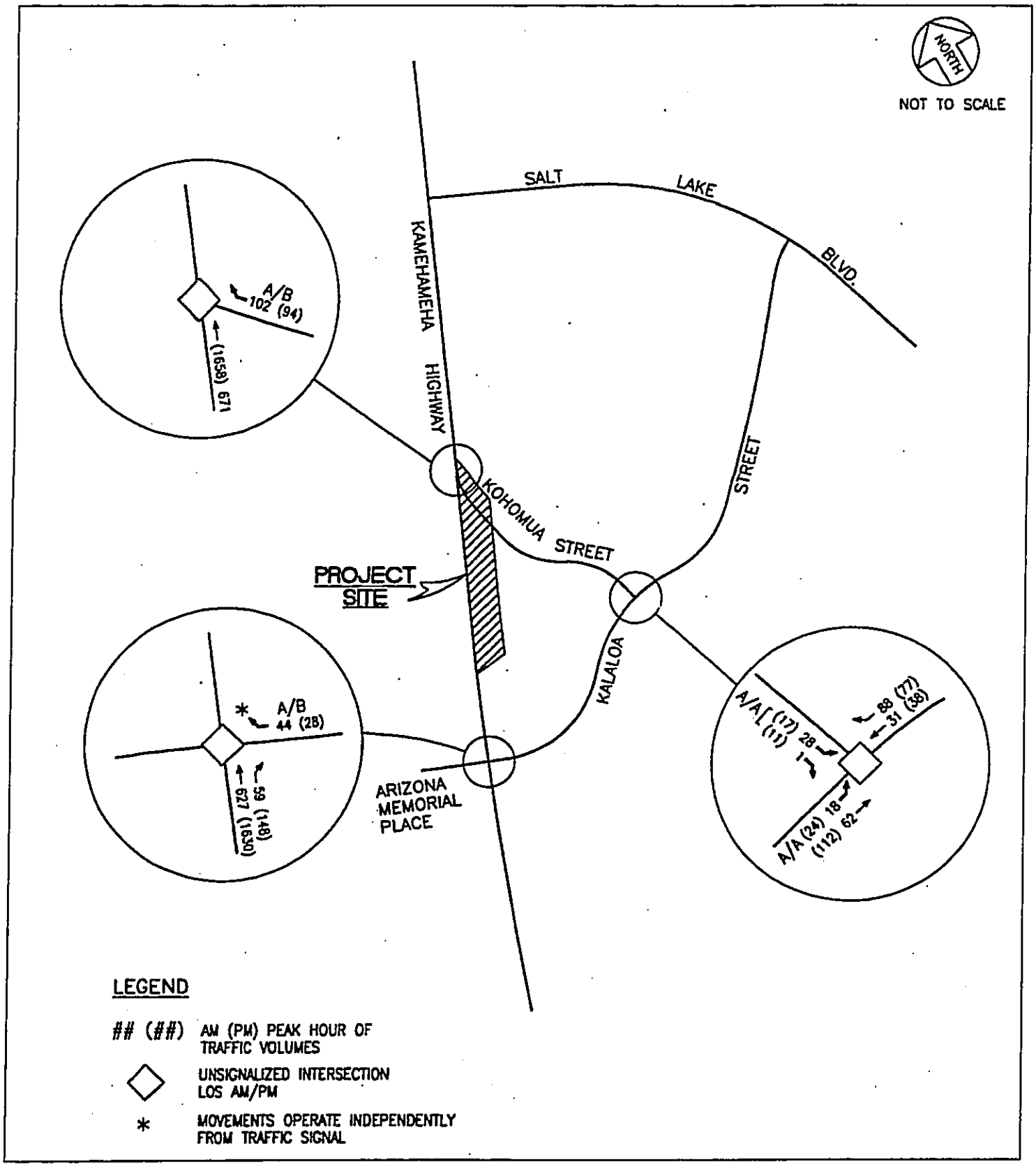


Figure 6-2 Existing Business Districts
Zoning Map No. 7 Halawa to Pearl City 1986

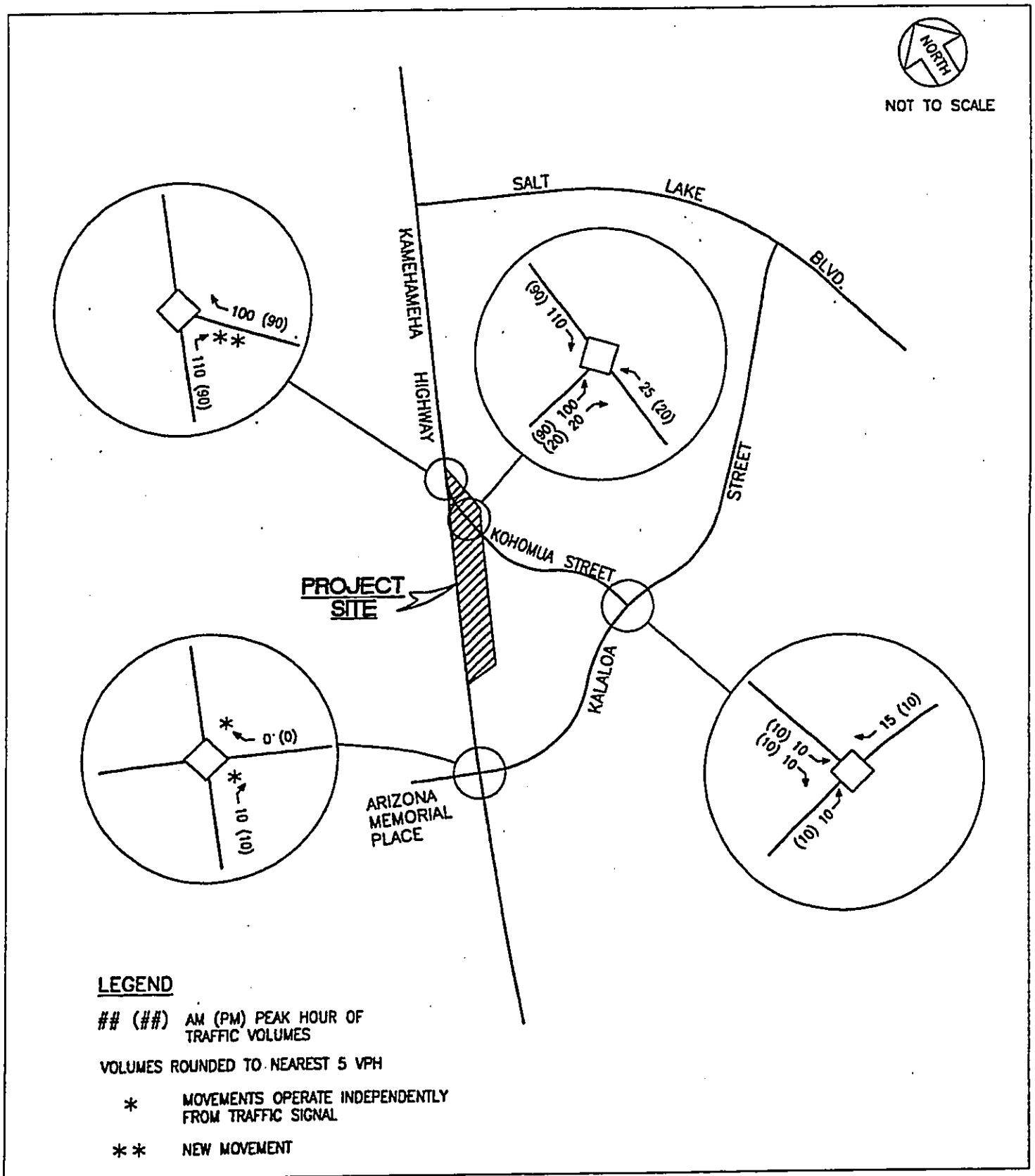
GROUP 70 INTERNATIONAL



Source: Austin, Tsutsumi & Associates, Inc. (July 2001)

Figure 6-3 Existing Traffic Volumes

GROUP 70 INTERNATIONAL



Source: Austin, Tsutsumi & Associates, Inc. (July 2001)

Figure 6-4 Project Traffic

GROUP 70 INTERNATIONAL

Section 7.0
Environmental Impacts

7.0 ENVIRONMENTAL IMPACTS

7.1 NOISE

Existing Conditions: The primary noise sources in the area of the project site are related to traffic, neighboring residential complexes, and activities at the Aloha Stadium.

The potential noise receptors near the site include the neighboring residents. The Pu'uwai Momi housing complex is across the street from the project site, a distance of about 50 to 100 feet.

Anticipated Impacts and Mitigative Measures: Construction work at the project site will involve activities that may generate an increase in noise levels. However, such exposures will be only a short-term condition, occurring during normal working hours.

State and County regulations have been established to limit construction noise generation. Compliance with existing regulations will mitigate construction noise generated by the project to acceptable levels.

The long-term operation of the retail center could create some additional traffic noise. However, any additional noise is not anticipated to be significant and no mitigative measures are required.

7.2 AIR QUALITY

Existing Conditions: Air quality on O'ahu is generally good and relatively low in pollution, except where there are large numbers of vehicles or when weather patterns create stationary air conditions.

The project site is adjacent to Kamehameha Highway and vehicles traveling on this road contribute to the air pollution levels in that area.

Anticipated Impacts and Mitigative Measures: The short-term effects on air quality during construction will be mitigated by compliance with the State Department of Health Administrative Rules, Title 11, Chapter 60 (Air Pollution Control for O'ahu) and the U.S. Soil Conservation Service's Erosion and Sediment Control Guide for Hawai'i. Potential control measures to reduce fugitive dust include frequent wetting down of loose soil areas with water, use of windscreens, covering of open-bodied trucks during materials transport, and the washing down of tires on construction equipment.

Establishment of landscaping early in the construction schedule can also help control fugitive dust. This would initially require frequent watering to carry young plants through the dry season.

If necessary, increased vehicular emissions due to disruption of peak-hour traffic by construction equipment and/or commuting construction workers can be alleviated by moving the equipment and personnel to the site during off-peak traffic hours.

Long-term air quality conditions in the area are not anticipated to change or be substantially different from existing conditions once construction is completed. No mitigative measures are considered necessary.

7.3 VISUAL

Existing Conditions: The project site is located adjacent to an urban residential neighborhood in a relatively flat area. Pearl Harbor, separated from the site by the busy Kamehameha Highway, is within 1,500 feet of the project site.

The project site is currently an undeveloped lot without landscaping used as a construction equipment storage area.

Anticipated Impacts and Mitigative Measures: The nautical and Kama'āina design of the retail center will improve the visual character of the area through design and siting measures. The building and landscaping should provide visual interest and be aesthetically appealing.

The project's scale and design will not have a significant negative impact on area views.

7.4 HISTORIC/CULTURAL ASSESSMENT

Existing Conditions: The project site is located in the Halawa Ahupua'a. According to *Sites of O'ahu*, there are two fishponds in the area. One is located at nearby Makalapa Crater and another is between Kauhua Island and the shoreline (Figure 7-1). The immediate project site is not associated with any other stories or legends and there are no known burials in the area. The project site is located near Pearl Harbor which is known as Puuloa or "long hill" in Hawaiian. Pearl Harbor has oysters and western settlers to the region gave it this name.

The area is also culturally significant because of the December 7, 1941, Japanese attack on Pearl Harbor. 2,395 men were killed when the Japanese demolished the U.S. Pacific fleet docked at Pearl Harbor. The U.S.S. Arizona is the final resting place for many of the ship's 1,177 crewmen who lost their lives during the attack. The U.S.S Arizona Memorial grew out of wartime desire to establish a memorial at Pearl Harbor to honor those who died in the attack. More than a million people visit the U.S.S. Arizona Memorial each year and many consider the area a sacred place.

The project site and the surrounding housing complexes are often referred to as "old Halawa Housing." Halawa Housing, constructed by the Navy for use as barracks during

(now called Housing and Community Development Corporation of Hawai'i). Demolition of the complex began in 1969 to make room for Aloha Stadium and federal highway improvements. Although much of the housing was dilapidated, many residents fondly remember Halawa Housing for its strong sense of community. At the time of the demolition, there was controversy over the destruction of the housing and the relocation of residents into other housing units on the island. Pu'uwai Momi and Makalapa Manor, were constructed nearby to house some of the displaced residents. The project site continues to be associated with old Halawa Housing and the sense of the community the complex represented even though there are currently no structures located on the project site.

Anticipated Impacts and Mitigative Measures: The proposed project will not significantly impact cultural resources in the area. The project site is located in a heavily urbanized area and is not associated with any significant Native Hawaiian sites. In the event that any previously unidentified sites are encountered during the site work and construction, work in the immediate area will cease. The State Historic Preservation Division and the Oahu Island Burial Council will be notified and work in the area will be suspended until further recommendations are made for appropriate treatment of cultural materials.

The nautical design of the project will compliment Pearl Harbor and the U.S.S. Arizona Memorial. No mitigation measures are considered necessary.

7.5 ARCHAEOLOGICAL

Existing Conditions: The project site has been disturbed as a result of its proximity to Kamehameha Highway. No significant archaeological features are known to exist within the project site.

Anticipated Impacts and Mitigative Measures: There are no known archaeological resources on the project site. In the event that any previously unidentified sites are encountered during the site work and construction, work in the immediate area will cease. An archaeologist from the State Historic Preservation Division will be notified and work in the area will be suspended until further recommendations are made for appropriate treatment of archeological materials.

7.6 NATURAL FEATURES

7.6.1 Water Resources

Existing Conditions: There are no water resources located in the project site. The project site is located within 1,150 feet of Pearl Harbor and within 1,100 feet of Halawa Stream.

Anticipated Impacts and Mitigative Measures: The development of the project will not significantly impact water resources in the area. Convenience stores, delis, and retail spaces are generally not large water users. The area is relatively small and irrigation volumes are expected to be small. No mitigative measures are considered necessary.

7.6.2 Flood Plains Management

Existing Conditions: The existing flood zones were reviewed using the National Flood Insurance Program, Flood Insurance Rate Map (FIRM). The project site is located outside of any designated flood area and, according to the FIRM, is within "Other Areas Zone D: Areas in which flood hazards are undetermined" (Figure 7-2).

Anticipated Impacts and Mitigative Measures: Long-term impacts of the project on flood plains management is expected to be insignificant.

7.6.3 Wetlands Protection

Existing Conditions: The project site is not located in a wetland area.

Anticipated Impacts and Mitigative Measures: There will be no impact on wetlands and no mitigative measures are required.

7.6.4 Coastal Zone Management

Existing Conditions: The project site is within 1,500 feet of Pearl Harbor and while located within the Coastal Zone Management Area, it is not within a Special Management Area. Kamehameha Highway separates the site from the coastal area.

Anticipated Impacts and Mitigative Measures: During the construction phase best management practices will be used. The completed project will include landscaping along the Pearl Harbor property line where runoff drains to an open swale. The vegetation will serve to filter the runoff. Given the low rainfall and the relatively small project site, runoff is expected to be a small amount.

7.6.5 Unique Features

There are no known unique features in the area.

7.6.6 Flora and Fauna

Existing Conditions: The project site constitutes a small parcel of land wedged between Kamehameha Highway and an urban residential neighborhood. The existing vegetation observed throughout the area consists of grass and there do not appear to be any endangered plant species.

The fauna of the project site consists of common birds and insects.

Anticipated Impacts and Mitigative Measures: No rare, endangered, or threatened plant or animal species are presently known to exist on the project site. Improvements to the project site will provide new landscaped areas, trees, and plantings, which may serve as habitat for area wildlife.

7.6.7. Open Space

Existing Conditions: The project site is located adjacent to Kamehameha Highway and an urban residential area. Makalapa Park, a small neighborhood park, is the largest area of open space in the area. The site is currently an under utilized 32,181 square foot island of fenced open space with no landscaping.

Anticipated Impacts and Mitigative Measures: Construction in the project area will eliminate a small area of open space. However, the open space is currently unattractive and not considered a neighborhood amenity. The proposed development, which is characterized by aesthetically pleasing design and landscaping, will enhance the surrounding neighborhood despite the elimination of the open space.

7.7 HAZARDS

7.7.1 Tsunami

The project site is not located in a tsunami inundation zone.

7.7.2 Nuisances and Site Safety

Existing Conditions: The proposed project will be located adjacent to Kamehameha Highway, a main thoroughfare in the area, and an urban residential area. The major site safety issue is pedestrian and vehicular safety.

Anticipated Impacts and Mitigative Measures: The traffic pattern will be redesigned with the consideration of pedestrian and vehicular safety. Elevated crosswalks will have a traffic calming influence and make pedestrians more visible.

7.7.3 Toxic Waste

Existing Conditions: There is no known toxic waste contamination on the project site. In March 2001, mercury was found at the nearby Pu'uwai Momi housing complex and across Kamehameha Highway at a former Navy pumping station. According to the Hazard Evaluation and Emergency Response Office (HARE) at the Department of Health, the mercury contamination was contained to these two sites in the area and all sites have been cleaned-up.

Anticipated Impacts and Mitigative Measures: The proposed development will not generate any toxic wastes. The March 2001 mercury contamination occurred outside the project area. No mitigative measures are considered necessary.

7.7.4 Airport Clear Zone

Existing Conditions: The project site is not located in or near a Clear Zone at a civil or military airfield nor in or near an Accident Potential Zones at a military airfield.

Anticipated Impacts and Mitigative Measures: The proposed development will not impact a Clear Zone at a civil or military airfield. No mitigative measures are considered necessary.

7.8 MAPS/FIGURES

7-1 Map of Ahupua'a
7-2 Flood Insurance Rate Map (FIRM)

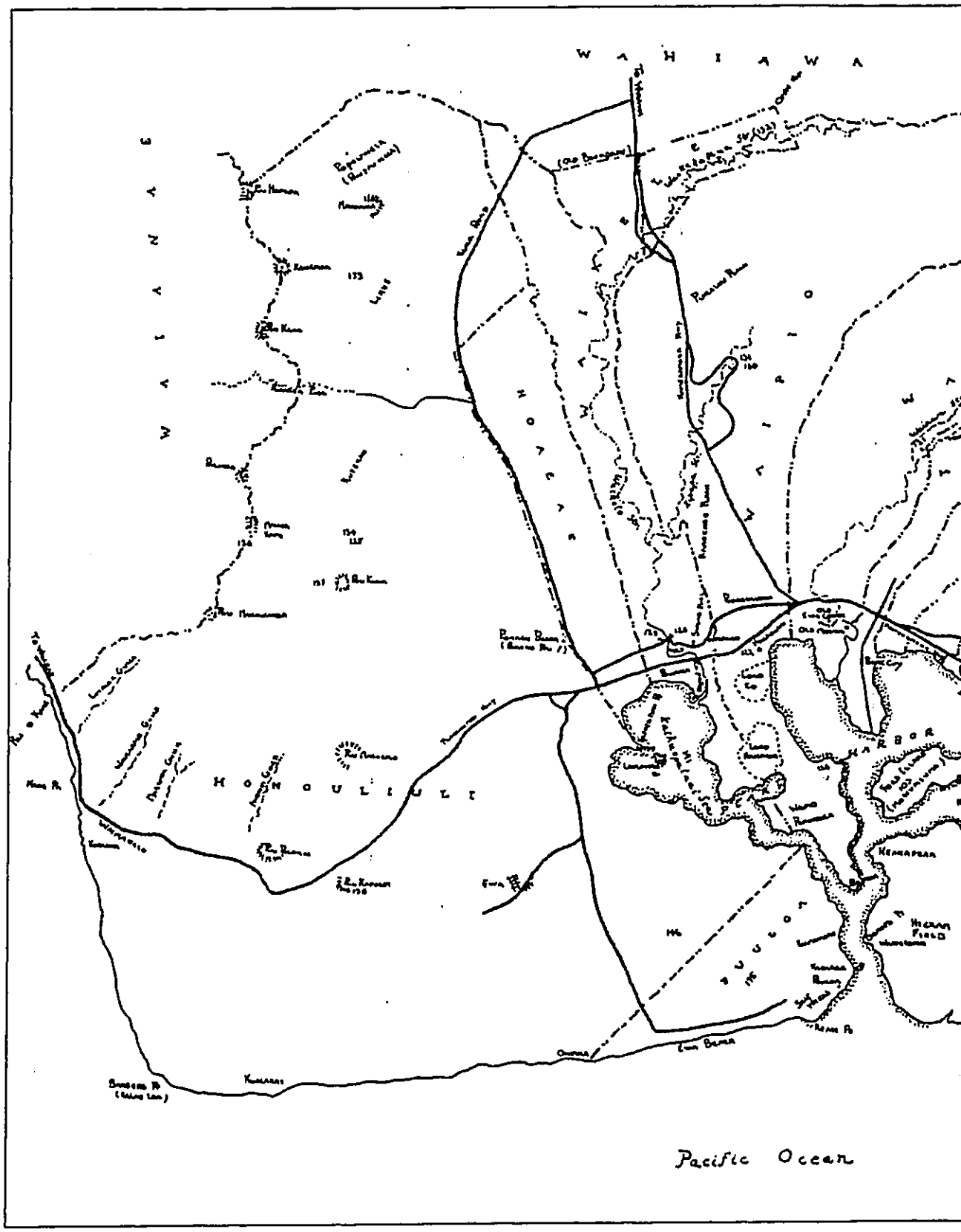
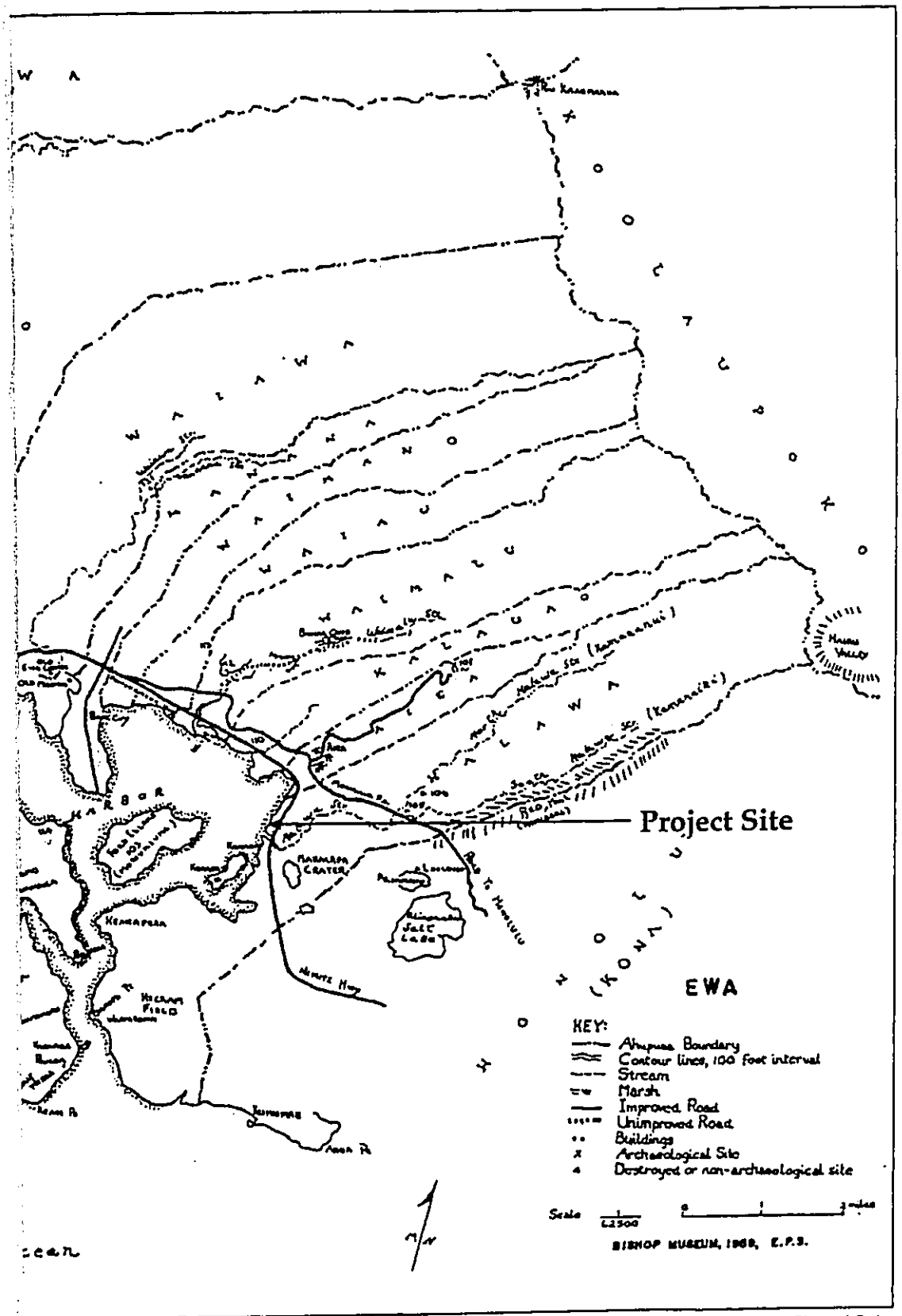


Figure 7-1 Map of Ahupua'a

Zoning Map No. 7 Halawa to Pearl City 1986



Source: Sterling & Summers, Sites of Oahu

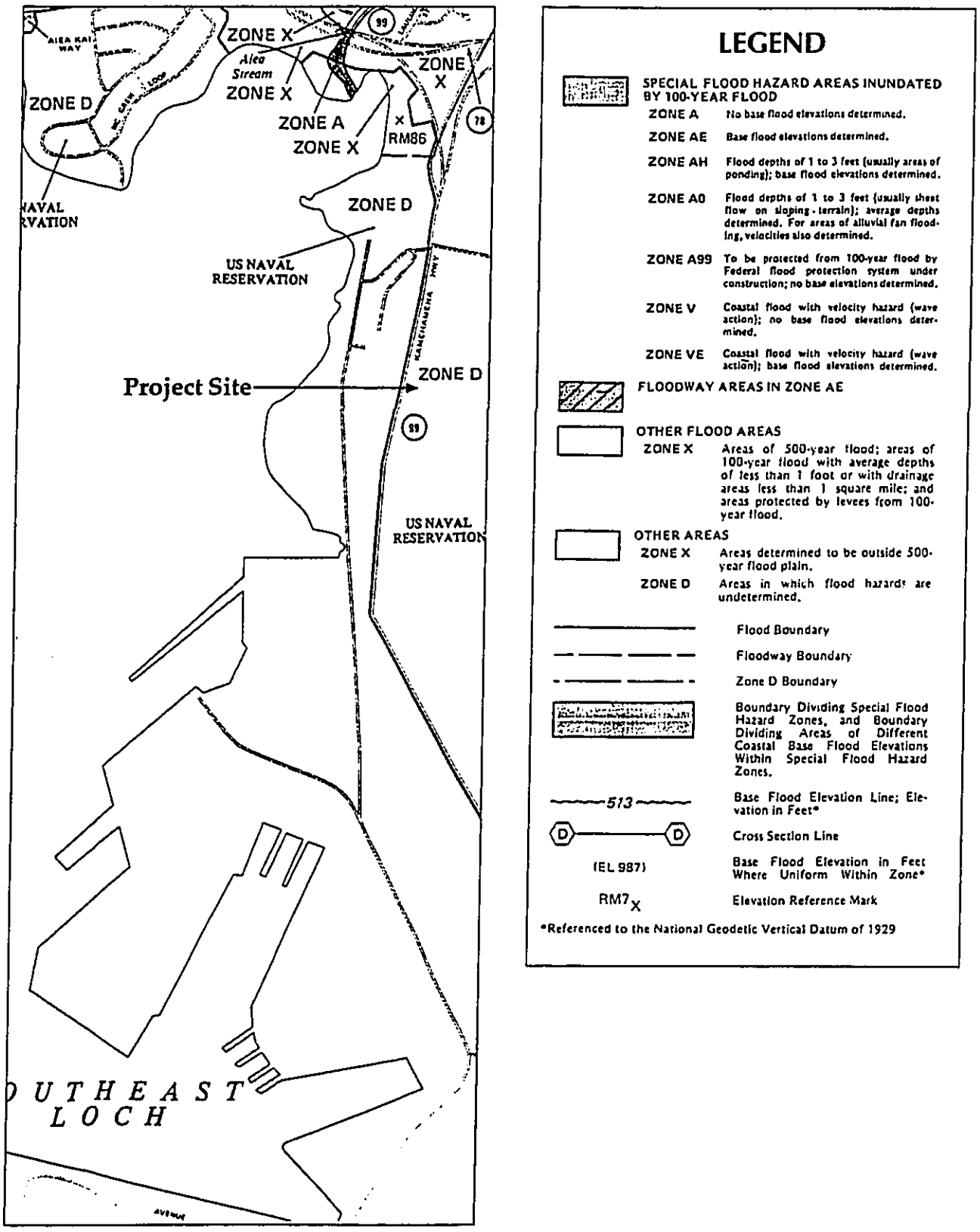


Figure 7-2 Flood Insurance Rate Map (FIRM) 150001 0110D

Zone D

Section 8.0
Alternatives to the Proposed Projects

8.0 ALTERNATIVES TO THE PROPOSED PROJECT

8.1 NO-ACTION ALTERNATIVE

The "no-action" alternative would result in the continued use of the property as a storage area for construction equipment and supplies and one-way egress from Kohomua Street to Kamehameha Highway. The nearest convenience market for the neighboring residential community would continue to be more than a quarter mile away.

In this alternative, construction of the convenience store would not occur. Although this alternative would have no adverse environmental, noise, or visual impacts, no-action at the project site would prevent additional commercial services and transportation improvements from being provided to residents and visitors in the area. In addition, the continued use of the vacant lot for storage in this urban area is not ideal. It detracts from the visual quality of the neighborhood.

8.2 SINGLE FAMILY DEVELOPMENT WITH R-5 ZONING

The area is currently zoned R-5 so this alternative would not result in any change in zoning. Single-family homes would be developed on the property. The site can accommodate between 3-5 houses under this zoning.

The single-family use would be compatible with the surrounding apartment complexes. However, it may not be desirable to develop housing at this location because of its proximity to Kamehameha Highway. Under this alternative there would be no development of commercial amenities or transportation improvements.

8.3 CONVENIENCE STORE WITH B-1 ZONING

Under this alternative, the project would be constructed as proposed under the preferred proposal. The only difference would be that the area would be rezoned to B-1. The B-1 neighborhood business district zoning is generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes. The hours of operation would be limited to 6:00 a.m. to midnight. In addition, the maximum height of the structure is restricted to 40 feet.

A benefit of this alternative would be that, by limiting the hours of operation, traffic and pedestrian noise would decrease from midnight to 6:00 a.m. However, there are several negative consequences of the B-1 zoning designation. The project site is located along a major traffic route, Kamehameha Highway and the B-1 zoning is intended for commercial property on local and collector streets. In addition, by restricting the hours of operation and the height limit to 40 feet, the property owner's ability to successfully operate a business will be reduced.

8.4 GAS STATION & CONVENIENCE STORE

A third alternative to the proposed project would be to develop the site as a gas station and convenience store.

A gas station would provide additional benefits to nearby residents and to motorists traveling along Kamehameha Highway. However, a gas station would also have more impact on the immediate neighborhood by generating a greater volume of cars and noise and traffic in the area will increase. Also, potential environmental hazards would be increased due to the potential for contamination from gas tanks and pumps. Finally, the gas station pumps may standout visually from the existing residential neighborhood.

8.5 APARTMENT DEVELOPMENT WITH A-2 ZONING

Under this alternative, medium density apartments would be developed at the project site. The surrounding area is also zoned A-2 so this would be a compatible use.

This use would be more intensive than the current use, however, and would result in additional noise and traffic in the area. In addition, the neighborhood would not benefit from commercial development or roadway improvements. Site dimensions may make this option infeasible.

8.6 EVALUATION OF ALTERNATIVES

One of the most important issue for the evaluation of alternatives is the impact each alternative will have on the character of the neighborhood. Under the "no-action" alternative, the site will remain an undeveloped vacant lot which actually detracts from the character of the neighborhood. The single-family development alternative will not negatively impact the character of the neighborhood. However, under this alternative, the no action alternative and the apartment alternative, the area would not benefit from the development of commercial services and roadway improvements. The B-1 commercial development would develop the site in an aesthetically pleasing way and add commercial amenities to the area, serving both residents and tourists. The hours of operation would be from 6:00 a.m. to midnight, limiting noise and activity during the night but also limiting motorists' and residents' access to commercial services during those hours. The gas station and the apartment alternatives both represent a higher intensity of use at the site. A gas station would increase traffic and noise to a level incompatible with the surrounding residential uses.

The proposed retail center with B-2 zoning on the other hand, balances the benefits of commercial services with the importance of maintaining the residential character of the neighborhood. The 24-hour operation of the retail store is compatible with its location on Kamehameha Highway.

Section 9.0

Findings and Reasons for Supporting Anticipated Determination

9.0 FINDINGS AND REASONS SUPPORTING ANTICIPATED DETERMINATION

9.1 ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, Hawai'i Revised Statutes (HRS), and Section 11-200-12, State Administrative Rules, Contents of Environmental Assessment, it is anticipated that the proposed action will not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated for this project.

9.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential impacts of the development and future use after construction of the Lani Properties Halawa Site Project have been fully examined and discussed in this Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the proposed action. This determination is based on the following assessments:

1. The proposed project does not involve an irrevocable loss or destruction of any natural or cultural resources. The property has been disrupted by the construction of the Kamehameha Highway. In addition, the site is being used as a construction storage area. Therefore, no significant natural resources are present.

2. The proposed project does not curtail the range of beneficial uses of the environment. The project area is situated in an extensively developed area within the City and County of Honolulu, with existing residential structures and major roadway infrastructures.

3. The proposed project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders. As previously stated, the area has been in urban development since the development of the Kamehameha Highway. Therefore, the area does not contain any significant natural resources. Any construction-related impacts of noise, dust, and emissions will be mitigated by compliance with the State Department of Health Administrative Rules.

4. The proposed project does not substantially affect the economic or social welfare of the community or State in a negative manner. It will have a positive effect on this criteria by increasing jobs and possibly reducing crime in the immediate vicinity.

5. The proposed project does not substantially affect public health. Any construction-related impacts of noise, dust and emissions would be mitigated by compliance with the State Department of Health Administrative Rules.

6. The proposed project does not involve substantial or adverse secondary impacts, such as population changes or effects on public facilities. The proposed project also does not involve a substantial degradation of environmental quality. As stated earlier, the site and its surrounding area have been extensively affected by nearby apartment structures and related roadway improvements.

7. The proposed project does not involve a substantial degradation of environmental quality.

8. The proposed project will not have a cumulatively deleterious effect upon the environment or involve a commitment to larger actions.

9. The proposed project does not substantially affect any rare, threatened or endangered species, or its habitat. The area has been extensively impacted by the development of the Kamehameha Highway and neighboring residential structures and related parking areas. Therefore, no rare, threatened or endangered species or habitats of flora or fauna is present at the site.

10. The proposed project does not detrimentally affect air or water quality or ambient noise levels. The project area is situated more than 200 meters from the shoreline of Pearl Harbor. Any construction-related impacts of noise, dust and emissions would be mitigated by compliance with the State Department of Health Administrative Rules.

11. The proposed project is not likely to suffer damages by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters.

12. The proposed project will not affect scenic vistas and viewplanes identified in County or State plans or studies. The planned improvements will not substantially affect the scenic vistas or view planes makai towards Pearl Harbor or mauka towards Halawa Heights.

13. The proposed project will not require substantial energy consumption. Construction of the project will not require substantial energy consumption relative to other similar projects.

Based on the above findings, further consideration of the project's impacts through the preparation of an Environmental Impact Statement is not warranted. A Finding of No Significant Impact (FONSI) is anticipated for this project.

Section 10.0
References

10.0 REFERENCES

City and County of Honolulu, 1983 and as amended. Comprehensive Zoning Ordinance.

Federal Emergency Management Agency, September 30, 1995. FIRM Flood Insurance Rate Map City and County of Honolulu, Panel Number 150001-0110D; Prepared for the National Flood Insurance Program.

Sterling, Elspeth P. and Catherine C. Summers: Sites of O'ahu; 1993.

The Department of Business, Economic Development and Tourism, 1997 State of Hawai'i Data Book.

United States Census Bureau, 1990 Census, Census Tract 75.04.

United States Geological Survey, Topographic Map, 1999. Pearl City Quadrant.

United States Department of Agriculture, Soil Conservation Service, January 1971. Soil Survey of the Island of O'ahu.

University of Hawai'i, Department of Geography. 1983. Atlas of Hawai'i.

Section 11.0
List of Agencies Contacted

11.0 LIST OF AGENCIES CONTACTED

11.1 AGENCIES AND PUBLIC CONTACTED IN PRE-CONSULTATION

Agencies, organizations and interested parties that were consulted in the preparation in the Draft Environmental Assessment are listed below. Comments and responses are provided in Appendix A.

DISTRIBUTION LIST	RECEIVED EANP	COMMENTS RECEIVED	RECEIVED DRAFT EA	COMMENTS RECEIVED
A. U.S. Federal Agencies				
U.S. Army Corps of Engineers – Pacific Ocean Division	X		X	X
U.S. Department of the Interior - Fish and Wildlife Service	X		X	
Naval Base Pearl Harbor, Commander	X		X	
Federal Aviation Administration	X	X	X	
B. State of Hawaii Agencies				
Department of Accounting and General Services	X	X	X	X
Environmental Health Division, DOH	X	X	X	X
Office of Environmental Quality Control	X	X	X	X
Department of Business, Economic Development & Tourism	X		X	
Office of Planning, DBEDT	X		X	
Department of Land and Natural Resources	X		X	
Historic Preservation Division, DLNR	X	X	X	X
Department of Health	X		X	
Department of Defense	X		X	
Department of Transportation	X		X	
Office of Hawaiian Affairs	X	X	X	X
University of Hawaii - Environmental Center	X		X	
University of Hawaii – Water Resources Research Center	X		X	
Housing and Community Development Corporation of Hawaii (HCDCH)	X		X	X
C. City and County of Honolulu				
Mayor Jeremy Harris	X		X	

Department of Design and Construction	X	X	X	
Department of Parks and Recreation	X		X	
Department of Planning and Permitting	X		X	
Department of Human Resources	X		X	
Department of Transportation Services	X	X	X	
Department of Environmental Services	X		X	
Department of Facility Maintenance	X		X	
Board of Water Supply	X	X	X	X
Fire Department	X	X	X	X
Police Department	X	X	X	X
Neighborhood Commission Office	X		X	
D. Other Parties				
Aiea Neighborhood Board	X		X	
Puuwai Momi Tenant Association	X		X	
Aloha Stadium Authority	X		X	
Councilman Romy Cachola	X		X	
Councilman Gary Okino	X		X	X
State Representative Bob McDermott	X		X	
State Senator Norman Sakamoto	X		X	
Makalapa Manor Community Association	X		X	
Salt Lake Neighborhood Board	X		X	
Aiea Community Association	X		X	
Aiea Public Library			X	
Foster Village Community Association			X	

In addition, Informational Presentations were made to the Community Representatives and Organizations:

Councilman Gary Okino – 3/30/01
Councilman Romy Cachola – 3/28/01
Aiea Neighborhood Board – 5/14/01
Salt Lake Neighborhood Board – 5/10/01
Aiea Community Association – Not scheduled at this time
Foster Village Community Association – Not scheduled at this time
Makalapa Manor Community Association - 4/16/01, 7/23/01
Senator Norman Sakamoto – 4/20/01

Appendix A

Pre-Consultation Comments and Responses

U.S. Department of Transportation
Federal Aviation Administration

Western-Pacific Region
Real Estate and Utilities Team, AHNL-54B

P. O. Box 50109
Honolulu, Hawaii 96850-5000

RECEIVED
APR - 5 2001
GROUP 70

April 3, 2001

Group 70 International, Inc.
Attn: Mr. George Atta, AICP
Chief Community Planner
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear M. Atta:

Your letter of March 23, 2001, requested pre-consultation comments from the Federal Aviation Administration regarding Lani Properties' proposed project to develop their Halawa Property located at TMK 9-9-03-68 and 69 in Honolulu, Oahu, Hawaii.

After review of the project location, the FAA found that there were no comments or concerns regarding the proposed project.

We appreciate this opportunity to review your proposal. Please contact me at 541-1236, if there are any questions.

Sincerely,

Darice B. N. Young
Realty Contracting Officer

GROUP 70
INTERNATIONAL

Francis S. Oda, AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hiroshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda L. Chung, AIA

Paul P. Chorney, AIA
Dean H. Kitamura, RA
Norma J. Scott, RA
George I. Atta, AICP
Jeffrey H. Overton, AICP
Kathryn A. Nam
Roy A. Inouye, AIA, CSI
Frank B. McCue, RA
Christine M. Ruotola, AICP
Stuart M. Jow, AIA

July 2, 2001

Darice B. N. Young, Realty Contracting Officer
Federal Aviation Administration
U.S. Department of Transportation
P.O. Box 50109
Honolulu, Hawaii 96850-5000

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Young:

Thank you for your letter dated April 3, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that you do not have comments or concerns regarding the proposed development.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR

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

LETTER NO (P) 1221.1

RECEIVED
MAR 30 2001
GROUP 70

APR 29 2001

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Dear Mr. Atta:

Subject: Lani Properties - Halawa Site
Pre-Consultation for Environmental Assessment

Thank you for the opportunity to review and comment on the subject project's pre-consultation information. The proposed development in Halawa does not directly impact any of our facilities, therefore, we have no comments.

If there are any questions regarding the above, please call Mr. Tyler Fujiyama of the Planning Branch at 586-0492.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:mo

GROUP 70
INTERNATIONAL

July 2, 2001

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

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Matsuoka:

Thank you for your letter dated March 29, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that the proposed development does not directly impact any of your facilities and therefore, you have no comments.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process..

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to
File

EPO

April 9, 2001

RECEIVED
APR 11 2001
GROUP 70

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Lani Properties – Halawa Site
Pre-Consultation Environmental Assessment

Thank you for allowing us to review and comment on the subject proposal. We do not have any comments to offer at this time. However, we look forward to reviewing and commenting on the Draft Environmental Assessment once that document is forwarded to our office.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

GROUP 70
INTERNATIONAL

July 2, 2001

Mr. Gary Gill, Deputy Director
Environmental Health Administration
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Gill:

Thank you for your letter dated April 9, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that you have no comments at this time.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR

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

GENEVIEVE SALMONSON
DIRECTOR

RECEIVED
APR - 5 2001
GROUP 70

April 4, 2001

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Re: Lani Properties – Halawa Site

Dear Mr. Atta,

We have received the description of the subject project provided by your letter dated March 23, 2001, and suggest the following:

1. The area of the proposed site is impacted by normal heavy traffic. Traffic impacts to surrounding business and normal traffic using this busy thoroughfare should be addressed.
2. Community input is highly advised.

We have no other comments to offer at this time, but will reserve further comments when the documents are submitted.

Should you have any questions, please feel free to call our office at 586-4185.

Yours truly,

Genevieve Salmonson
Director

GROUP 70
INTERNATIONAL

July 2, 2001

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Ms. Salmonson:

Thank you for your letter dated April 4, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments are provided below.

Traffic Impact: A traffic impact study will be included in the Draft Environmental Assessment. The proposal includes a re-configuration of the traffic pattern which will benefit surrounding businesses and residents.

Community Input: Presentations have been made to several community groups in the area including impacted neighborhood boards and resident associations. We will continue to work with the community as the project proceeds.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

April 26, 2001

George Atta, AICP
Chief Community Planner
Group 70 International
925 Bethel Street
Honolulu, Hawaii 96813

LOG NO: 27344 ✓
DOC NO: 0104EJ19

Dear Mr. Atta:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Pre- EA Consultation for
Lani Properties Halawa Site
Halawa, ʻEwa, Oʻahu
TMK: 9-9-003:068, 069

Thank you for the opportunity to provide comment for the Environmental Assessment for the Lani Properties Halawa Site. Lani Properties is seeking a zone change from R-5 to B-2 in order to develop a three-story commercial building on these parcels. Other improvements include redesigning vehicle and pedestrian circulation in the area. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas.

A review of our records shows that there are no known historic sites at this location. This area has undergone extensive modification during the re-development of Kamehameha highway, the Honolulu Stadium and the existing housing, making it highly unlikely that historic sites remain. Therefore, we believe that this action will have "no effect" on significant historic sites.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

GROUP 70
INTERNATIONAL

Francis S. Oda, AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
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Linda L. Chung, AIA

Paul P. Chorney, AIA
Dean H. Kitamura, RA
Norma J. Scott, RA
George I. Atta, AICP
Jeffrey H. Overton, AICP
Katharine A. Nam
Roy A. Inouye, AIA, CSI
Frank B. McCue, RA
Christine M. Ruotola, AICP
Susan M. Jow, AIA

July 2, 2001

Mr. Don Hibbard, Administrator,
State Historic Preservation Division
Department of Land and Natural Resources
Kahuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Hibbard:

Thank you for your letter dated April 26, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that there are no known historic sites at this location and that your office believes that this action will have "no-effect" on significant historic sites.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Environmental Services • Building Diagnostics • Asset Management
[illegible]

PHONE (808) 594-1888

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

FAX (808) 594-1865

March 30, 2001

Mr. George Atta
Chief Community Planner
GROUP 70 International
925 Bethel Street – Fifth Floor
Honolulu, HI 96813-4307

Subject: Lani Properties – Halawa Site – Pre Consultation for Environmental Assessment

Dear Mr. Atta:

Thank you for the opportunity to comment on the above referenced project. At this time, the Office of Hawaiian Affairs has no comments on the proposed project, but looks forward to the opportunity to review and comment on the Draft Environmental Assessment. If you have any questions, please contact Jerry B. Norris at 594-1847.

Sincerely,

Colin C. Kippen Jr

Colin C. Kippen, Jr.
Deputy Administrator

cc: OHA Board of Trustees
Mr. Randall Ogata, OHA Administrator

GROUP 70
INTERNATIONAL

Francis N. Oda, AIA, AICP
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Jeffrey H. Overton, AICP
Kathryn A. Nam
Roy A. Inouye, AIA, CSI
Frank B. McGee, RA
Christine M. Rudolph, AICP
Stuart M. Jow, AIA

July 2, 2001

Mr. Colin Kippen, Jr., Deputy Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Kippen:

Thank you for your letter dated March 30, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that you do not have comments at this time regarding the proposed development.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 • Fax: (808) 523-4567
Web site: www.co.honolulu.us

JEREMY HARRIS
MAYOR

RECEIVED
APR 19 2001
GROUP 70

RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

DC-686

April 17, 2001

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Lani Properties – Halawa Site
Pre-Consultation for Environmental Assessment

This is in response to your request of March 23, 2001 to review and comment on the subject matter.

It is premature to make an assessment at this time, but we would appreciate being consulted during the Environmental Assessment process.

Should there be any questions, please contact Douglas Collinson of my staff at 527-6375.

Very truly yours,

RAE M. LOUI, P.E.
Director

RML:kw

GROUP 70
INTERNATIONAL

Francis S. Oda, AIA, AICP
Norman G.Y. Hong, AIA
Sheryl D. Seaman, AIA, ASID
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Kathryn A. Sam
Roy A. Inouye, AIA, CSI
Frank B. McCue, RA
Christine M. Ruotola, AICP
Stuart M. Jou, AIA

July 2, 2001

Mr. Rae M. Loui, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Loui:

Thank you for your letter dated April 17, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that you do not have comments at this time regarding the proposed development.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4529 • FAX (808) 523-4730 • INTERNET www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

RECEIVED
APR 18 2001
GROUP 70

April 12, 2001

TPD3/01-01329R

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Lani Properties – Halawa Site

In response to your March 23, 2001 letter, the project information provided was reviewed. The draft environmental assessment should include a traffic impact study that addresses the project's impact on the character of the surrounding area and the traffic level-of-service. In addition, any proposed mitigative measures should be included in the study.

We look forward to receiving a copy of the draft environmental assessment. Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

[signature]

CHERYL D. SOON
Director

GROUP 70
INTERNATIONAL

Francis S. Oda, AIA, AICP
Norman G.Y. Hong, AIA
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Jeffrey H. Overton, AICP
Kathryn A. Nam
Roy A. Inouye, AIA, CSI
Frank B. McCue, RA
Christine M. Ruotola, AICP
Stuart M. Jow, AIA

July 2, 2001

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

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Ms. Soon:

Thank you for your letter dated April 12, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments are provided below.

Traffic Impact Study: A traffic impact study has been prepared that addresses the project's impact on the character of the surrounding area and the traffic level-of-service. Mitigative measures will be included in the Draft Environmental Assessment.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

[signature]

GEORGE ATTA, AICP
Chief Community Planner

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

April 6, 2001

RECEIVED
APR 10 2001
GROUP 70

Mr. George Atta, AICP
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Your Letter Dated March 23, 2001 Regarding Pre-Consultation for the Environmental Assessment Regarding Lani Properties Commercial Development Project at their Halawa Site, Halawa, Oahu, Hawaii, TMK: 9-9-03: 68 and 69

Thank you for the opportunity to review and comment on the proposed commercial development.

We have the following comments:

1. The existing water system is presently adequate to accommodate the proposed commercial development.
2. There are no existing services to the project site.
3. If a three-inch or larger meter is required, the construction drawings showing the installation of the water meter should be submitted for our review and approval.
4. The proposed project is subject to Board of Water Supply cross-connection control requirements prior to the issuance of the building permit application.

We reserve further comment until we review the Draft Environmental Assessment.

If you have any questions, please contact Kathryn Fujikami at 527-5221.

Very truly yours,

FOR CLIFFORD S. JAMILE
Manager and Chief Engineer

Pure Water . . . our greatest need – use it wisely

GROUP 70
INTERNATIONAL

July 2, 2001

Mr. Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Jamile:

Thank you for your letter received on April 10, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments are provided below.

Existing water system: We appreciate the comment that the system is currently adequate to accommodate our proposal.

Sewer Connections: We are aware of the lack of service connections to the site. We will install the necessary connections after permits and approvals are received.

Three-inch or larger meter: If a three three-inch or larger meter will be installed, construction drawings showing the installation of the water meter will be submitted for your review and approval.

Cross-Connection Control Requirements: It has been noted that the project is subject to Board of Water Supply cross-connection control requirements prior to the issuance of the building permit application. These controls will be installed.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process. Please call me at 523-5866 if there are additional comments or questions.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425 • HONOLULU, HAWAII 96819-1869
TELEPHONE (808) 831-7761 • FAX (808) 831-7750 • INTERNET www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

April 6, 2001

Mr. George Atta, AICP
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Lani Properties-Halawa Site
Pre-Consultation for Environmental Assessment

We received your letter dated March 23, 2001, regarding the Pre-Consultation Environmental Assessment for the Lani Properties, Halawa Site.

We have no objections to the project provided the following conditions are complied with:

1. Provide a private water system where all appurtenances, hydrant spacing, and fire flow requirements meet Board of Water Supply standards.

2. Provide a fire department access road within 150 feet of the first floor of the most remote structure. Such access shall have a minimum vertical clearance of 13 feet 6 inches, be constructed of an all-weather driving surface complying with Department of Transportation Services (DTS) standards, capable of supporting the minimum 60,000 pound weight of our fire apparatus, and with a gradient not to exceed 20%. The unobstructed width of the fire apparatus access road shall meet the requirements of the appropriate county jurisdiction. All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround having a radius complying with DTS standards.

3. Submit civil drawings to the Honolulu Fire Department for review and approval.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Sincerely,

Attilio K. Leonardi

ATTILIO K. LEONARDI
Fire Chief

AKL/KS:jo

GROUP 70
INTERNATIONAL

Francis N. Oda, AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hiroshi Hida, AIA
Roy H. Niles, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda L. Chung, AIA

Paul P. Chorney, AIA
Dean H. Katamura, RA
Norma J. Scott, RA
George J. Atta, AICP
Jeffrey H. Overton, AICP
Kathryn A. Xuan
Ron A. Iwane, AIA, CSI
Frank B. McCue, RA
Christine M. Rundola, AICP
Stuart M. Ives, AIA

July 2, 2001

Mr. Attilio K. Leonardi, Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Leonardi:

Thank you for your letter dated April 6, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments are provided below.

Private Water System: The water system design will ensure that appurtenances, hydrant spacing, and fire flow requirements meet Board of Water Supply standards.

Fire Department Access: The proposed improvements will conform to Fire Department guidelines regarding access roads.

Approval of Civil Drawings: Civil drawings will be submitted to the Honolulu Fire Department for review and approval during the design review phase.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-LS

April 4, 2001

RECEIVED
APR - 9 2001
GROUP 70

Mr. George Atta, AICP
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Thank you for the opportunity to review and respond to the pre-consultation for the Environmental Assessment for Lani Properties in the Halawa area.

The Honolulu Police Department does not object to the development of a commercial facility at the proposed site. However, we believe that there will be an increase in calls for service because of the nature of the proposal, as well as problems caused by the increased volume of vehicular traffic in the area. Therefore, we anticipate that this proposal will have a negative impact on the facilities and services of this department.

If there are any questions, please call Carol Sodetani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

By [signature]
EUGENE UEMURA, Assistant Chief
Support Services Bureau

GROUP 70
INTERNATIONAL

July 2, 2001

Mr. Lee D. Donohue, Chief of Police
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment Pre-Consultation

Dear Mr. Donohue:

Thank you for your letter dated April 4, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments are as follows:

We acknowledge your statement that the proposed development will generate an increase in calls for service and as a result, will have a negative impact on the facilities and services of the Police Department. The Draft Environmental Assessment proposes to provide space for a police workstation in order to help mitigate this concern. Additionally, the added area and street lighting is expected to improve the current situation. The site location is currently dark and attracts undesirable activities. We feel lighting and a physical presence will improve the current conditions. Furthermore, anticipated traffic problems will be mitigated by improvements to the roadway geometrics.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your input for the environmental review process. Please call me at 523-5866 if you have further comments or questions.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

[signature]
GEORGE ATTA, AICP
Chief Community Planner

Appendix B

Draft Environmental Assessment Comments and Responses

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

REPLY TO ATTENTION OF

Civil Works Technical Branch

August 27, 2001

RECEIVED
AUG 28 2001
GROUP 70

Mr. George Atta
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Lani Properties Aloha Market, Halawa, Oahu (TMK 9-9-3: 68). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project at this time.

b. The flood hazard information provided on page 7-4 of the DEA is correct.

A copy of this letter has also been furnished to Mr. Robert Reed of City and County of Honolulu, Department of Planning and Permitting, 650 South King Street, Honolulu, Hawaii 96853. Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

James Pennaz

James Pennaz, P.E.
Chief, Civil Works
Technical Branch

GROUP 70

September 18, 2001

James Pennaz, P.E., Chief
Civil Works Technical Branch
U.S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, HI 96858

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Pennaz:

Thank you for your letter dated August 27, 2001 regarding the Lani Properties-Halawa Site. Our responses to your comments are provided below.

Department of Army (DA) permit: It has been noted that a DA permit will not be required for the project at this time.

Flood hazard information: We appreciate your comment that the flood hazard information in the draft environmental assessment is correct.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

September 6, 2001

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

RECEIVED
SEP 7 2001
GROUP 70

Attention: Mr. George Atta

Gentlemen:

Subject: Your Transmittal of July 27, 2001 of the Draft Environmental Assessment for the Development Plan Land Use Amendment and Zone Change for the Lani Properties Aloha Market, Halawa, Oahu, TMK: 9-9-03: 68

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (EA) for the commercial facility.

We have no objections to the proposed project. Our previous comments of April 6, 2001 during the Draft EA pre-consultation phase are still applicable.

If you have any questions, please contact Scot Muraoka at 527-5221.

Very truly yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Department of Planning and Permitting

GROUP 70 INTERNATIONAL

September 18, 2001

Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Jamile:

Thank you for your letter dated September 6, 2001, regarding the Lani Properties-Halawa Site. We acknowledge that you have no objections to the proposed project and that your comments during the Draft Environmental Assessment pre-consultation phase are still applicable.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR

WAYNE H. KIMURA
COMPTROLLER

MARY ALICE EVANS
DEPUTY COMPTROLLER

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

(P)1521.1

AUG - 8 2001

RECEIVED
AUG 9 - 2001
GROUP 70

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Lani Properties - Halawa Site
Draft Environmental Assessment (DEA)

Thank you for the opportunity to review and comment on the subject project's DEA. The proposed development in Halawa does not directly impact any of our facilities, therefore, we have no comments.

If there are any questions regarding the above, please call Mr. Bruce Bennett of the Planning Branch at 586-0491.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

BB:mo
c: Department of Planning and Permitting

GROUP 70

September 18, 2001

Francis S. Oda
Arch D, AIA, AICP
Norman GY Hong, AIA
Sherrill B Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H Niles, AIA, CSI
James Nishimoto, AIA
Ralph E Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Min, AIA

George I. Atta, AICP
Fay P Cheney, AIA
Timothy Lee Cook, AIA, CCS
Philip T. Cuccia
Siobhan Hann
Jeremy C. Hou, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kanashiro, AIA
Dean H. Kimura
Paul B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Rudolph, AICP
Norman J. Scott
Scott Ungerman
Sharon Craig Williams, AIA

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

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Matsuoka:

Thank you for your letter dated August 8, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that the proposed development does not directly impact your facilities and you have no comments.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
File:

01-094/epo

RECEIVED
SEP 5 2001
GROUP 70

August 30, 2001

Mr. George Atta, AICP
Group 70 International
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Lani Properties, Aloha Market
TMK: 9-9-03:68

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

Wastewater Branch

There is a county sewer service system within the vicinity. Therefore, we have no objections to the proposed project as long as domestic wastewater generated is handled through connection to the county system.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning/Design Section of the Wastewater Branch at 586-4294.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

GROUP 70 INTERNATIONAL

September 18, 2001

Gary Gill, Deputy Director
Environmental Health Administration
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Gill:

Thank you for your letter dated August 30, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your comments that you have no objections provided the project connects to the county sewer service system for domestic wastewater. It is understood that the Wastewater Branch has the right to review any detailed wastewater plans.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Tel (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425 • HONOLULU, HAWAII 96819-1869
TELEPHONE (808) 831-7761 • FAX (808) 831-7750 • INTERNET www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

RECEIVED
AUG 15 2001
GROUP 70

August 13, 2001

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Lani Properties – Aloha Market
Draft Environmental Assessment
Tax Map Key: 9-9-003: 068

We received your letter dated July 27, 2001, regarding the Draft Environmental Assessment for the above-mentioned project. We have reviewed the documents and have no objections to the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Sincerely,

ATTILIO K. LEONARDI
Fire Chief

AKL/SD:jo

cc: Robert Reed, Department of Planning and Permitting

GROUP 70

September 18, 2001

Attilio K. Leonardi, Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Leonardi:

We received your letter dated August 13, 2001, regarding the Lani Properties-Halawa site. We acknowledge your statement of no objections to the project.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR

SHARYN L. MIYASHIRO
EXECUTIVE DIRECTOR

ROBERT J. HALL
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM
HOUSING AND COMMUNITY DEVELOPMENT CORPORATION OF HAWAII
677 QUEEN STREET, SUITE 300
Honolulu, Hawaii 96813
FAX: (808) 587-0600

01:PEO/1992

September 5, 2001

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Re: Draft Environmental Assessment for Lani Properties – Aloha Market

The Housing and Community Development Corporation of Hawaii (HCDCH) owns and operates the Puuwai Momi public housing project which is located adjacent to the proposed Aloha Market development. We believe the proposed project will have a significant impact on the Puuwai Momi residents, as well as HCDCH employees.

The proposed Aloha Market could provide additional job opportunities for residents of Puuwai Momi, as well as added convenience. However, the proposed project would also increase vehicular traffic on Kohomua Street and, thereby, impede accessibility to Puuwai Momi and poses a safety issue for HCDCH employees.

The Aloha Market entrance is located several yards away from the driveway to the Puuwai Momi maintenance compound. Twelve State vehicles are continuously driven in and out of the maintenance compound during working hours to conduct business at Puuwai Momi and other area project sites. In addition to the State vehicles crossing Kohomua Street to Puuwai Momi, HCDCH employees also travel by golf cart or on foot. The added traffic will make accessing the Puuwai Momi maintenance compound more difficult and dangerous.

The parking lot entrance for the 151 households at Puuwai Momi is located directly across from the Aloha Market site. The increase in traffic on Kohomua Street generated by the Aloha Market will impact the residents' accessibility to the parking lot and their units. Moreover, the proposed traffic circle at the north end of Kohomua Street may add to the traffic congestion rather than facilitate the flow of traffic.

At a community meeting held on July 23, 2001, Puuwai Momi residents expressed their strong desire to prohibit liquor sales at the Aloha Market site. They felt that easy access to alcoholic beverages would exacerbate the existing drinking and associated problems on the project premises. Additionally, residents feel that Aloha Market customers may take away public parking along Kohomua Street, which is currently used by guests of Puuwai Momi residents.

Thank you for the opportunity to provide our comments.

Sincerely,

Sharyn Miyashiro

Sharyn L. Miyashiro
Executive Director

c: Robert Reed, Department of Planning and Permitting
Robin Gapol, MU I

GROUP 70

September 18, 2001

Sharyn L. Miyashiro, Executive Director
Housing and Community Development Corporation of Hawaii
Department of Business, Economic Development and Tourism
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Ms. Miyashiro:

Thank you for your letter dated September 5, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments and concerns are as follows:

Kohomua Street safety concerns: State and other vehicles turning onto Kohomua Street may experience increased traffic volume. The timing of peak traffic and several project design features will serve to minimize any traffic impacts. The transportation study indicates that the primary impact will be during the commute hours in the morning and evening. During regular working hours, traffic impact should be minimal. The deceleration lane on Kamehameha Highway and the turn onto Kohomua Street will slow traffic considerably before it enters the residential area. Pedestrian safety will be enhanced through the use of elevated crosswalks that make the crossing areas more visible to drivers. The elevated crosswalks will also function as speed bumps to slow traffic entering from Kamehameha Highway.

Accessibility to Puuwai Momi: The overall accessibility into Puuwai Momi should be increased with the associated road revision that creates an exit from Kamehameha Highway onto Kohomua Street. During peak traffic periods, vehicles may need to pause before entering the Puuwai Momi parking lot, however, the time saved by using the new exit should exceed the time spent traveling along the longer current access from Kalaloa Street.

Access to alcoholic beverages: While concerns about liquor sales have been expressed, the issue is premature. The application is for a convenience store and commercial zoning. Liquor sales, if pursued will be pursued during permits that will be needed from the Liquor Commission. At this time it is not clear if the project's feasibility may be jeopardized if alcoholic beverages cannot be sold at the site. The sales from customers going to Aloha Stadium events may be an important economic component and could be greatly diminished if alcoholic beverages are not available for sale.

Public street parking: The proposed project meets the code requirements for the number of parking spaces needed. Customers at the market should not have a need to park on the street and therefore should not impact the public street parking situation.

We appreciate your acknowledgement that the proposed project could provide additional job opportunities for residents of Puuwai Momi and added convenience.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

Group 70 International Inc • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

PHONE (808) 594-1888

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

FAX (808) 594-1865

August 6, 2001

Mr. George Atta
Chief Community Planner
Group 70 International
925 Bethel Street – Fifth Floor
Honolulu, HI 96813-4307

SUBJECT: Application for Development Plan Land Use Amendment and Zone Change - Lani Properties – Aloha Market

Dear Mr. Atta:

Thank you for the opportunity to comment on the above referenced project, which is seeking a zone change from R-5 to B-2 in order to develop a three-story commercial building. The Office of Hawaiian Affairs has the following concerns:

In the Historic/Cultural Assessment and the Archaeological sections (page 7-3) please amend the language to reflect that both the State Historic Preservation Division and the Oahu Island Burial Council must be informed if previously unidentified sites are encountered during construction.

If you have any questions, please contact Jerry B. Norris at 594-1847.

Sincerely,

Colin C. Kippen Jr.

Colin C. Kippen, Jr.
Deputy Administrator
Hawaiian Rights Division

cc: OHA Board of Trustees
Mr. Clyde Namu'o, OHA Administrator

September 18, 2001

Colin C. Kippen, Jr., Deputy Administrator
Hawaiian Rights Division
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Kippen:

Thank you for your letter dated August 6, 2001, regarding the Lani Properties-Halawa Site. We will amend the language in the Historic/Cultural Assessment and the Archaeological sections to note that both the State Historic Preservation Division and the Oahu Island Burial Council must be informed if previously unidentified sites are encountered during construction.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

August 6, 2001

George Atta, AICP
Chief Community Planner
Group 70 International
925 Bethel Street
Honolulu, Hawaii 96813

LOG NO: 27968
DOC NO: 0108EJ05

Dear Mr. Atta:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Draft Environmental Assessment (DEA) Consultation for Lani Properties Halawa Site: Application for Development Plan Land Use Amendment and Zone Change
Halawa, `Ewa, O`ahu
TMK: 9-9-003:068, 069

Thank you for the opportunity to review the DEA and Application for Development plan land use amendment and zone change for the Lani Properties Halawa Site. Our earlier comments are included in Appendix A of the DEA: '... this area has undergone extensive modification during the re-development of Kamehameha highway, the Honolulu Stadium and the existing housing, making it highly unlikely that historic sites remain, and that we believe that this action will have "no effect" on significant historic sites.'

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

GROUP 70

Francis S. Oda, Arch D., AIA, AICP
Norman Gy Hong, AIA
Sheryl B Seaman, A.A., ASID
Hiroshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Mah, AIA

George I. Atta, AICP
Paul P. Cheney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutchin Halm
Jeremy C. Hay, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kimura
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nash
Jeffrey H. Overton, AICP
Christine M. Rucinski, AICP
Norma J. Scott
Scott Tangaran
Sharon Chang-Williams, AIA

September 18, 2001

Don Hibbard, Administrator
Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
Kahuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Hibbard:

Thank you for your letter dated August 6, 2001, regarding the Lani Properties-Halawa Site. We acknowledge your statement that it is highly unlikely that historic sites exist at this location and that your office believes that this action will have "no-effect" on significant historic sites.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF
MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-KP

August 27, 2001

RECEIVED
SEP 4 2001
GROUP 70

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for Lani Properties - Aloha Market. We do not object to the proposal, however, we have the following concerns and comments.

In spite of any mitigation measures, complaints relative to construction-related dust, noise, and traffic will generate calls for police service to the area.

After the project is occupied and becomes operational, there will be an increase in vehicular traffic to the area. Further, because this is going to be a 24-hour operation, it is presumed that it will attract customers at all hours. Therefore, these factors will more than likely cause an increase in the number of calls for police service to the area.

It is noted that there is provision in the development proposal for a police workstation within the complex. The developer should be advised of the possibility that the Honolulu Police Department may not be in a position to accept nor staff this office if and when it is offered.

Provided that the proposal to elevate the crosswalk is approved by the appropriate agencies, we have no objection to this design.

If there are any questions, please call Ms. Carol Sodetani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

By
EUGENE UEMURA
Assistant Chief of Police
Support Services Bureau

cc: Mr. Robert Reed
Department of Planning and Permitting

GROUP 70
INTERNATIONAL

September 18, 2001

Lee D. Donohue, Chief of Police
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Donohue:

Thank you for your letter dated August 27, 2001 regarding the Lani Properties-Halawa Site. We acknowledge that you do not object to the proposal and our responses to your comments and concerns are as follows:

Increase in police service calls: During the building process, the developer will use all appropriate mitigation measures to minimize possible construction-related dust, noise and traffic. The area is currently dimly lit. We hope the increased lighting will make the area less attractive for potential criminal elements. If the operation becomes a 24 hour establishment, we will have two person teams working during evening and early morning shifts to increase safety and deter unwanted activity. We also believe the potential police presence in this facility will deter crime even if the room is only used as a temporary stop.

After the project is operational, the orientation of the project toward Kamehameha Highway will provide a clear view of the establishment to deter potential unwanted activities. Landscaping and lighting will preserve the site lines from the highway, parking lot and adjacent building.

Police office space: We understand that the Honolulu Police Department may not be able to accept or staff the second floor office. The plans will proceed with this space reserved for this potentiality.

We appreciate your comment that you have no objection to the elevated crosswalk design if appropriate agencies approve.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process. Please call me at 523-5866 if you have further comments or questions.

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

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BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

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

September 6, 2001

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawai'i 96813

Dear Mr. Fujiki:

Subject: Draft Environmental Assessment for Lani Properties-Aloha Market Project, O'ahu

Thank you for the opportunity to review and comment on the subject project. We have the following comments.

1. Please describe past uses of the property. Based on an analysis of previous uses of the site, is there a potential that the site may be contaminated with hazardous materials? If so, please investigate the site for hazardous materials.

2. The entire state is classified as a coastal management area. Please discuss how the project meets the objectives and policies of the Coastal Zone Management listed under section 205A-2, HRS.

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

Sincerely,

Genevieve Salmonson
Director

c: Group 70

GROUP 70

September 18, 2001

Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Ms. Salmonson:

With reference to your letter dated September 6, 2001 to Mr. Randall K. Fujiki, regarding the Lani Properties-Halawa Site we provide the following responses to your comments and concerns:

Past property uses: Over the past 40 years the original owner was the State of Hawaii who possessed the property as part of a larger parcel containing Halawa Housing and a road. When the road alongside the housing was to become Kamehameha Highway, the decrepit housing was taken down, Kamehameha Highway was built, and the project site property remained as a highway remnant. St. Paul Evangelical Church purchased the land from the State and planned to build a church on the property. During this tenure an extension of Kohomua Street that connects to Kamehameha Highway was built without the owner's permission. The church was never built on the property, and in 1992 R C J Corporation purchased the property. As noted in the draft Environmental Assessment, the site is currently being used as a storage area and an egress route connecting Kohomua Street to Kamehameha Highway. As stated in the draft Environmental Assessment in section 7.7.3, Toxic Waste, mercury contamination occurred nearby in March of this year. The contamination was contained on two other sites that have been cleaned-up. Based on the past uses of the property the determination is that the site does not have potential hazardous waste contamination.

Coastal Zone Management (CZM) objectives and policies: As noted in your letter, all property in the state is classified as a coastal management area. However, the project site is not located within a Special Management Area. The project is consistent with CZM objectives and policies. The third floor observation deck will open up opportunities to view the harbor to area residents and visitors. Improved landscaping will beautify the landscape and improve the aesthetic quality of the area. In addition, the project will continue to protect the coastal ecosystem from runoff. During the construction phase best management practices will be used. The completed project will include landscaping along the Pearl Harbor property line where runoff drains to an open swale. The vegetation will serve to filter the runoff. Given the low rainfall and the relatively small project site, runoff is expected to be a small amount.

The final environmental assessment will be amended with this information. Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

CITY COUNCIL

CITY AND COUNTY OF HONOLULU

HONOLULU, HAWAII 96813-3065 / TELEPHONE 547-7000

GARY H. OKINO
COUNCILMEMBER, DISTRICT VIII
CHAIR, PARKS & PUBLIC WORKS COMMITTEE
TELEPHONE (808) 547-7008
FACSIMILE (808) 523-4220

September 7, 2001

GROUP 70

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307
Attn: George Atta

Re: Draft Environmental Assessment - Comments
Lani Properties - Aloha Market

This is to request that the following issues, questions or concerns relating to the development of the proposed Aloha Market be addressed in the Environmental Assessment.

1. Does the Conceptual Roadway Circulation Plan proposed for this development conform with standard City & State roadway design guidelines? Can more detailed plans of this Roadway Circulation Plan be provided? Have both DTS and DOT approved these plans?

2. It is my understanding that the U.S. Navy at one time was considering a "fly-over" ramp to facilitate north-bound Kamehameha Highway vehicular access to the Ford Island Bridge roadway. This "fly-over" may directly impact the subject property. Has the U.S. Navy reviewed these plans for potential conflicts with this proposed development?

3. Is there adequate space for the proposed 24 parking stalls? What will be the size of these stalls?

4. The City is currently considering the development of a Bus Rapid Transit (BRT) transit center and park-and-ride on the Aloha Stadium overflow parking lot area along Kamehameha Highway. Does the proposed project affect plans for the BRT facility?

5. What is the proposed use of the smaller "developable area" at the "mauka" end of the property adjacent to the Aloha Stadium parking lot?

Thank you for this opportunity to comment and provide input.

Sincerely

Gary H. Okino
Councilmember, District VIII

GROUP 70

September 18, 2001

Gary H. Okino, Councilmember District VIII
City Council
City and County of Honolulu
Honolulu, Hawaii 96813-3065

Subject: Lani Properties-Halawa Site
Draft Environmental Assessment

Dear Mr. Okino:

Thank you for your letter dated September 7, 2001, regarding the Lani Properties-Halawa Site. Our responses to your comments and concerns are as follows:

Conceptual Roadway Circulation Plan: Discussions were held with the City and County of Honolulu Department of Transportation Services and the State Department of Transportation. They are aware of the roadway circulation plans, and the plans conform to standard City and State roadway design guidelines. If the project is approved, the plans will then be finalized. For more details of the proposed roadway circulation plan, please see Appendix B for the complete Traffic Impact Analysis Report.

Possible US Navy "Fly-over" ramp: The Navy is still looking at various Ford Island development scenarios. According to the Draft Ford Island Development Programmatic EIS, the highest intensity alternative would need an under pass for north bound Kamehameha Highway traffic turning left on to Ford Island Boulevard. The additional widening would begin north of the Kohomua Street and Kamehameha Highway intersection, and would not conflict with the proposed project.

Parking spaces: There is adequate space for the 24 parking stalls. Based on preliminary square footage and projected uses, this should meet on site parking requirements. Each parking stall will be at least 8 feet by 18 feet as per the Land Use Ordinance (LUO).

Proposed Bus Rapid Transit (BRT) center/park-and-ride: The proposed project does not affect any plans for the BRT facility. The proposed Aloha Market project is adjacent to Stadium Authority land, however it is not land included in the area for the proposed BRT center/park-and-ride. The area for the BRT project is separated from other land parcels on both sides by Salt Lake Boulevard.

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Future use of remnant property area: The remnant property area on the Aloha Stadium end of the project has no planned use at the present time.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your input for the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

George Atta

GEORGE ATTA, AICP
Chief Community Planner

Group 70 International, Inc. • Architecture • Planning • Interior Design • Building Diagnostics • Assets Management • Environmental Services
925 Bethel Street, 5th Floor • Honolulu, Hawaii 96813-4307 • Ph (808) 523-5866 • Fax (808) 523-5874 • www.group70int.com • mail@group70int.com

Appendix C

Aloha Market Traffic Impact Analysis Report, Austin, Tsutsumi, and Associates, Inc. (July 2001)

ALOHA MARKET
TRAFFIC IMPACT ANALYSIS REPORT
Halawa, Oahu, Hawaii

July 2001

Prepared for:

Lani Properties

Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Summer Street, Suite 521
Honolulu, Hawaii 96817-5031
Telephone: (808) 533-3646
Facsimile: (808) 526-1267
Honolulu • Wailuku, Hawaii

ALOHA MARKET

TRAFFIC IMPACT ANALYSIS REPORT

Halawa, Oahu, Hawaii

Prepared for

Lani Properties

Prepared by

Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors
Honolulu • Wailuku, Hawaii

July 2001

TABLE OF CONTENTS

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(Cont'd)

AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS
CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

TED S. KAWAHIGASHI, P.E., FACEC
KENNETH K. KUROKAWA, P.E.
DONOHUE M. FUJII, P.E.
STANLEY T. WATANABE
TERRANCE S. ARASHIRO, P.E.
MERNA S. KIBE

TRAFFIC IMPACT ANALYSIS REPORT

ALOHA MARKET

I. INTRODUCTION

Lani Properties proposes to develop Aloha Market which will include a convenience store, a deli/take out counter, retail shop (or museum) and a police workstation. In addition, a right turn access from Kamehameha Highway to Kohomua Street is also proposed as part of the development plan. Presently Kohomua Street has a right turn only access to northbound Kamehameha Highway.

A. Purpose and Scope

The purpose of this study is to identify and assess the traffic impacts resulting from the proposed Aloha Market.

B. Project Location

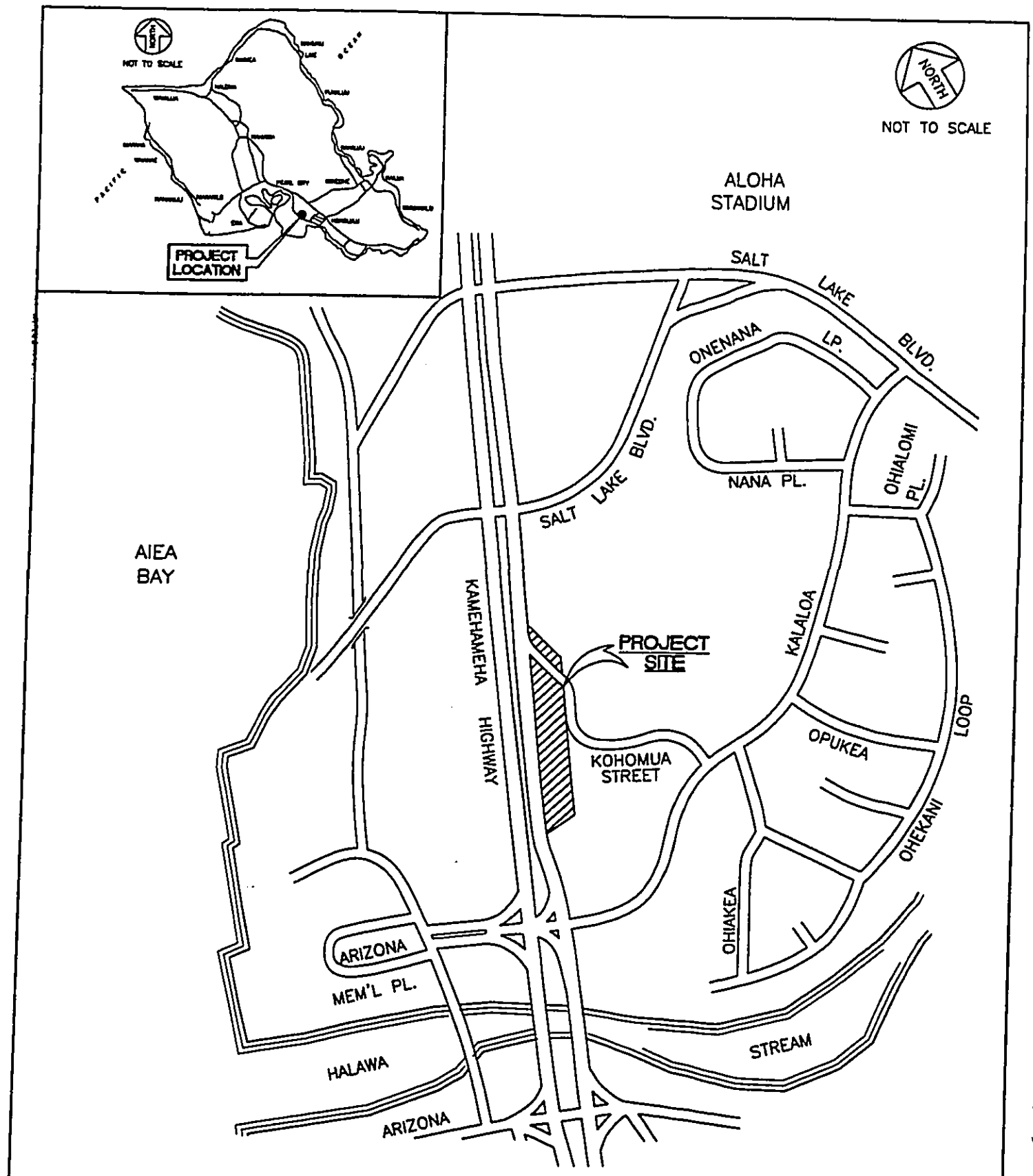
The project site is located in the Halawa area on the island of Oahu on TMK: 9-9-03: parcels 68 and 70. The project site is bounded by Kamehameha Highway and Kohomua Street as shown in Figure 1.

C. Project Description

The Aloha Market will be a three-story building and will consist of the following active land uses listed in Table 1. Passive land uses such as storage, restrooms, observation decks, and seating areas are not listed, as they do not contribute to generation of vehicular traffic.

REPLY TO:
501 SUMNER STREET, SUITE 521 • HONOLULU, HAWAII 96817-5031
PHONE (808) 533-3646 • FAX (808) 526-1267 • EMAIL: atahni@atahawaii.com

OFFICES IN:
HONOLULU, HAWAII
WAILUKU, MAUI, HAWAII



ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	LOCATION MAP	1

FN: 00-058.2

Table 1
ALOHA MARKET

Land Use	Gross Floor Area (square feet)
Convenience Store	3,000
Deli/Take Out counter	636
Museum or Retail Shop	1,120
Police Workstation	240

II. EXISTING CONDITIONS

A. Roadways

Kamehameha Highway is the major north-south arterial in the vicinity of the project. Kamehameha Highway links the airport/Mapunapuna area to Pearl City. In the vicinity of the project site, Kamehameha Highway is a two-way divided roadway with two lanes in the northbound direction and three lanes in the southbound direction. The posted speed limit on Kamehameha Highway is 35 miles per hour (mph).

Kalaloa Street is an east-west collector road that connects Kamehameha Highway to Salt Lake Boulevard. Kalaloa Street begins directly across of Arizona Memorial Place and ends at Salt Lake Boulevard. Kalaloa Street is a two-way, two-lane road with a posted speed limit of 25 mph.

Kohomua Street is residential two-way, two-lane road that connects Kalaloa Street to Kamehameha Highway. Presently, Kohomua Street has a right turn only access to northbound Kamehameha Highway.

B. Intersections

The geometric layouts of the key intersections included in the study are described below.

- Kamehameha Highway/Kalaloa Street

  Kamehameha Highway intersects Kalaloa Street forming a signalized cross-intersection with restricted movements. At this intersection, turn movements to and from Kalaloa Street are restricted to

a right-turn in and right-turn out operation, which operate independently from the traffic signal system. The northbound Kamehameha Highway right-turn movement is controlled by yield sign has a right-turn deceleration lane on Kamehameha Highway. The westbound Kohomua Street right-turn movement is also controlled by a yield sign and has an acceleration lane on Kamehameha Highway.

- Kalaloa Street/Kohomua Street

  Kalaloa Street intersects Kohomua Street forming an unsignalized "Tee"-intersection with Kohomua Street forming the stem of the "Tee." Traffic on Kohomua Street is controlled by a stop sign. All approaches at this intersection consist of single shared traffic lanes.

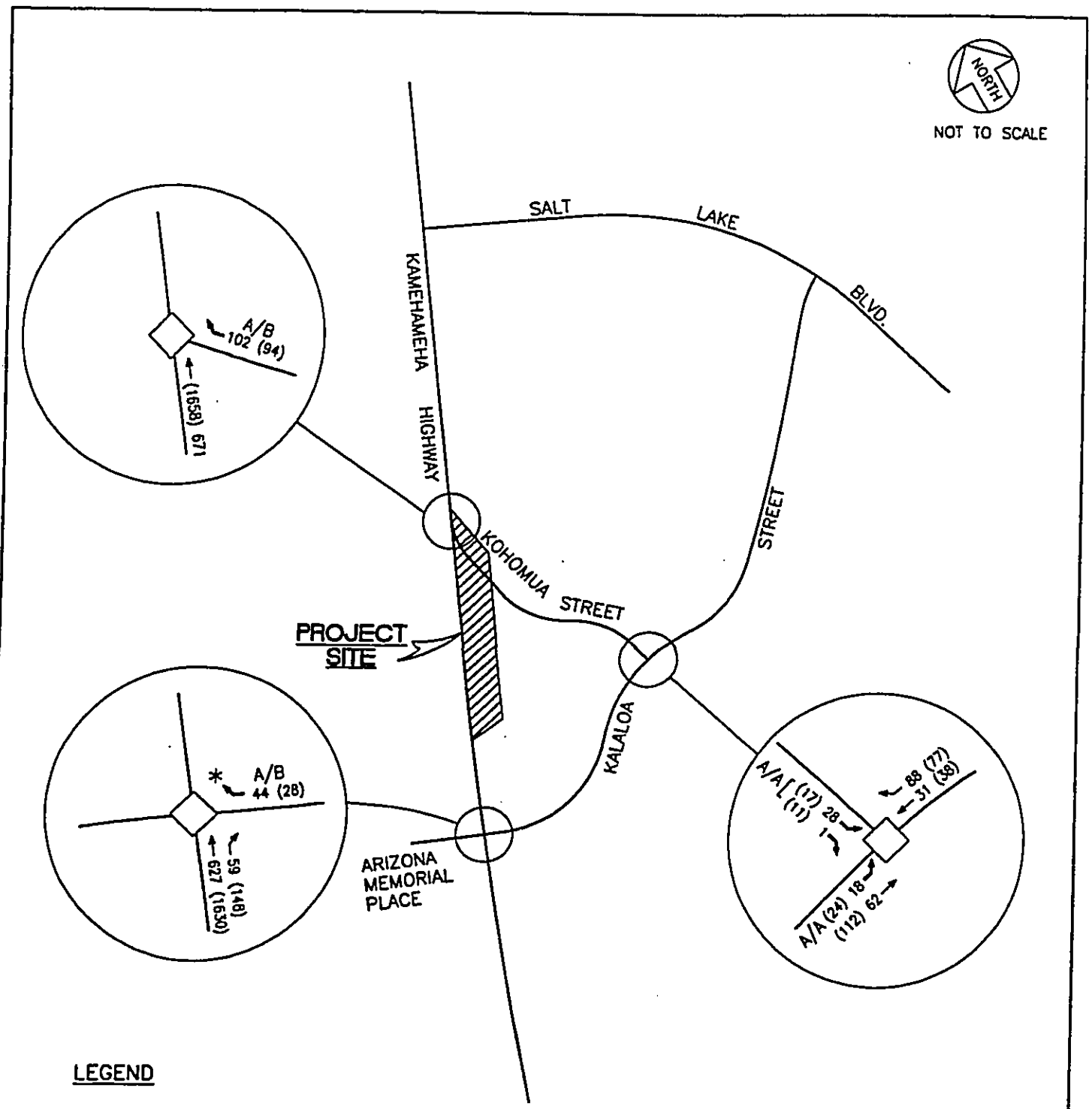
- Kamehameha Highway/Kohomua Street

  Presently, Kohomua Street connects to Kamehameha Highway allowing right-turn movements to northbound Kamehameha Highway. The Kohomua Street approach is controlled by a yield sign and has a right-turn acceleration lane on Kamehameha Highway.

C. Traffic Conditions

Peak hour traffic volumes at intersections in the vicinity of the project were documented through manual traffic counts and analyzed using procedures outlined in the 1994 *Highway Capacity Manual*. Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow ranging from free-flow conditions, LOS A, to congested conditions, LOS F. The descriptions of LOS for signalized and unsignalized intersections are provided in Appendix A.

Manual traffic counts were taken during the weekday morning and afternoon peak periods at the Kamehameha Highway/Kalaloa Street intersection and the Kalaloa Street/Kohomua Street intersection. A machine counter was used to record the traffic volumes from Kohomua Street to northbound Kamehameha Highway on May 15. According to the traffic count data, the morning (AM) peak hour of traffic on northbound Kamehameha Highway occurs from 7:15 AM to 8:15 AM and the afternoon (PM) peak hour of traffic occurs from 3:30 PM to 4:30 PM. Figure 2 displays the existing weekday peak hour traffic volumes. The results of the intersection analyses are described in detail below.



ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	EXISTING TRAFFIC VOLUMES	2

FN: 00-059.2

- Kamehameha Highway/Kalaloa Street

  The westbound Kalaloa Street right-turn movement was analyzed as an unsignalized movement as it is independent from the traffic signal operation. The westbound Kalaloa Street right-turn movement operates at LOS A during the AM peak hour of traffic and at LOS B during the PM peak hour of traffic.

- Kalaloa Street/Kohomua Street

  The Kalaloa Street/Kohomua Street unsignalized intersection operates at LOS A during the AM and PM peak hours of traffic. All critical movements at this intersection also operate at LOS A during the AM and PM peak hours of traffic.

- Kamehameha Highway/Kohomua Street

  Presently, Kohomua Street connects to Kamehameha Highway allowing right-turn movements to northbound Kamehameha Highway. Analysis of this movement as an unsignalized intersection revealed that it operates at LOS A during the AM peak hour of traffic and at LOS B during the PM peak hour of traffic

III. YEAR 2003 WITHOUT PROJECT

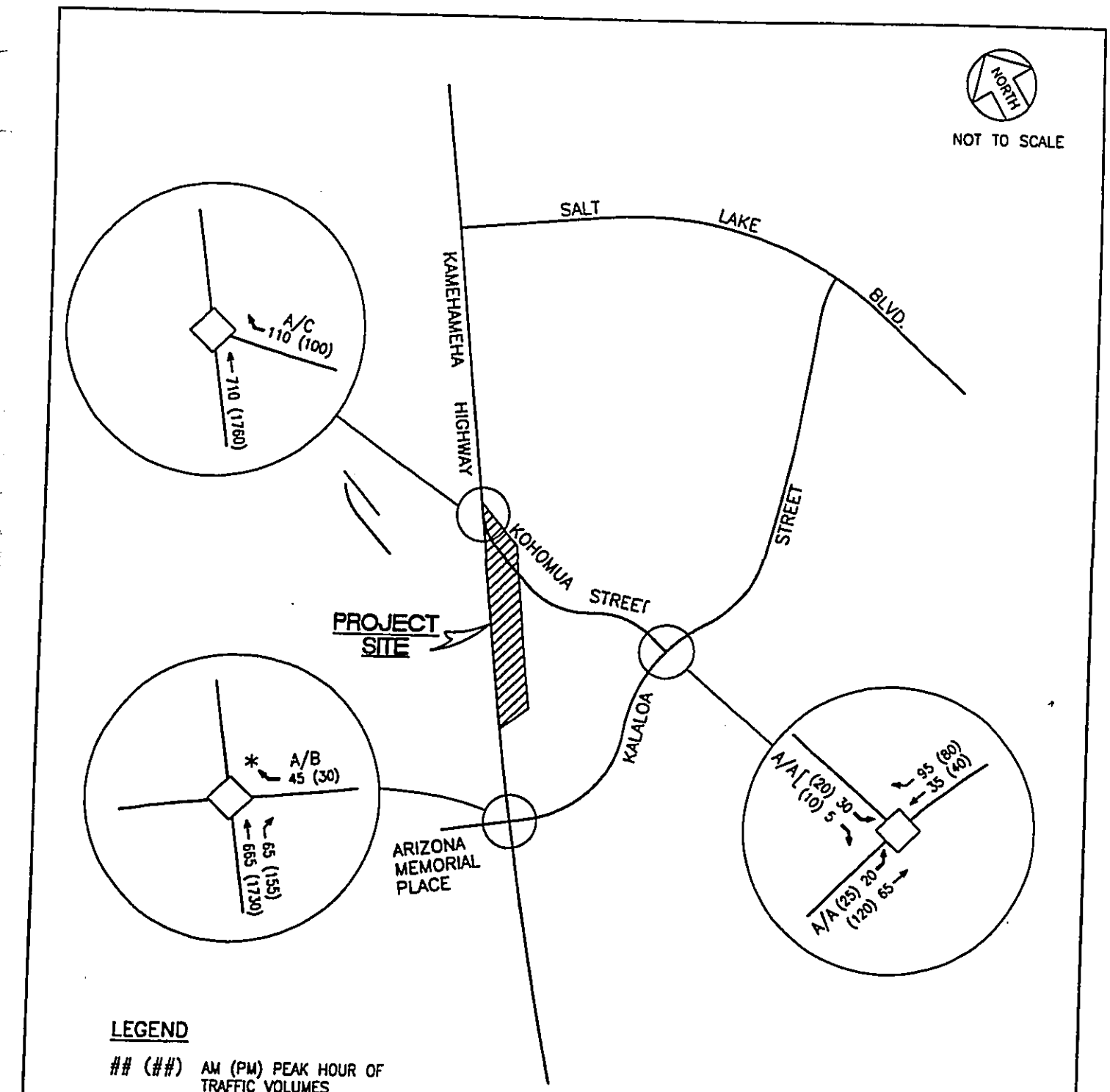
The Aloha Market is scheduled for completion in year 2003. Traffic volumes on Kamehameha Highway and Kalaloa Street were increased by three percent per year to represent Year 2003 traffic conditions without the project based on historic traffic data for Kamehameha Highway. Figure 3 shows the traffic assignment for Year 2003 without project.

- Kamehameha Highway/Kalaloa Street

  The westbound Kalaloa Street right-turn will continue to operate at LOS A during the AM peak hour of traffic and at LOS B during the PM peak hour of traffic.

- Kalaloa Street/Kohomua Street

  All critical movements at the Kalaloa Street/Kohomua Street unsignalized intersection will continue to operate at LOS A during the AM and PM peak hours of traffic.



ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	YEAR 2003 WITHOUT PROJECT	3

FN: 00-058.2

- Kamehameha Highway/Kohomua Street

  This right turn movement will continue to operate at LOS A during the AM peak hour of traffic. As through traffic on Kamehameha Highway increases, this movement will experience LOS C conditions during the PM peak hour of traffic

IV. YEAR 2003 WITH PROJECT

A. Trip Generation

The trip generation estimate for the proposed Aloha Market was calculated using trip rates published in the Institute of Transportation Engineers publication, *Trip Generation, 6th Edition*. The estimate assumed the possibility of a 24-hour operation of the convenience store. Although a police workstation is included in the plan, it is not anticipated to generate significant traffic during the peak periods of traffic as it is intended for use by police officers in the field to perform "office" duties as needed. The study also assumed that the museum/retail space would be used for retail purposes to generate a "worst-case" scenario. Table 2 shows the trip generation rates used in the study and Table 3 shows the trip generation estimate for the project.

Table 2
ALOHA MARKET
TRIP GENERATION RATES

Land Use (ITE Code)	Independent Variable	Weekday AM Peak Hour of Traffic		Weekday PM Peak Hour of Traffic	
		Rate	% Enter	Rate	% Enter
24-Hr. Convenience Store (851)	1,000 GFA	65.39	51%	34.57	50%
Deli/Take Out (833)	1,000 GFA	43.87	60%	26.15	51%
Retail (852)	1,000 GFA	31.02	50%	34.57	49%

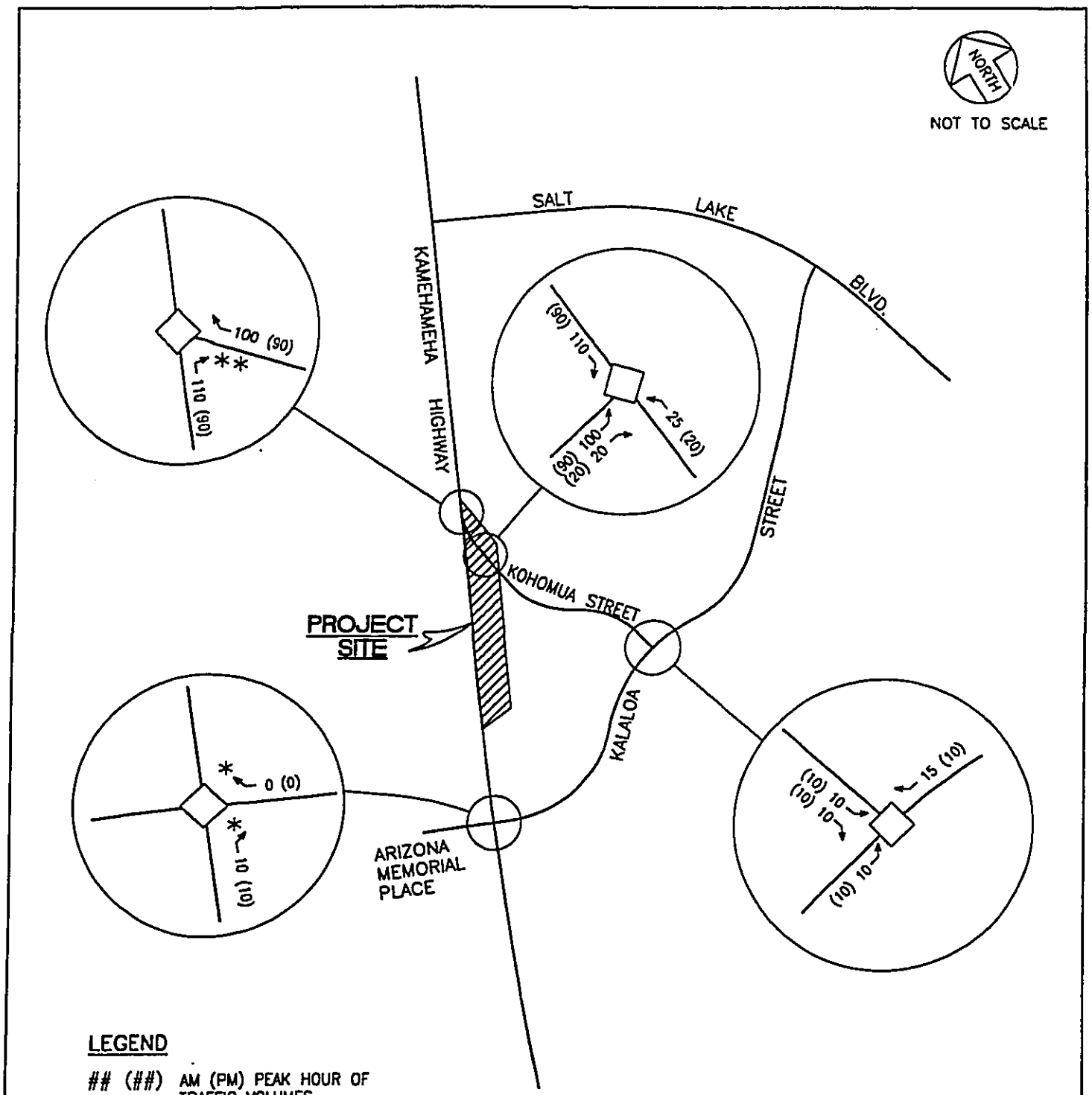
Table 3
ALOHA MARKET
TRIP GENERATION

Land Use (ITE Code)	1,000 Square Feet	Weekday AM Peak Hour of Traffic		Weekday PM Peak Hour of Traffic	
		Enter	Exit	Enter	Exit
24-Hr. Convenience Store (851)	3.0	100	96	81	80
Deli/Take Out (833)	0.636	17	11	9	8
Retail (852)	1.12	18	17	19	20
TOTAL	**4.576**	**135**	**124**	**109**	**108**

B. Trip Distribution and Traffic Assignment

The project will construct a right-turn access to Kohomua Street from northbound Kamehameha Highway. Based on the traffic count data, the diversion for non-project traffic is not anticipated to be significant. It was estimated that approximately 50 percent of the existing traffic that enters Kohomua Street from Kamehameha Highway will divert to the new access resulting in a diversion of approximately 10 trips during the AM peak hour of traffic and 12 trips during the PM peak hour of traffic.

The majority of project traffic, however, is anticipated to use the new access to Kohomua Street. Trip distribution factors were derived from the traffic volumes on Kamehameha Highway and Kalaloa Street. The trip distribution factors used in the study are shown in Table 4. The traffic assignment for project traffic is shown in Figure 4.



LEGEND

(##) AM (PM) PEAK HOUR OF TRAFFIC VOLUMES

VOLUMES ROUNDED TO NEAREST 5 VPH

* MOVEMENTS OPERATE INDEPENDENTLY FROM TRAFFIC SIGNAL

** NEW MOVEMENT

ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	PROJECT TRAFFIC	4

FN: 00-058.2

Table 4
TRIP DISTRIBUTION FACTORS

Area	Factor
Kamehameha Hwy./ Kalaloa St.	8%
Salt Lake Blvd.	10%
Kamehameha Hwy./ Kohomua St.	82%
Total	**100%**

V. TRAFFIC ANALYSES WITH PROJECT

Project traffic was added to Year 2003 volumes, resulting in Figure 5, which shows the traffic assignment for Year 2003 with project conditions. The analyses of the unsignalized intersections are summarized below and are compared to Year 2003 conditions without the project in Table 5.

- Kamehameha Highway/Kalaloa Street

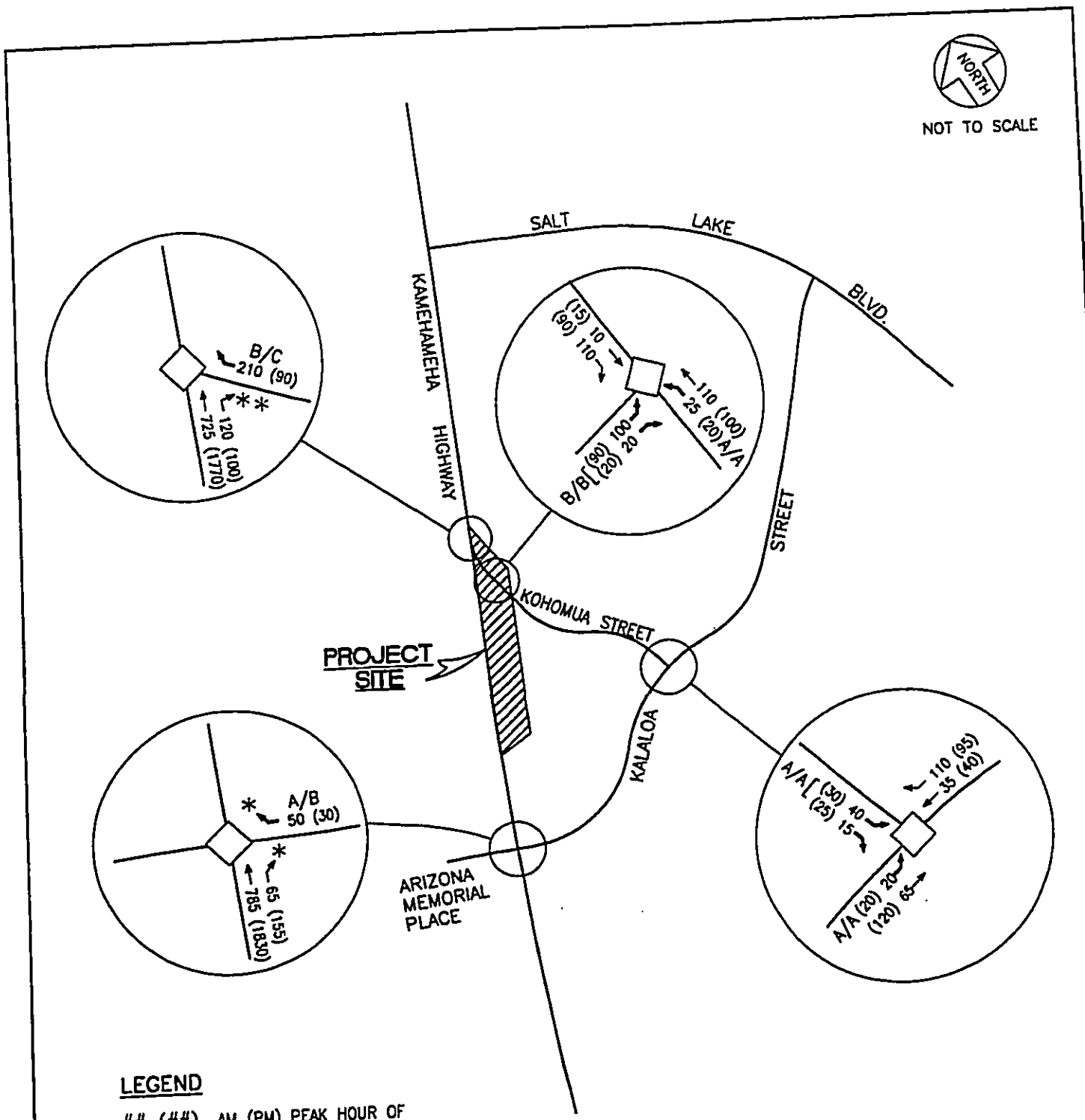
  The westbound Kalaloa Street right-turn will continue to operate at LOS A during the AM peak hour of traffic and at LOS B during the PM peak hour of traffic.

- Kalaloa Street/Kohomua Street

  All critical movements at the Kalaloa Street/Kohomua Street unsignalized intersection will continue to operate at LOS A during the AM and PM peak hours of traffic.

- Kamehameha Highway/Kohomua Street

  This right-turn movement will experience slightly higher delays and will operate at LOS B during the AM peak hour of traffic and will continue to operate at LOS C during the PM peak hour of traffic.



LEGEND

## (##)	AM (PM) PEAK HOUR OF TRAFFIC VOLUMES
◇	UNSIGNALIZED INTERSECTION LOS AM/PM
*	MOVEMENTS OPERATE INDEPENDENTLY FROM TRAFFIC SIGNAL
**	NEW MOVEMENT

VOLUMES ROUNDED TO NEAREST 5 VPH

ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII	FIGURE
	YEAR 2003 WITH PROJECT	5

File: 00-059.2

- Kohomua Street/Project Driveway

  The intersection of the project driveway and Kohomua Street forms an unsignalized "Tee"-intersection with the driveway approach forming the stem of the "Tee". The northbound Kohomua Street left-turn movement will operate at LOS A during the AM and PM peak hours of traffic. The driveway or stop sign-controlled approach will operate at LOS B during the AM and PM peak hours of traffic.

Table 5
LOS COMPARISON

Unsignalized Intersection	2003 Without Project		2003 With Project	
	AM Peak Hour of Traffic	PM Peak Hour of Traffic	AM Peak Hour of Traffic	PM Peak Hour of Traffic
Kamehameha Hwy./Kalaloa St.				
WB Kalaloa Right	A	B	A	B
Kalaloa St./Kohomua St.				
EB Kalaloa Left	A	A	A	A
SB Kohomua Shared	A	A	A	A
Kamehameha Hwy./Kohomua St.				
WB Kohomua Right	A	C	B	C
Kohomua St./Project Driveway				
NB Kohomua Left	N/A	N/A	A	A
EB Driveway Shared	N/A	N/A	B	B

VI. CONCLUSIONS

The following are the conclusions of the traffic report.

- Traffic impacts of project are anticipated to be nominal as all critical movements will operate at LOS C or better.
- The diversion of non-project traffic to the proposed access from northbound Kamehameha Highway to Kohomua Street is not anticipated to be significant based on the traffic count data. Fewer than 15 vehicles

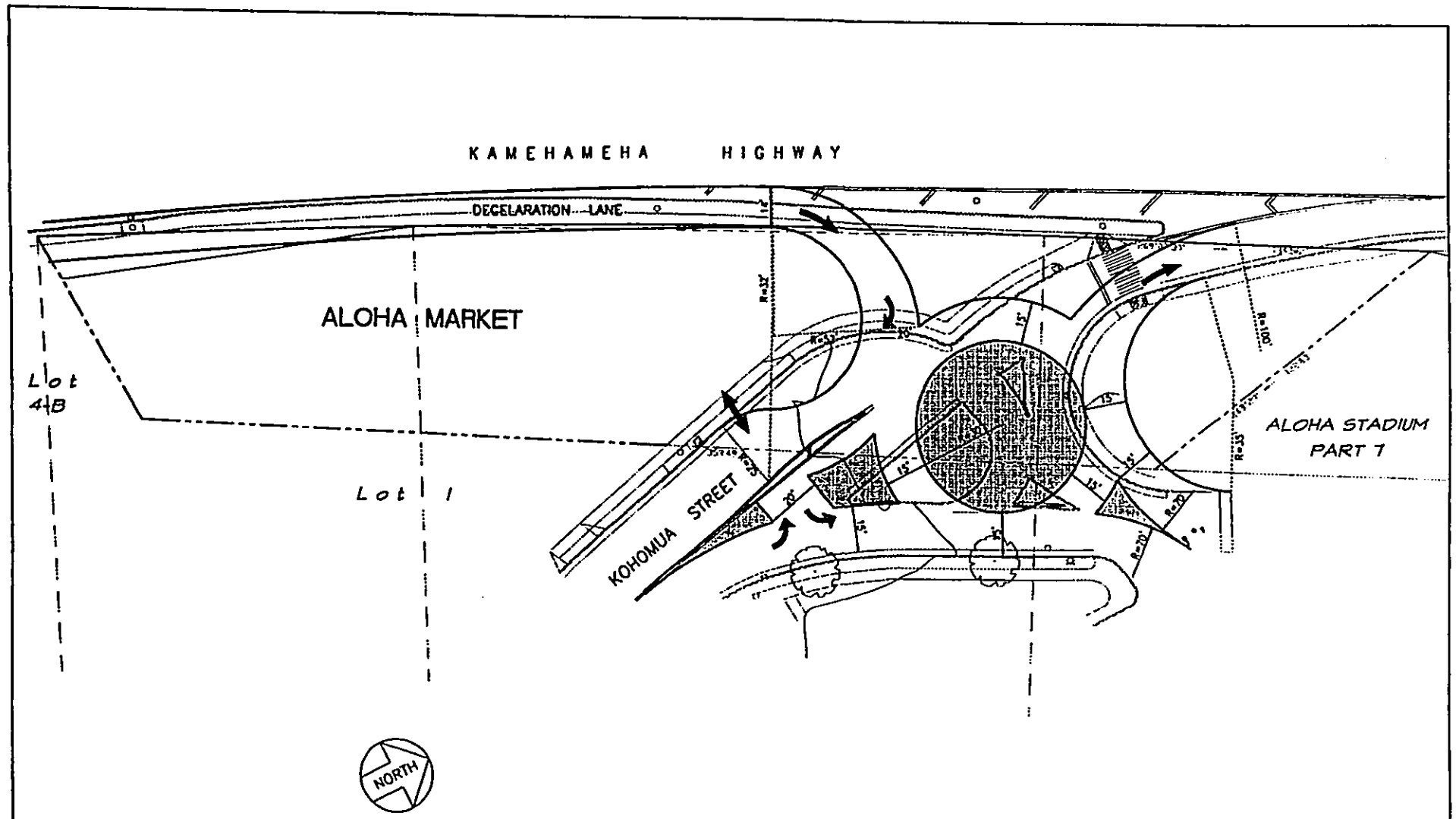
per hour (non-project) are estimated to divert to this new access during the peak hours of traffic.

- The trip generation estimate for this project represents a conservative estimate as pass-by traffic was not included as part of the analysis. Pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination. These trips are attracted from traffic passing the site on an adjacent street such as Kamehameha Highway or Kalaloa Street. An example would be someone traveling to work or home stops at one of the stores in the Aloha Market and then continues on to their primary trip destination. Limited data presented in *Trip Generation – 5th Edition*, suggests a pass-by trip rate of up to 30 to 35 percent for similar sized mixed-use developments.

VII. RECOMMENDATIONS

The following are the recommendations of the traffic report.

- Provide a right-turn deceleration lane on northbound Kamehameha Highway for the new access to Kohomua Street. This deceleration lane can be implemented by extending the existing right-turn acceleration lane at the Kamehameha Highway/Kalaloa Street intersection to the Kohomua Street access forming an auxiliary lane between the two intersections. Analysis of the weaving condition on this auxiliary lane indicates that it would operate at LOS C or better.
- Provide a turn-around at the north end of Kohomua Street. A small-radius traffic circle could be considered to facilitate turn movements at the north end of Kohomua Street. A conceptual layout for a traffic circle is shown in Figure 6.



CONCEPT PLAN
NOT TO SCALE

ALOHA MARKET	AUSTIN, TSUTSUMI & ASSOCIATES, INC. ENGINEERS, SURVEYORS • HONOLULU, HAWAII CONCEPT PLAN	FIGURE 6

FN: 00-059.2

REFERENCES

1. Transportation Research Board, *Highway Capacity Manual*, Special Report 209, 1994.

2. Institute of Transportation Engineers, *Trip Generation - 5th Edition*, 1991.

3. Institute of Transportation Engineers, *Trip Generation - 6th Edition*, 1997.

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APPENDICES

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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APPENDIX A
TRAFFIC COUNT DATA

Austin, Tsutsumi & Associates, Inc.
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817
Ph: (808) 533-3646 Fax: (808) 526-1267

Major: Kamehameha Highway
Minor: Kalaloa Street
Date: May 15, 2001
Time: 7:15 AM- 9:15 AM

File Name : KAM & KALALOA AM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 1

Groups Printed- Unshifted

	KAMEHAMEHA HIGHWAY Southbound					KALALOA STREET Westbound					KAMEHAMEHA HIGHWAY Northbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:15 AM	0	0	0	0	0	15	0	0	1	16	13	195	14	1	223	0	0	2	0	2	241
07:30 AM	0	3	0	0	3	13	0	0	9	22	12	170	21	0	203	0	0	3	0	3	231
07:45 AM	0	0	0	0	0	5	0	0	5	10	17	165	28	0	210	1	0	4	0	5	225
Total	0	3	0	0	3	33	0	0	15	48	42	530	63	1	636	1	0	9	0	10	697
08:00 AM	0	0	0	0	0	11	0	0	9	20	17	97	33	0	147	0	0	0	0	0	167
08:15 AM	0	0	0	0	0	6	0	0	4	10	7	105	51	0	163	0	0	6	0	6	179
08:30 AM	0	0	0	0	0	6	1	1	1	9	27	134	42	1	204	0	0	5	0	5	218
08:45 AM	0	0	0	0	0	6	0	0	21	27	11	146	48	0	205	0	0	9	0	9	241
Total	0	0	0	0	0	29	1	1	35	66	62	482	174	1	719	0	0	20	0	20	805
09:00 AM	0	0	0	0	0	11	0	0	3	14	4	147	40	0	191	0	0	9	0	9	214
Grand Total	0	3	0	0	3	73	1	1	53	128	108	1159	277	2	1546	1	0	38	0	39	1716
Apprch %	0.0	100.0	0.0	0.0		57.0	0.8	0.8	41.4		7.0	75.0	17.9	0.1		2.6	0.0	97.4	0.0		
Total %	0.0	0.2	0.0	0.0	0.2	4.3	0.1	0.1	3.1	7.5	6.3	67.5	16.1	0.1	90.1	0.1	0.0	2.2	0.0	2.3	

Austin, Tsutsumi & Associates, Inc.
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Major: Kamehameha Highway
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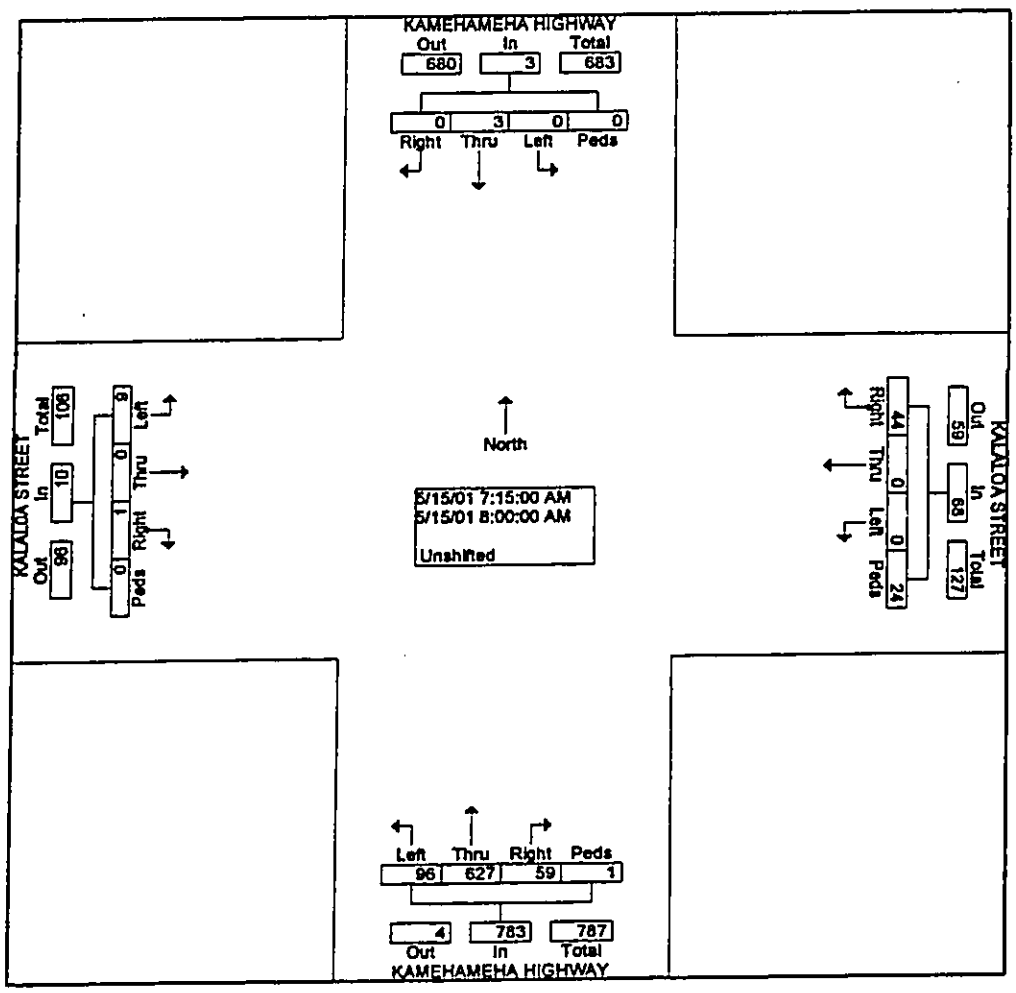
Date: May 15, 2001
Time: 7:15 AM- 9:15 AM

File Name : KAM & KALALOA AM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 2

	KAMEHAMEHA HIGHWAY Southbound					KALALOA STREET Westbound					KAMEHAMEHA HIGHWAY Northbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	3	0	0	3	44	0	0	24	68	59	627	96	1	783	1	0	9	0	10	864
Percent	0.0	100.0	0.0	0.0		64.7	0.0	0.0	35.3		7.5	80.1	12.3	0.1		10.0	0.0	90.0	0.0		
07:15 Volume	0	0	0	0	0	15	0	0	1	16	13	195	14	1	223	0	0	2	0	2	241
Peak Factor																					0.896
High Int.	07:30 AM					07:30 AM					07:15 AM					07:45 AM					
Volume	0	3	0	0	3	13	0	0	9	22	13	195	14	1	223	1	0	4	0	5	
Peak Factor					0.250					0.773					0.878					0.500	



Austin, Tsutsumi & Associates, Inc.
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817
Ph: (808) 533-3646 Fax: (808) 526-1267

Major: KAMEHAMEHA HIGHWAY
Minor: KALALOA STREET
Date: MAY 15, 2001
Time: 2:30 PM - 4:30 PM

File Name : KAM & KALALOA PM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 1

Groups Printed- Unshifted

	KAMEHAMEHA HIGHWAY Southbound					KALALOA STEET Westbound					KAMEHAMEHA HIGHWAY Northbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
02:30 PM	0	0	0	5	5	1	0	0	0	1	24	285	29	0	338	0	0	0	0	0	344
02:45 PM	0	0	0	21	21	4	0	0	0	4	34	246	12	0	292	0	0	0	0	0	317
Total	0	0	0	26	26	5	0	0	0	5	58	531	41	0	630	0	0	0	0	0	661
03:00 PM	0	0	0	0	0	10	0	0	0	10	42	382	22	0	446	0	0	0	0	0	456
03:15 PM	0	0	0	5	5	9	0	0	0	9	24	364	13	0	401	0	0	0	0	0	415
03:30 PM	0	0	0	6	6	6	0	0	0	6	34	410	30	0	474	0	0	0	0	0	486
03:45 PM	0	0	0	0	0	5	0	0	0	5	44	425	21	0	490	0	0	0	0	0	495
Total	0	0	0	11	11	30	0	0	0	30	144	1581	86	0	1811	0	0	0	0	0	1852
04:00 PM	0	0	0	4	4	9	0	0	0	9	43	408	19	0	470	0	0	0	0	0	483
04:15 PM	0	0	0	0	0	8	0	0	0	8	27	387	4	0	418	0	0	0	0	0	426
Grand Total	0	0	0	41	41	52	0	0	0	52	272	2907	150	0	3329	0	0	0	0	0	3422
Apprch %	0.0	0.0	0.0	100.0		100.0	0.0	0.0	0.0		8.2	87.3	4.5	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	1.2	1.2	1.5	0.0	0.0	0.0	1.5	7.9	85.0	4.4	0.0	97.3	0.0	0.0	0.0	0.0	0.0	

Major: KAMEHAMEHA HIGHWAY
Minor: KALALOA STREET
Date: MAY 15, 2001
Time: 2:30 PM - 4:30 PM

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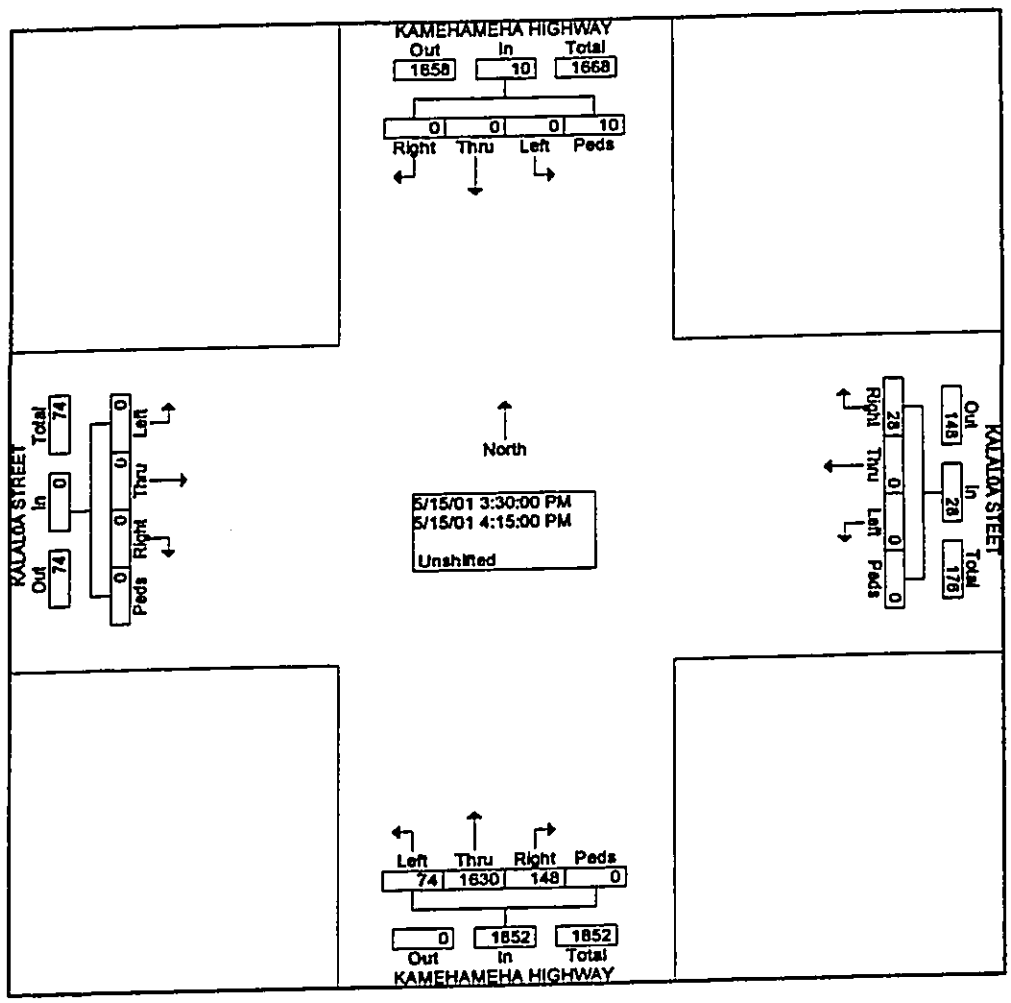
Site Code : 00000000
Start Date : 05/15/2001
Page No : 2

	KAMEHAMEHA HIGHWAY Southbound					KALALOA STEET Westbound					KAMEHAMEHA HIGHWAY Northbound					KALALOA STREET Eastbound					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 02:30 PM to 04:15 PM - Peak 1 of 1																					
Intersection	03:30 PM																				
Volume	0	0	0	10	10	28	0	0	0	28	148	1630	74	0	1852	0	0	0	0	0	1890
Percent	0.0	0.0	0.0	100.0		100.0	0.0	0.0	0.0		8.0	88.0	4.0	0.0		0.0	0.0	0.0	0.0		
03:45 Volume	0	0	0	0	0	5	0	0	0	5	44	425	21	0	490	0	0	0	0	0	495
Peak Factor																					0.955
High Int.	03:30 PM					04:00 PM					03:45 PM					2:15:00 PM					
Volume	0	0	0	6	6	9	0	0	0	9	44	425	21	0	490						
Peak Factor					0.417					0.778					0.945						



Austin, Tsutsumi & Associates, Inc.
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817
Ph: (808) 533-3646 Fax: (808) 526-1267

Major: Komohua Street
minor: Kalaloa Street
Date: May 15, 2001
Time: 7:15 AM - 9:15 AM

File Name : KOMOHUA & KALALOA AM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 1

Groups Printed- Unshifted

	KOMOHUA STREET Southbound					KALALOA STREET Westbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:15 AM	0	0	6	1	7	18	6	0	0	24	0	13	5	0	18	49
07:30 AM	0	0	11	0	11	29	9	0	0	38	0	23	4	0	27	76
07:45 AM	1	0	8	0	9	23	6	0	0	29	0	14	5	0	19	57
Total	1	0	25	1	27	70	21	0	0	91	0	50	14	0	64	182
08:00 AM	0	0	3	0	3	18	10	0	0	28	0	12	4	0	16	47
08:15 AM	1	0	5	0	6	14	4	0	0	18	0	6	0	0	6	30
08:30 AM	1	0	3	0	4	8	7	0	0	15	0	20	2	0	22	41
08:45 AM	1	0	3	0	4	11	6	0	0	17	0	13	2	0	15	36
Total	3	0	14	0	17	51	27	0	0	78	0	51	8	0	59	154
09:00 AM	0	0	3	0	3	15	5	0	0	20	0	9	1	0	10	33
Grand Total	4	0	42	1	47	136	53	0	0	189	0	110	23	0	133	369
Apprch %	8.5	0.0	89.4	2.1		72.0	28.0	0.0	0.0		0.0	82.7	17.3	0.0		
Total %	1.1	0.0	11.4	0.3	12.7	36.9	14.4	0.0	0.0	51.2	0.0	29.8	6.2	0.0	36.0	

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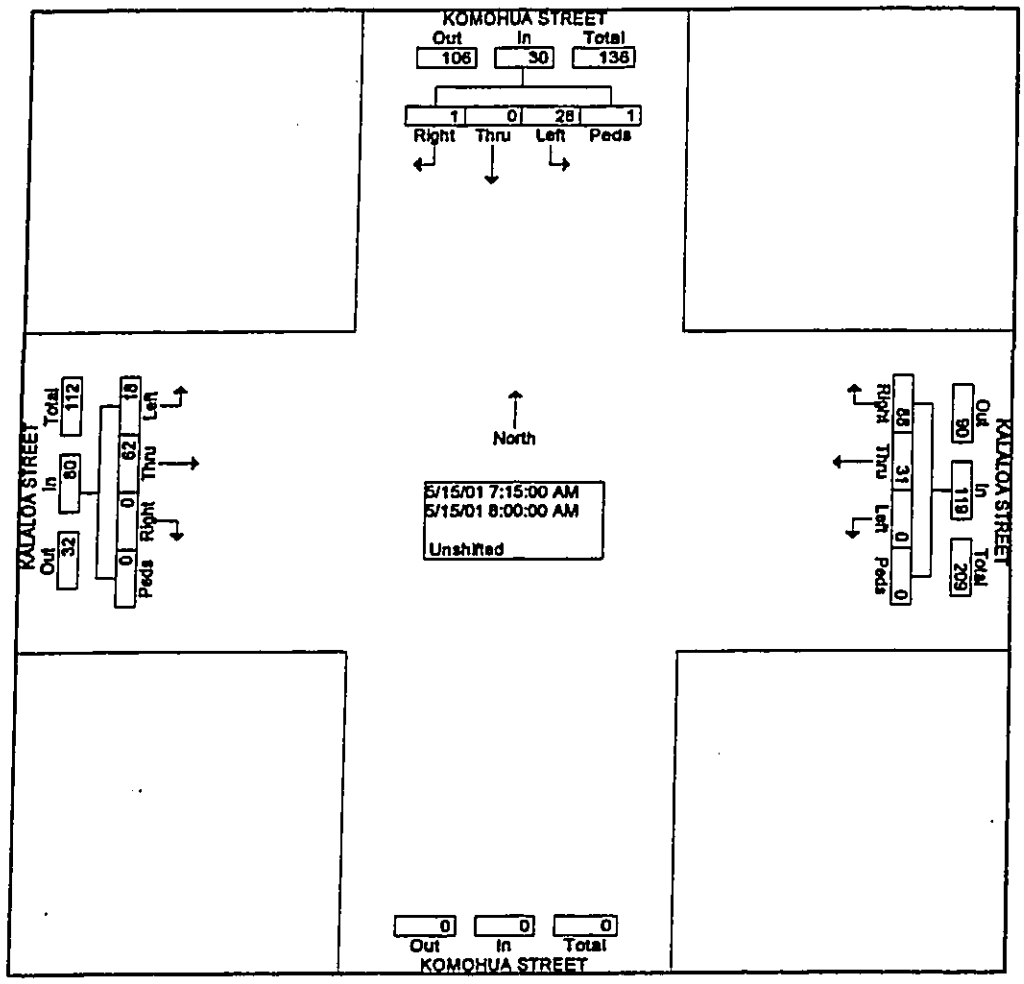
Major: Komohua Street
minor: Kalaloa Street
Date: May 15, 2001
Time: 7:15 AM - 9:15 AM

File Name : KOMOHUA & KALALOA AM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 2

	KOMOHUA STREET Southbound					KALALOA STREET Westbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 09:00 AM - Peak 1 of 1																
Intersection 07:15 AM																
Volume	1	0	28	1	30	88	31	0	0	119	0	62	18	0	80	229
Percent	3.3	0.0	93.3	3.3		73.9	26.1	0.0	0.0		0.0	77.5	22.5	0.0		
07:30 Volume	0	0	11	0	11	29	9	0	0	38	0	23	4	0	27	76
Peak Factor																0.753
High Int. 07:30 AM						07:30 AM					07:30 AM					
Volume	0	0	11	0	11	29	9	0	0	38	0	23	4	0	27	
Peak Factor					0.682					0.783					0.741	



Austin, Tsutsumi & Associates, Inc.
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817
Ph: (808) 533-3646 Fax: (808) 526-1267

Major:KALALOA STREET
Minor: KOMOHUA STREET
Date: MAY 15, 2001
Time: 2:30 PM - 4:30 PM

File Name : KOMOHUA & KALALOA PM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 1

Groups Printed- Unshifted

	KOMOHUA STREET Southbound					KALALOA STREET Westbound					KOMOHUA STREET Northbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
02:30 PM	0	0	5	0	5	31	8	0	0	39	0	0	0	0	0	0	20	5	0	25	69
02:45 PM	3	0	4	0	7	19	11	0	0	30	0	0	0	0	0	0	36	8	0	44	81
Total	3	0	9	0	12	50	19	0	0	69	0	0	0	0	0	0	56	13	0	69	150
03:00 PM	0	0	3	0	3	15	8	0	0	23	0	0	0	0	0	0	29	10	0	39	65
03:15 PM	2	0	6	0	8	16	9	0	0	25	0	0	0	0	0	0	24	9	0	33	66
03:30 PM	2	0	10	0	12	17	10	0	0	27	0	0	0	0	0	0	24	8	0	32	71
03:45 PM	1	0	2	0	3	17	8	0	0	25	0	0	0	0	0	0	32	3	0	35	63
Total	5	0	21	0	26	65	35	0	0	100	0	0	0	0	0	0	109	30	0	139	265
04:00 PM	0	0	1	0	1	13	14	0	0	27	0	0	0	0	0	0	31	6	0	37	65
04:15 PM	0	0	4	0	4	30	6	0	0	36	0	0	0	0	0	0	25	7	0	32	72
Grand Total	8	0	35	0	43	158	74	0	0	232	0	0	0	0	0	0	221	56	0	277	552
Apprch %	18.6	0.0	81.4	0.0		68.1	31.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	79.8	20.2	0.0		
Total %	1.4	0.0	6.3	0.0	7.8	28.6	13.4	0.0	0.0	42.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	10.1	0.0	50.2	

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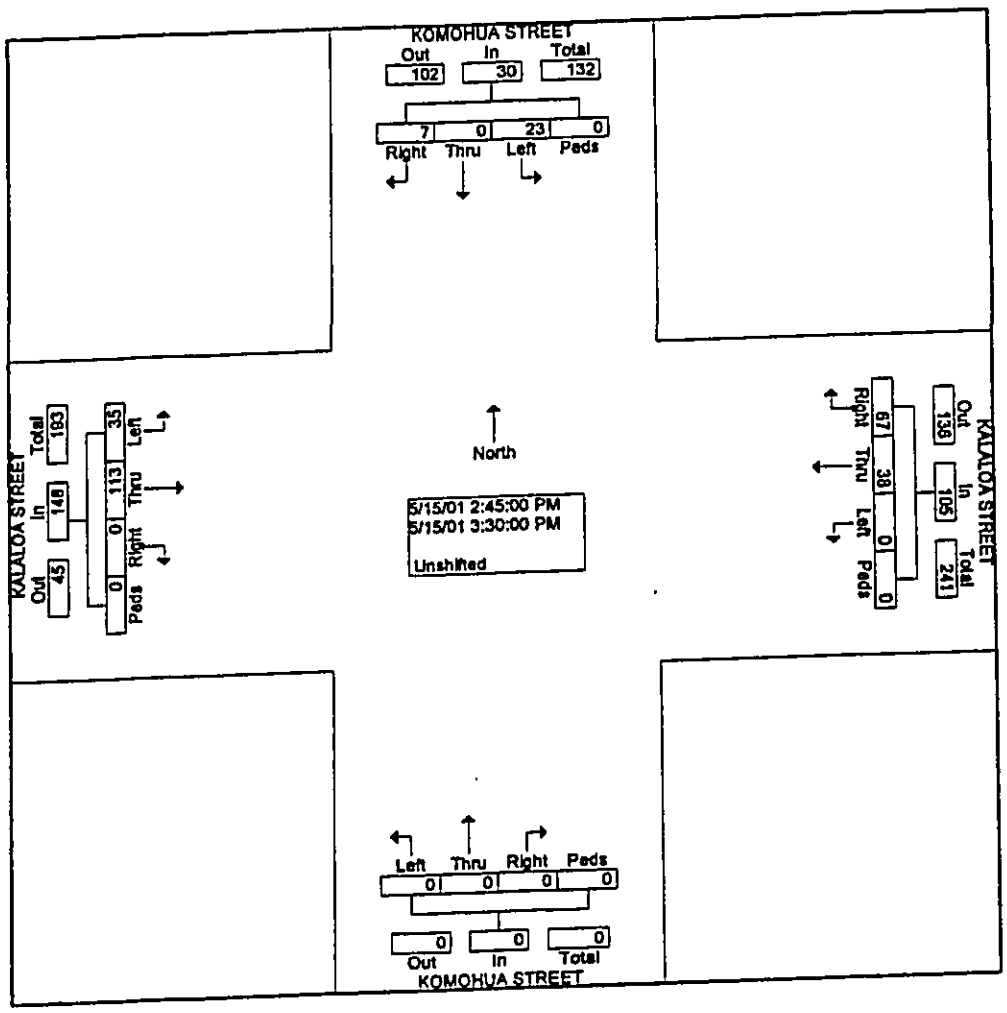
Major:KALALOA STREET
Minor: KOMOHUA STREET
Date: MAY 15, 2001
Time: 2:30 PM - 4:30 PM

File Name : KOMOHUA & KALALOA PM
Site Code : 00000000
Start Date : 05/15/2001
Page No : 2

	KOMOHUA STREET Southbound					KALALOA STREET Westbound					KOMOHUA STREET Northbound					KALALOA STREET Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 02:30 PM to 04:15 PM - Peak 1 of 1																					
Intersection	02:45 PM																				
Volume	7	0	23	0	30	67	38	0	0	105	0	0	0	0	0	0	113	35	0	148	283
Percent	23.3	0.0	76.7	0.0		63.8	36.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	76.4	23.6	0.0		
02:45 Volume	3	0	4	0	7	19	11	0	0	30	0	0	0	0	0	0	36	8	0	44	81
Peak Factor																					0.873
High Int.	03:30 PM					02:45 PM					2:15:00 PM					02:45 PM					
Volume	2	0	10	0	12	19	11	0	0	30	0	0	0	0	0	0	36	8	0	44	
Peak Factor					0.625					0.875										0.841	



Weather : Sunny
Counter Num: 2.1

Komohua Street

Austin Tsutsumi and Assoc.
501 Sumner Street, Suite 521
Honolulu Hawaii 96817
Ph. (808) 533-3646 Fax. (808) 526-1267

Site Code : 000000000000
Start Date: 05/14/2001
File I.D. : I:\HOME\ENG\E
Page : 1

Begin Time	<------Quarter Hour ------> 1st	2nd	3rd	4th	Hour Total	Each * Equals 25 Vehicles
12:00 05/14	*	*	*	*	*	
01:00	*	*	*	*	*	
02:00	*	*	*	*	*	
03:00	*	*	*	*	*	
04:00	*	*	*	*	*	
05:00	*	*	*	*	*	
06:00	*	*	*	*	*	
07:00	*	*	*	*	*	
08:00	*	*	*	*	*	
09:00	*	*	*	*	*	
10:00	*	*	*	3	*	
11:00	21	15	13	12	61	**
12:00	28	20	12	13	73	***
01:00	21	12	16	9	58	**
02:00	17	16	16	18	67	***
03:00	23	25	19	23	90	****
04:00	13	13	18	31	75	***
05:00	21	20	26	22	89	****
06:00	12	12	8	23	55	**
07:00	14	12	17	16	59	**
08:00	23	11	16	18	68	***
09:00	16	5	10	3	34	*
10:00	9	12	7	13	41	**
11:00	10	11	4	7	32	*
Total	4	4	2	3	13	*
					815	

AM Peak

The AM peak hour began 10:30.
The peak volume was 73.
The largest interval began 11:00,
and contained 28 vehicles.
The peak hour factor was .65

PM Peak

The PM peak hour began 03:45.
The peak volume was 98.
The largest interval began 03:45,
and contained 31 vehicles.
The peak hour factor was .79

Weather : Sunny
Counter Num: 2.1

Komohua Street

Austin Tsutsumi and Assoc.
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Site Code : 000000000000
Start Date: 05/14/2001
File I.D. : I:\HOME\ENG\E
Page : 2

Begin Time	<------Quarter Hour ------> 1st	2nd	3rd	4th	Hour Total	Each * Equals 25 Vehicles
12:00 05/15	4	1	1	1	7	
01:00	3	1	1	1	6	
02:00	0	3	5	4	12	
03:00	0	0	1	1	2	
04:00	4	4	3	4	15	*
05:00	10	11	10	21	52	**
06:00	21	18	24	33	96	****
07:00	24	40	34	12	110	****
08:00	16	21	11	15	63	***
09:00	12	16	17	8	53	**
10:00	17	16	13	22	68	***
11:00	19	13	20	11	63	***
12:00	17	13	13	14	57	**
01:00	6	14	19	20	59	**
02:00	21	31	25	18	95	****
03:00	22	12	25	16	75	***
04:00	18	35	*	*	*	
05:00	*	*	*	*	*	
06:00	*	*	*	*	*	
07:00	*	*	*	*	*	
08:00	*	*	*	*	*	
09:00	*	*	*	*	*	
10:00	*	*	*	*	*	
11:00	*	*	*	*	*	
Total					833	

AM Peak The AM peak hour began 06:45.
The peak volume was 131.
The largest interval began 07:15,
and contained 40 vehicles.
The peak hour factor was .82

PM Peak The PM peak hour began 01:45.
The peak volume was 97.
The largest interval began 02:15,
and contained 31 vehicles.
The peak hour factor was .78

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APPENDIX B
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

The level of service criteria for unsignalized intersections is defined as the average total delay, in seconds per vehicle. As used here, total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line, this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

While the criteria for level of service for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections are the same, procedures to calculate the average total delay differ.

Level of Service Criteria for TWSC Intersections

Level of Service	Average Total Delay (seconds/vehicle)
A	< 5
B	>5 - < 10
C	>10 - < 20
D	>20 - < 30
E	>30 - < 45
F	> 45

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APPENDIX C
LEVEL OF SERVICE CALCULATIONS

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APPENDIX C

LEVEL OF SERVICE CALCULATIONS

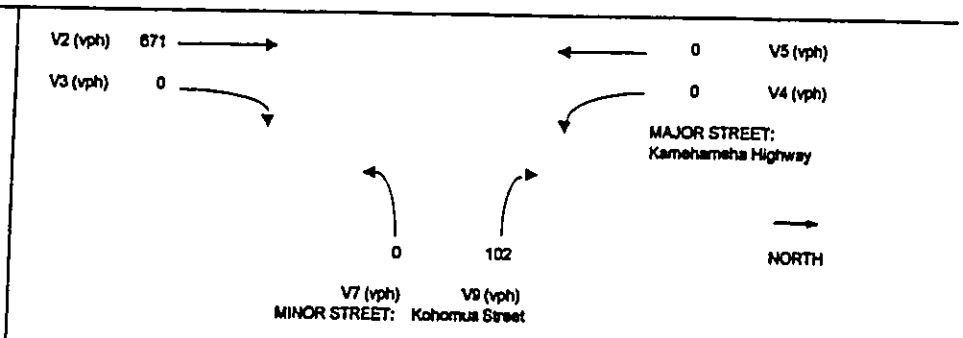
- Existing Conditions

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: AM
Scenario: Existing

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	746	0	0	0	0	113
VOLUME, v (pcph)	746	0	0	0	0	125

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	373	=	373 vph
Potential Capacity:	Cp,9 =					896 pcph
Movement Capacity:	Cm,9 = Cp,9 =					896 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	0	+	746	=	746 vph
Potential Capacity:	Cp,4 =					682 pcph
Movement Capacity:	Cm,4 = Cp,4 =					682 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =	746	vph
Potential Capacity:	Cp,7 =	392	pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=	1.000	
Movement Capacity:	Cm,7 = f7*Cp,7 =	392	pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	392	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	125	896	896	4.66	A
MAJOR LEFT TURN (4)	0	682	——	5.28	B

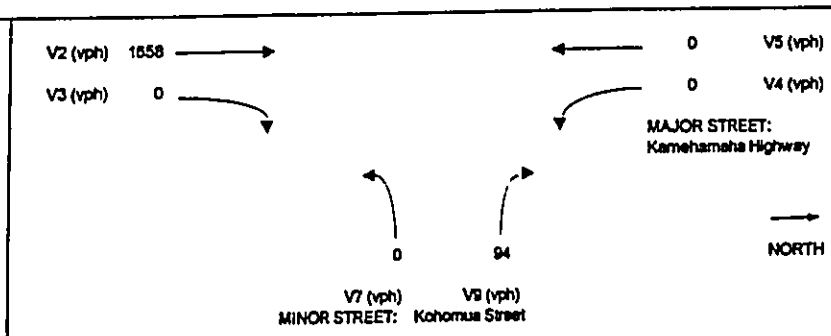
AVERAGE MINOR APPROACH DELAY =	4.66	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.67 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: Existing

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1745	0	0	0	0	99
VOLUME, v (pcph)	1745	0	0	0	0	109

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	873	=	873 vph
Potential Capacity:	Cp,9 =					500 pcph
Movement Capacity:	Cm,9 = Cp,9 =					500 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1745	=	1745 vph
Potential Capacity:	Cp,4 =					196 pcph
Movement Capacity:	Cm,4 = Cp,4 =					196 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1745 vph
Potential Capacity:	Cp,7 =					103 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					103 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	103	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	109	500	500	9.19	B
MAJOR LEFT TURN (4)	0	196	—	18.16	C

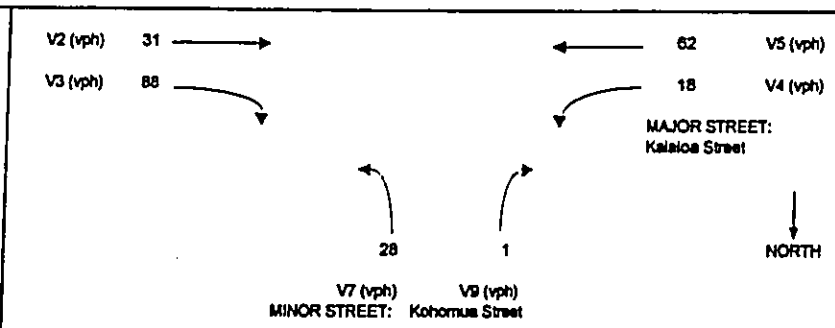
AVERAGE MINOR APPROACH DELAY = 9.19 sec/veh
LEVEL OF SERVICE = B

AVERAGE TOTAL INTERSECTION DELAY = 0.54 sec/veh
LEVEL OF SERVICE = A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kalaloa Street	Print Date:	09-Jul-01
Minor Street:	Kohomua Street	Analyst:	NK
Peak Hour:	AM	File Name:	Kalaloa-Kohomua
Scenario:	Existing		

Peak Hour Factor:	0.75
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	41	117	24	83	37	1
VOLUME, v (pcph)	41	117	26	83	41	1

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	59	+	41	=	100 vph
Potential Capacity:	Cp,9 =					1232 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1232 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	117	+	41	=	159 vph
Potential Capacity:	Cp,4 =					1440 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1440 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.982
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.981
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					207 vph
Potential Capacity:	Cp,7 =					804 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.981
Movement Capacity:	Cm,7 = f7*Cp,7 =					788 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	41	788	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	1	1232	798	4.78	A
MAJOR LEFT TURN (4)	26	1440	——	2.55	A

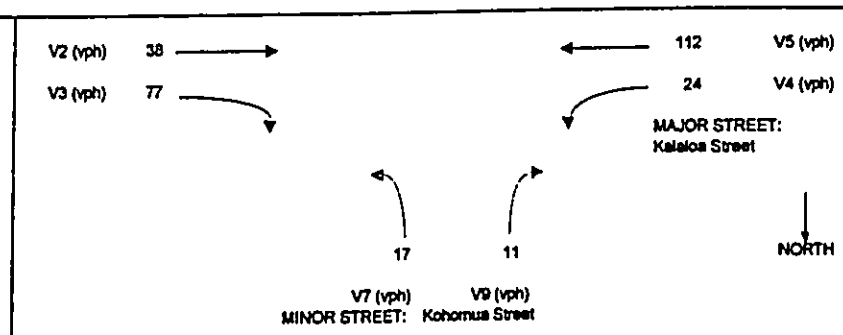
AVERAGE MINOR APPROACH DELAY =	4.76	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.87	sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A	

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kalaloa Street
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: Existing

Print Date: 09-Jul-01
Analyst: NK
File Name: Kalaloa-Kohomua

Peak Hour Factor:	0.97
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	39	79	25	115	18	11
VOLUME, v (pcph)	39	79	27	115	19	12

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	40	+	39	=	79 vph
Potential Capacity:	Cp,9 =					1263 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1263 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	79	+	39	=	119 vph
Potential Capacity:	Cp,4 =					1505 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1505 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.982
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.981
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					219 vph
Potential Capacity:	Cp,7 =					791 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.981
Movement Capacity:	Cm,7 = f7*Cp,7 =					775 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
			SHRD	SHRD	SHRD
MINOR LEFT TURN (7)	19	775	914	4.06	A
MINOR RIGHT TURN (9)	12	1263	——	2.44	A
MAJOR LEFT TURN (4)	27	1505			

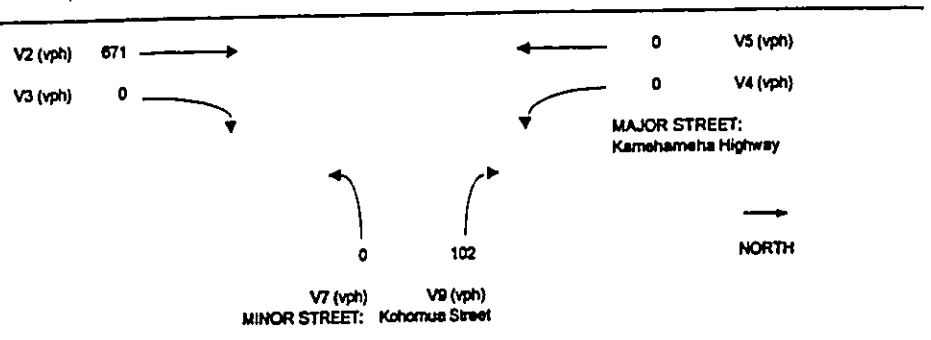
AVERAGE MINOR APPROACH DELAY =	4.06	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.67 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: AM
Scenario: Existing

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	746	0	0	0	0	113
VOLUME, v (pcph)	746	0	0	0	0	125

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	373	=	373 vph
Potential Capacity:	Cp,9 =					896 pcph
Movement Capacity:	Cm,9 = Cp,9 =					896 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	746	=	746 vph
Potential Capacity:	Cp,4 =					682 pcph
Movement Capacity:	Cm,4 = Cp,4 =					682 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					746 vph
Potential Capacity:	Cp,7 =					392 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					392 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	392	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	125	896	896	4.66	A
MAJOR LEFT TURN (4)	0	682	——	5.28	B

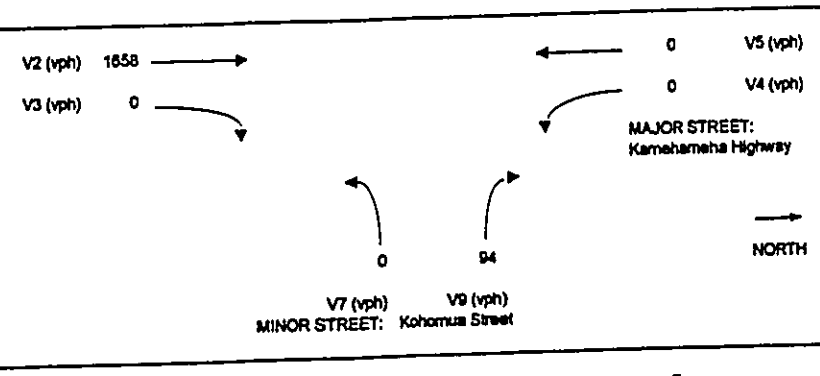
AVERAGE MINOR APPROACH DELAY =	4.66	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.67 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: Existing

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1745	0	0	0	0	99
VOLUME, v (pcph)	1745	0	0	0	0	109

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	873	=	873 vph
Potential Capacity:	Cp,9 =					500 pcph
Movement Capacity:	Cm,9 = Cp,9 =					500 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1745	=	1745 vph
Potential Capacity:	Cp,4 =					196 pcph
Movement Capacity:	Cm,4 = Cp,4 =					196 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1745 vph
Potential Capacity:	Cp,7 =					103 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					103 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	103	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	109	500	500	9.19	B
MAJOR LEFT TURN (4)	0	196	——	18.16	C

AVERAGE MINOR APPROACH DELAY =	9.19	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.54 sec/veh
LEVEL OF SERVICE =	B		LEVEL OF SERVICE =	A

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APPENDIX C

LEVEL OF SERVICE CALCULATIONS

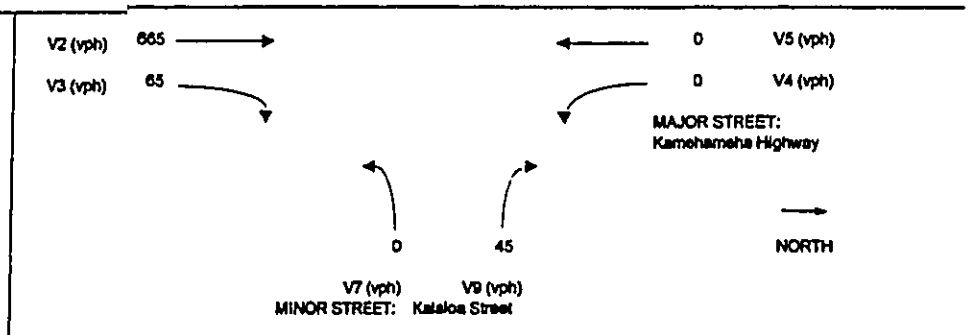
- Future without Project

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kalaloa Street
Peak Hour: AM
Scenario: without project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kalaloa without

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	Y
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	739	72	0	0	0	60
VOLUME, v (pcph)	739	72	0	0	0	65

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	$Vc,9 = 1/2*V3+V2 =$	0	+	369	=	369 vph
Potential Capacity:	$Cp,9 =$					900 pcph
Movement Capacity:	$Cm,9 = Cp,9 =$					900 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	$Vc,4 = V3+V2 =$	0	+	739	=	739 vph
Potential Capacity:	$Cp,4 =$					688 pcph
Movement Capacity:	$Cm,4 = Cp,4 =$					688 pcph
Prob. of Queue-free State:	$po,4 = 1-v4/Cm,4 =$					1.000
Major Left Shared Lane Prob. of Queue-free State:	$p*o,4 = 1-[(1-po,4)/(1-v5/s5)]$					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	$Vc,7 = 1/2V3+V2+V5+V4 =$					739 vph
Potential Capacity:	$Cp,7 =$					395 pcph
Capacity Adjustment Factor Due To Impeding Movements:	$f7=p*o,4=$					1.000
Movement Capacity:	$Cm,7 = f7*Cp,7 =$					395 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	395	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	65	900	900	4.26	A
MAJOR LEFT TURN (4)	0	688	—	5.23	B

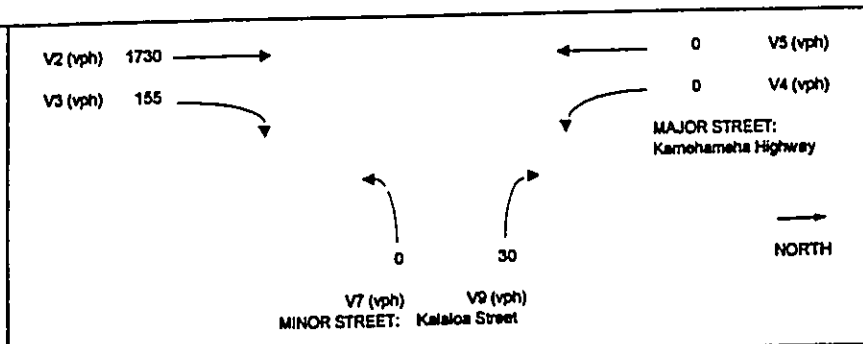
AVERAGE MINOR APPROACH DELAY =	4.26	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.27 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kalaloa Street
Peak Hour: PM
Scenario: without project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kalaloa without

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	Y
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1821	163	0	0	0	32
VOLUME, v (pcph)	1821	163	0	0	0	35

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	911	=	911 vph
Potential Capacity:	Cp,9 =					479 pcph
Movement Capacity:	Cm,9 = Cp,9 =					479 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1821	=	1821 vph
Potential Capacity:	Cp,4 =					180 pcph
Movement Capacity:	Cm,4 = Cp,4 =					180 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1821 vph
Potential Capacity:	Cp,7 =					93 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					93 pcph

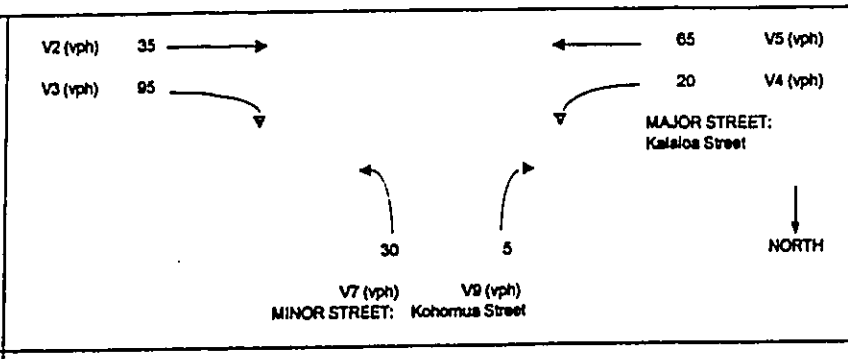
DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	93	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	35	479	479	8.11	B
MAJOR LEFT TURN (4)	0	180	——	19.94	C

AVERAGE MINOR APPROACH DELAY =	8.11	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.14 sec/veh
LEVEL OF SERVICE =	B		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kalaloa Street	Print Date:	09-Jul-01
Minor Street:	Kohomua Street	Analyst:	NK
Peak Hour:	AM	File Name:	Kalaloa-Kohomua without
Scenario:	without project		

Peak Hour Factor:	0.75
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	47	127	27	87	40	7
VOLUME, v (pcph)	47	127	29	87	44	7

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	63	+	47	=	110 vph
Potential Capacity:	Cp,9 =					1215 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1218 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	127	+	47	=	173 vph
Potential Capacity:	Cp,4 =					1417 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1417 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.979
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.978

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =	223	vph
Potential Capacity:	Cp,7 =	786	pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=	0.978	
Movement Capacity:	Cm,7 = f7*Cp,7 =	769	pcph

DELAY AND LEVEL OF SERVICE SUMMARY

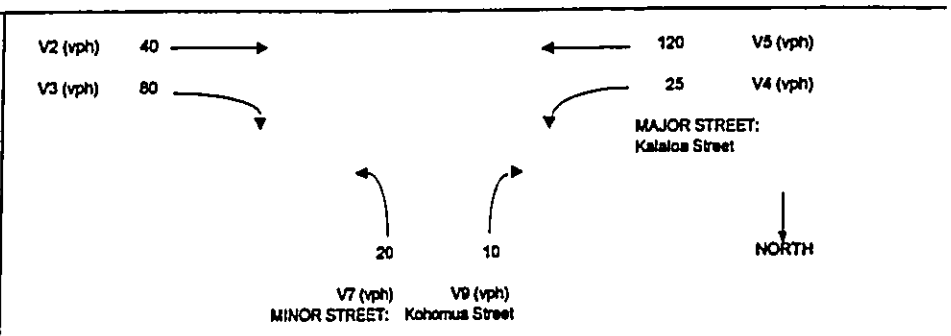
Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	44	769	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	7	1218	812	4.73	A
MAJOR LEFT TURN (4)	29	1417	——	2.59	A

AVERAGE MINOR APPROACH DELAY =	4.73	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.94 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kalaloa Street	Print Date:	09-Jul-01
Minor Street:	Kohomua Street	Analyst:	NK
Peak Hour:	PM	File Name:	Kalaloa-Kohomua without
Scenario:	without project		

Peak Hour Factor:	0.97
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	41	82	28	124	21	10
VOLUME, v (pcph)	41	82	28	124	23	11

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	41	+	41	=	82 vph
Potential Capacity:	Cp,9 =					1258 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1258 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	82	+	41	=	124 vph
Potential Capacity:	Cp,4 =					1497 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1497 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.981
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.979
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					232 vph
Potential Capacity:	Cp,7 =					777 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.979
Movement Capacity:	Cm,7 = f7*Cp,7 =					761 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	23	761	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	11	1258	877	4.27	A
MAJOR LEFT TURN (4)	28	1497	——	2.45	A

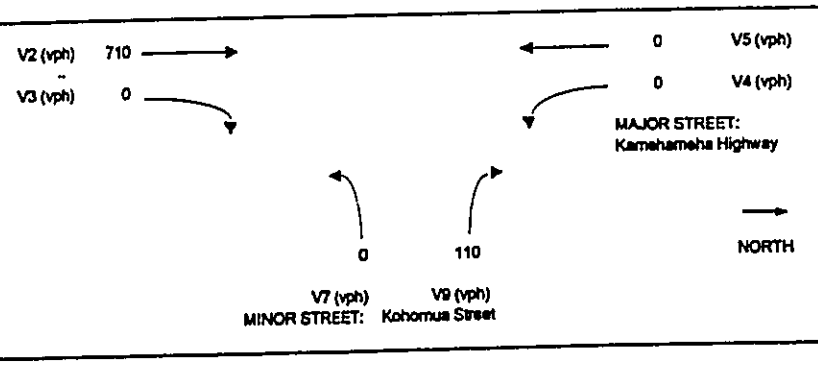
AVERAGE MINOR APPROACH DELAY =	4.27	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.69 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: AM
Scenario: future without project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua without

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	789	0	0	0	0	122
VOLUME, v (pcph)	789	0	0	0	0	134

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =		0	+ 394 =	394	vph
Potential Capacity:	Cp,9 =				674	pcph
Movement Capacity:	Cm,9 = Cp,9 =				674	pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =		0	+ 789 =	789	vph
Potential Capacity:	Cp,4 =				647	pcph
Movement Capacity:	Cm,4 = Cp,4 =				647	pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =				1.000	
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)(1-v5/s5)]				1.000	

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =				789	vph
Potential Capacity:	Cp,7 =				370	pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=				1.000	
Movement Capacity:	Cm,7 = f7*Cp,7 =				370	pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	370	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	134	674	674	4.87	A
MAJOR LEFT TURN (4)	0	647	——	5.57	B

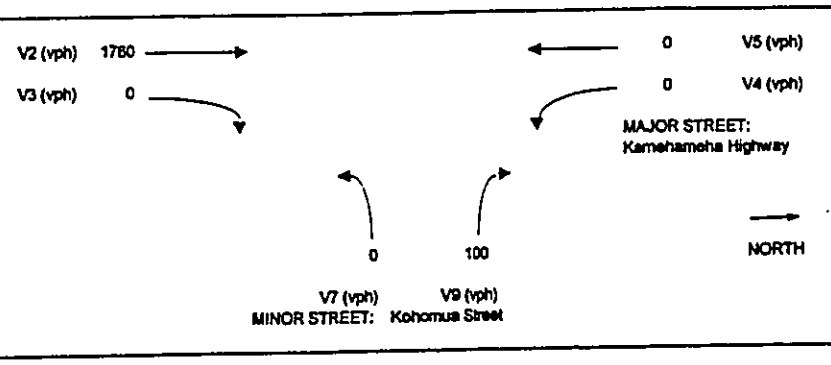
AVERAGE MINOR APPROACH DELAY =	4.87	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.71 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: future without project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua without

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1853	0	0	0	0	105
VOLUME, v (pcph)	1853	0	0	0	0	116

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	926	=	926 vph
Potential Capacity:	Cp,9 =					470 pcph
Movement Capacity:	Cm,9 = Cp,9 =					470 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1853	=	1853 vph
Potential Capacity:	Cp,4 =					174 pcph
Movement Capacity:	Cm,4 = Cp,4 =					174 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1853 vph
Potential Capacity:	Cp,7 =					90 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					90 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	90	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	116	470	470	10.15	C
MAJOR LEFT TURN (4)	0	174	——	20.74	D

AVERAGE MINOR APPROACH DELAY =	10.15 sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	0.60 sec/veh
LEVEL OF SERVICE =	C	LEVEL OF SERVICE =	A

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
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APPENDIX C

LEVEL OF SERVICE CALCULATIONS

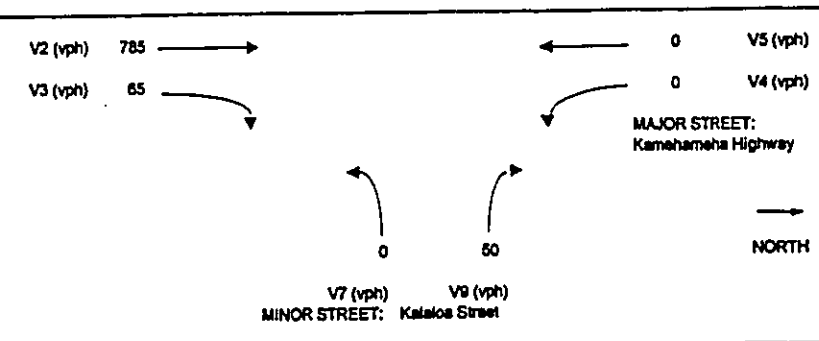
- Future with Project

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kalaloa Street
Peak Hour: AM
Scenario: with project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kalaloa with

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	Y
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	872	72	0	0	0	56
VOLUME, v (pcph)	872	72	0	0	0	61

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	436	=	436 vph
Potential Capacity:	Cp,9 =					832 pcph
Movement Capacity:	Cm,9 = Cp,9 =					832 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	0	+	872	=	872 vph
Potential Capacity:	Cp,4 =					583 pcph
Movement Capacity:	Cm,4 = Cp,4 =					583 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =	872	vph
Potential Capacity:	Cp,7 =	331	pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=	1.000	
Movement Capacity:	Cm,7 = f7*Cp,7 =	331	pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	331	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	61	832	832	4.67	A
MAJOR LEFT TURN (4)	0	583	——	8.17	B

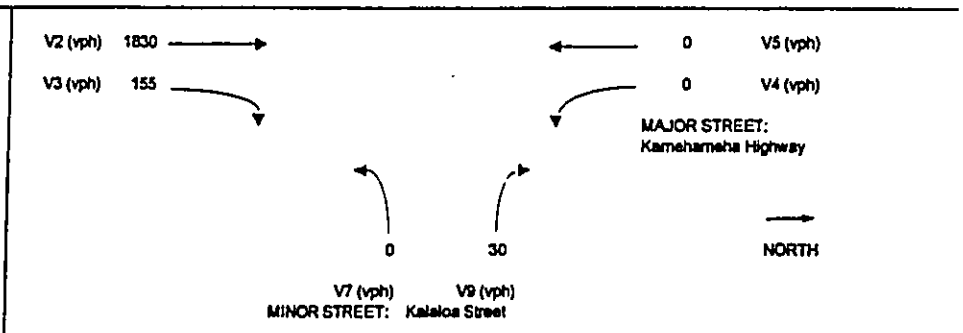
AVERAGE MINOR APPROACH DELAY = 4.67 sec/veh
LEVEL OF SERVICE = A

AVERAGE TOTAL INTERSECTION DELAY = 0.28 sec/veh
LEVEL OF SERVICE = A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kamehameha Highway	Print Date:	09-Jul-01
Minor Street:	Kalaloa Street	Analyst:	NK
Peak Hour:	PM	File Name:	Kam-Kalaloa with
Scenario:	with project		

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	Y
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1926	163	0	0	0	32
VOLUME, v (pcph)	1926	163	0	0	0	35

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	963	=	963 vph
Potential Capacity:	Cp,9 =					450 pcph
Movement Capacity:	Cm,9 = Cp,9 =					450 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1926	=	1926 vph
Potential Capacity:	Cp,4 =					158 pcph
Movement Capacity:	Cm,4 = Cp,4 =					158 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)(1-v5/s5)]					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1926 vph
Potential Capacity:	Cp,7 =					81 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					81 pcph

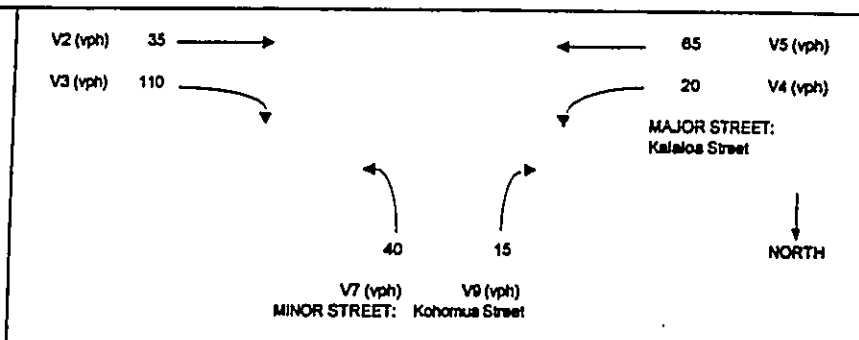
DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	81	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	35	450	450	8.67	B
MAJOR LEFT TURN (4)	0	158	—	22.72	D

AVERAGE MINOR APPROACH DELAY =	8.67	sec/veh	
LEVEL OF SERVICE =	B		
AVERAGE TOTAL INTERSECTION DELAY =	0.14	sec/veh	
LEVEL OF SERVICE =	A		

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kalaloa Street	Print Date:	09-Jul-01
Minor Street:	Kohomua Street	Analyst:	NK
Peak Hour:	AM	File Name:	Kalaloa-Kohomua wth
Scenario:	with project		

Peak Hour Factor:	0.75
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	47	147	27	87	53	20
VOLUME, v (pcph)	47	147	29	87	59	22

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	73	+	47	=	120 vph
Potential Capacity:	Cp,9 =					1204 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1204 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	147	+	47	=	193 vph
Potential Capacity:	Cp,4 =					1387 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1387 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.979
Major Left Shared Lane						
Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.978
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					233 vph
Potential Capacity:	Cp,7 =					776 pcph
Capacity Adjustment Factor						
Due To Impeding Movements:	f7=po,4=					0.978
Movement Capacity:	Cm,7 = f7*Cp,7 =					758 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	59	758	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	22	1204	843	4.72	A
MAJOR LEFT TURN (4)	29	1387	-----	2.65	A

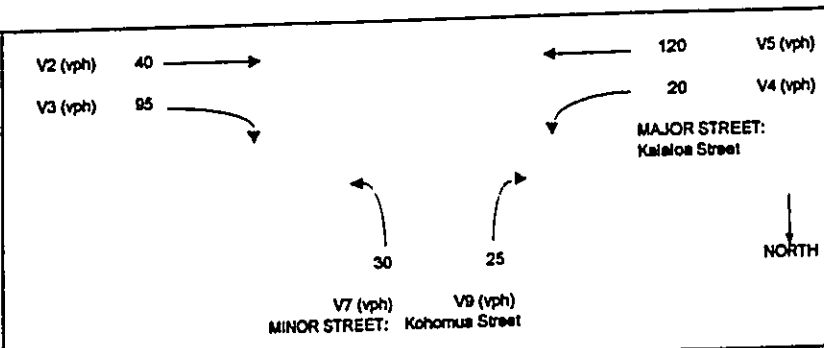
AVERAGE MINOR APPROACH DELAY =	4.72	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	1.18 sec/veh
LEVEL OF SERVICE =	A		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kalaloa Street
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: with project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kalaloa-Kohomua with

Peak Hour Factor:	0.97
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS

MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	41	96	21	124	31	26
VOLUME, v (pcph)	41	96	23	124	34	28

STEP 1: RT FROM MINOR STREET - V9

Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	49	+	41	=	90 vph
Potential Capacity:	Cp,9 =					1246 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1246 pcph

STEP 2: LT FROM MAJOR STREET - V4

Conflicting Flows:	Vc,4 = V3+V2 =	96	+	41	=	139 vph
Potential Capacity:	Cp,4 =					1472 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1472 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.985
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.983

STEP 3: LT FROM MINOR STREET - V7

Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					235 vph
Potential Capacity:	Cp,7 =					774 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.983
Movement Capacity:	Cm,7 = f7*Cp,7 =					762 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	34	762	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	28	1246	925	4.17	A
MAJOR LEFT TURN (4)	23	1472	——	2.48	A

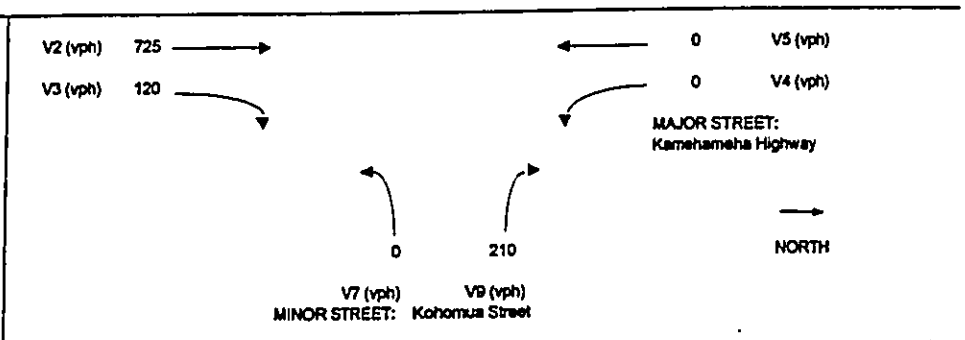
AVERAGE MINOR APPROACH DELAY = 4.17 sec/veh
LEVEL OF SERVICE = A

AVERAGE TOTAL INTERSECTION DELAY = 0.91 sec/veh
LEVEL OF SERVICE = A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kamehameha Highway	Print Date:	09-Jul-01
Minor Street:	Kohomua Street	Analyst:	NK
Peak Hour:	AM	File Name:	Kam-Kohomua with
Scenario:	future with project		

Peak Hour Factor:	0.90
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	806	133	0	0	0	233
VOLUME, v (pcph)	806	133	0	0	0	257

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	403	=	403 vph
Potential Capacity:	Cp,9 =					865 pcph
Movement Capacity:	Cm,9 = Cp,9 =					865 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	806	=	806 vph
Potential Capacity:	Cp,4 =					633 pcph
Movement Capacity:	Cm,4 = Cp,4 =					633 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					806 vph
Potential Capacity:	Cp,7 =					362 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					362 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	362	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	257	865	865	5.90	B
MAJOR LEFT TURN (4)	0	633	——	5.68	B

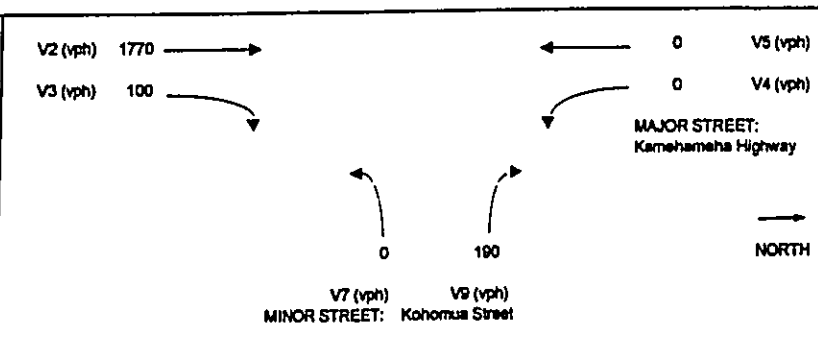
AVERAGE MINOR APPROACH DELAY =	5.90	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	1.27 sec/veh
LEVEL OF SERVICE =	B		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kamehameha Highway
Minor Street: Kohomua Street
Peak Hour: PM
Scenario: future with project

Print Date: 09-Jul-01
Analyst: NK
File Name: Kam-Kohomua with

Peak Hour Factor:	0.95
——MAJOR STREET——	
Num of Lanes - V2:	2
Excl RT - V3 (Y/N):	Y
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	1863	105	0	0	0	200
VOLUME, v (pcph)	1863	105	0	0	0	220

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	0	+	932	=	932 vph
Potential Capacity:	Cp,9 =					467 pcph
Movement Capacity:	Cm,9 = Cp,9 =					467 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	0	+	1863	=	1863 vph
Potential Capacity:	Cp,4 =					171 pcph
Movement Capacity:	Cm,4 = Cp,4 =					171 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					1.000
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-((1-po,4)/(1-v5/s5))					1.000
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					1863 vph
Potential Capacity:	Cp,7 =					88 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					1.000
Movement Capacity:	Cm,7 = f7*Cp,7 =					88 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	0	88	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	220	467	467	14.39	C
MAJOR LEFT TURN (4)	0	171	——	21.01	D

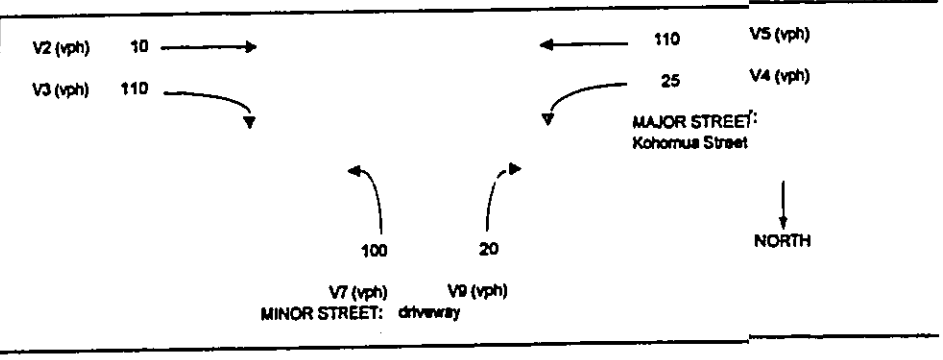
AVERAGE MINOR APPROACH DELAY = 14.39 sec/veh
LEVEL OF SERVICE = C

AVERAGE TOTAL INTERSECTION DELAY = 1.45 sec/veh
LEVEL OF SERVICE = A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street:	Kohomua Street	Print Date:	09-Jul-01
Minor Street:	driveway	Analyst:	NK
Peak Hour:	AM	File Name:	project driveway
Scenario:	with project		

Peak Hour Factor:	0.62
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	12	134	30	134	122	24
VOLUME, v (pcph)	12	134	34	134	134	27

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	67	+	12	=	79 vph
Potential Capacity:	Cp,9 =					1262 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1262 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	134	+	12	=	146 vph
Potential Capacity:	Cp,4 =					1460 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1460 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.977
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)(1-v5/s5)]					0.975
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					244 vph
Potential Capacity:	Cp,7 =					765 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.975
Movement Capacity:	Cm,7 = f7*Cp,7 =					746 pcph

DELAY AND LEVEL OF SERVICE SUMMARY Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	134	746	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	27	1262	600	5.63	B
MAJOR LEFT TURN (4)	34	1460	——	2.52	A

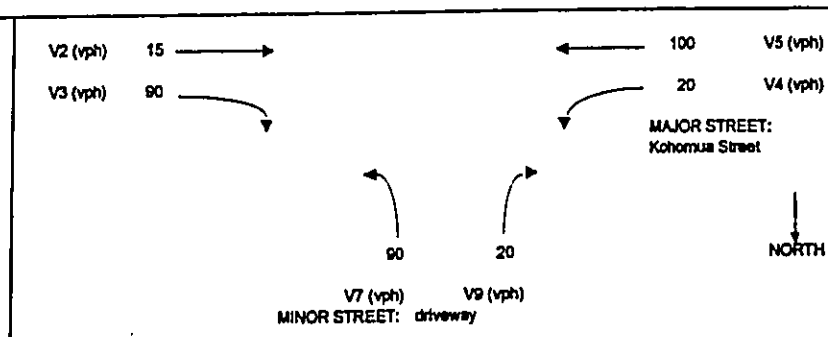
AVERAGE MINOR APPROACH DELAY =	5.63	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	2.09 sec/veh
LEVEL OF SERVICE =	B		LEVEL OF SERVICE =	A

ATA Inc. STOP CONTROLLED T-INTERSECTION LEVEL OF SERVICE ANALYSIS 1994 HCM

Major Street: Kohomua Street
Minor Street: driveway
Peak Hour: PM
Scenario: with project

Print Date: 09-Jul-01
Analyst: NK
File Name: project driveway

Peak Hour Factor:	0.78
——MAJOR STREET——	
Num of Lanes - V2:	1
Excl RT - V3 (Y/N):	N
Stop/Yield - V3 (Y/N):	N
% Grade - V2,V3:	0
Num of Lanes - V5:	1
Excl LT - V4 (Y/N):	N
% Grade - V4,V5:	0
——MINOR STREET——	
Num of Lanes - V7,V9:	1
Shared Lane (Y/N):	Y
% Grade - V7&V9:	0



VOLUME ADJUSTMENTS						
MOVEMENT NO.	2	3	4	5	7	9
VOLUME, V (vph)	19	115	26	128	115	26
VOLUME, v (pcph)	19	115	28	128	127	28

STEP 1: RT FROM MINOR STREET - V9						
Conflicting Flows:	Vc,9 = 1/2*V3+V2 =	58	+	19	=	77 vph
Potential Capacity:	Cp,9 =					1266 pcph
Movement Capacity:	Cm,9 = Cp,9 =					1266 pcph
STEP 2: LT FROM MAJOR STREET - V4						
Conflicting Flows:	Vc,4 = V3+V2 =	115	+	19	=	135 vph
Potential Capacity:	Cp,4 =					1479 pcph
Movement Capacity:	Cm,4 = Cp,4 =					1479 pcph
Prob. of Queue-free State:	po,4 = 1-v4/Cm,4 =					0.981
Major Left Shared Lane Prob. of Queue-free State:	p*o,4 = 1-[(1-po,4)/(1-v5/s5)]					0.979
STEP 3: LT FROM MINOR STREET - V7						
Conflicting Flows:	Vc,7 = 1/2V3+V2+V5+V4 =					231 vph
Potential Capacity:	Cp,7 =					778 pcph
Capacity Adjustment Factor Due To Impeding Movements:	f7=po,4=					0.979
Movement Capacity:	Cm,7 = f7*Cp,7 =					762 pcph

DELAY AND LEVEL OF SERVICE SUMMARY

Movement	v(vcph)	cm(pcph)	csh (pcph)	AVG TOTAL DELAY	LOS
MINOR LEFT TURN (7)	127	762	SHRD	SHRD	SHRD
MINOR RIGHT TURN (9)	28	1266	822	5.40	B
MAJOR LEFT TURN (4)	28	1479	——	2.48	A

AVERAGE MINOR APPROACH DELAY =	5.40	sec/veh	AVERAGE TOTAL INTERSECTION DELAY =	2.03 sec/veh
LEVEL OF SERVICE =	B		LEVEL OF SERVICE =	A