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'93 APR 28 A9:55

IN REPLY REFER TO:

OFC. OF ENVIRONMENTAL QUALITY CONTROL

April 27, 1993

HAR-EP 9778.93

To: Brian J. J. Choy, Director
Office of Environmental Quality Control

From: Rex D. Johnson
Director of Transportation

Subject: FINAL ENVIRONMENTAL ASSESSMENT FOR ACQUISITION OF SUBMERGED LANDS FOR SEVEN COMMERCIAL HARBORS: OAHU, HAWAII, KAUAI, MOLOKAI AND LANAI - JOB H. C. 9061

In accordance with Act 241, SLH 1992, we have completed the Draft Environmental Assessment (EA) 30-day review period for the subject project. Comments received from the public have been addressed and are included in the Final EA. We have determined that the project will not have significant impacts on the environment. Based on the foregoing, we are filing a Negative Declaration.

Enclosed are four copies of the Final EA and a completed OEQC Form for publication in the May 8, 1993 OEQC Bulletin.

Should you have any questions, please contact Randal Leong of the Harbors Division at 587-1880.

Encs.

Ldo

1993-01-23-OA-FEA-Submerged Lands for 7 Commercial Harbors

ENVIRONMENTAL ASSESSMENT
for the ACQUISITION OF SUBMERGED LANDS
for SEVEN COMMERCIAL HARBORS

OAHU, HAWAII, KAUAI, MOLOKAI AND LANAI

Prepared for:
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

RMTC
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APRIL 1993

ENVIRONMENTAL ASSESSMENT
FOR THE
ACQUISITION OF SUBMERGED LANDS
FOR SEVEN COMMERCIAL HARBORS
OAHU, HAWAII, KAUAI,
MOLOKAI AND LANAI

Prepared for:

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HARBORS DIVISION

April 1993

Prepared by:

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420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

TABLE OF CONTENTS

TABLE OF CONTENTS, Contd.

LIST OF FIGURES

EXECUTIVE SUMMARY

In accordance with Chapter 266-1, Hawaii Revised Statutes (HRS), all ocean shores seaward of the shoreline, shore waters and navigable streams, and all harbors and roadsteads, and all harbor and waterfront improvements, belonging to or controlled by the State, and all shipping within the harbors, roadsteads, waters, and streams are maintained and controlled by the State Department of Transportation (DOT). The State DOT is also, according to Chapter 266-2, HRS, responsible for the planning, construction, operation and maintenance of any harbor facility in the State.

All past proposed activities involving such things as maintenance dredging, harbor repairs and construction, etc. that consequently affected submerged lands (i.e., generally lands seaward of the shoreline) in a harbor have required approval from the State Department of Land and Natural Resources (DLNR) through the Conservation District Use Application (CDUA) permit process. All submerged lands in the State of Hawaii are within the State's Conservation District, and as such are regulated by the DLNR. Thus, as long as the submerged land was not yet placed under DOT jurisdiction through an Executive Order (EO) each proposed harbor improvement activity required DOT to apply to DLNR for a CDUA permit.

In 1983, DLNR, in the interest of assisting the DOT in its statewide harbor maintenance and planning effort, recommended that DOT consider, "...submitting a single CDUA requesting establishment of harbor use at those harbors where the submerged lands were not covered under an Executive Order," in order to allow DLNR the opportunity to transfer appropriate submerged lands to DOT in a single action. "In order to facilitate expeditious processing of these (numerous) requests (CDUA permit applications) and thereby benefit both private individuals and government agencies, (we feel that) the problem of jurisdiction over submerged lands in all harbors should be resolved, (Memorandum dated Sept. 13, 1983 from Chairperson S. Ono to DOT Director R .

Higashionna)." Figure 1-1 provides an overview of the process that this proposed action will include.

By establishing proper jurisdiction over submerged lands in harbors through the Executive Order, DOT will be able to execute its functional responsibility in managing the entire harbor. For example, upon approval of a CDUA for harbor use, it is understood that maintenance dredging, harbor repairs, and construction within the submerged lands would not require a new CDUA. This would then leave the DOT to be responsible for submitting four copies of any proposed construction plans to DLNR for review as to their consistency with the purposes of the Executive Order. Ocean areas not acquired by the DOT will remain under the management jurisdiction of the Department of Land and Natural Resources.

Thus, the following Environmental Assessment (EA) is intended to comprehensively address a one time action for acquisition of submerged lands in and within the vicinity of the following commercial harbors:

*Kaunakakai, Molokai
*Nawiliwili Harbor, Kauai
*Port Allen Harbor, Kauai
*Honolulu Harbor, Oahu
*Hilo Harbor, Hawaii
*Kawaihae Harbor, Hawaii
*Kaumalapau, Lanai

A secondary purpose is to acquire access and maintenance easements for DOT in Honolulu Harbor and to avoid any future incremental, piece-meal easement or subdivision requirements for such purposes which have always been time-consuming and cumbersome. Also, access easements for ingress and egress will be granted by DOT to the Division of Boating and Recreation to allow small boat navigation over submerged

PROCEDURE FOR DLNR TO TRANSFER APPROPRIATE SUBMERGED LANDS TO DOT

STEP 1
DOT in Conjunction with R. M. Towill Identify Submerged Lands within 7 Commercial Harbors

→

STEP 2
R. M. Towill Prepares E.A. and CDUA for Subdivision & Use of Submerged Lands

↓

STEP 3
Public Hearings by DLNR on Each Affected Island

↓

STEP 4
DLNR Board Action to:

A. Approve DOT Subdivision and Use of Identified Submerged Land Areas

B. Approve to Recommend to Governor for Issuance of Ececutive Order for Each Harbor, Including Easements of Appropriated

↓

STEP 5
Preparation and Submittal of Survey Maps and Metes & Bounds Description of Submerged Land Areas, Including Easements as Appropriate, to DLNR for Exhibits to Executive Order Documents

lands. The access easements for ingress and egress are anticipated in Nawiliwili, Port Allen, Kaunakakai, Hilo and Kawaihae Harbors. These proposed access easements will be granted subject to the approval of the Board of Land and Natural Resources.

SECTION 1
INTRODUCTION

1.1 Purpose and Need

The purpose of this document is to identify existing environmental conditions of the project areas that are proposed to be acquired and to assess potential impacts on the immediate environment and vicinity that may result from the acquisition of the submerged lands within the seven (7) commercial harbors statewide. The following sections cover general information, descriptions of affected environments, discussion of impacts that may result from the acquisition and potential future development of proposed facilities and measures to mitigate adverse impacts, and the relationship of the proposed actions to various plans and policies of the State of Hawaii, Federal government, and the Counties within which the harbors are located.

An Environmental Assessment (EA) is required when State funds or State lands are used. This EA has been prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 200 of Title 11, Administrative Rules, State of Hawaii Department of Health. Further, this environmental assessment will be used to supplement a Conservation District Use Permit (CDUP) application for the subdivision and transfer of submerged lands from the State of Hawaii Department of Land and Natural Resources (DLNR) to the Department of Transportation (DOT) through Executive Order (EO).

1.2 Background

Historically, a long standing issue concerning ocean-oriented activities has been the overlapping jurisdiction of DLNR and DOT. By law DOT manages the surface water and DLNR the submerged lands (i.e., lands seaward of the shoreline). Some confusion and delays in determining permit requirements for commercial recreational and maritime activities have been attributed to this jurisdictional over lap.

Aware of these problems, DLNR recommended that a single agency should be responsible for management of commercial harbors within the State. The objective then was to transfer limited control over the submerged lands in selected DOT-controlled areas from DLNR to DOT. By consolidating responsibility over the area into one agency, that agency has all the authority to deal with the issues and problems in a logical, controlled manner. The area transferred from DLNR to DOT would encumber lands seaward of the shoreline (beach) to the seaward boundary of the shorewater area.

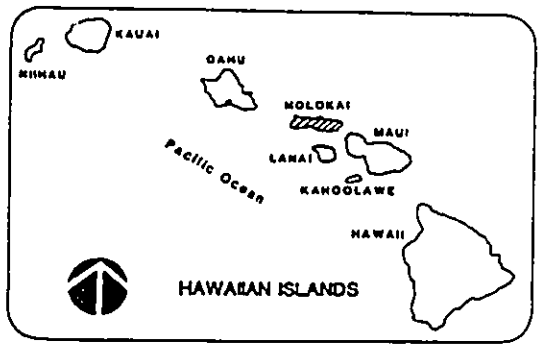
Thus, a comprehensive Conservation District Use Application (CDUA) and environmental assessment package for 7 harbors statewide is being prepared to achieve the objective to simplify the jurisdictional controls within these particular commercial harbors. The designation of DOT as the responsible agency will help the State to more efficiently and effectively plan and implement maritime operations within these harbors in response to the growing shipping needs that are projected throughout the State.

1.3 Project Locations, Ownership

Seven commercial harbors proposed for this action. They are:

* Kaunakakai, Molokai (see Figure 1-2)
* Nawiliwili, Kauai (see Figure 1-3)
* Port Allen, Kauai (see Figure 1-3)
* Honolulu, Oahu (see Figure 1-4)
* Hilo Harbor, Hawaii (see Figure 1-5)
* Kawaihae Harbor, Hawaii (see Figure 1-5)
* Kaumalapau, Lanai (see Figure 1-6)

For general boundary locations for Kaunakai on Molokai, Kaumalapau on Lanai, Nawiliwili and Port Allen on Kauai, Kawaihae and Hilo on Hawaii, and Honolulu Harbor on Oahu see Figures 1-7, 1-8, 1-9, 1-10, 1-11, 1-12 and 1-13.



MOLOKAI

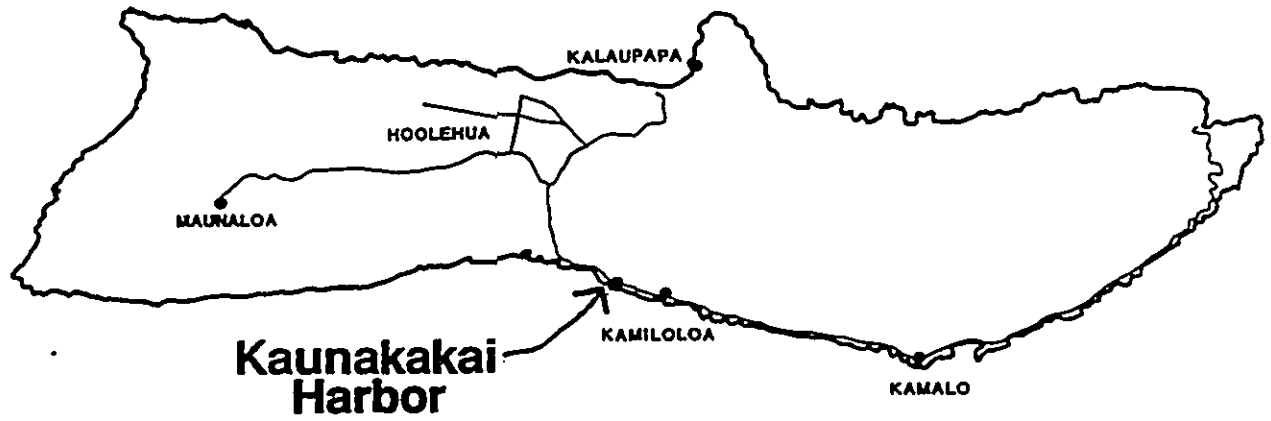


Figure 1-2
LOCATION MAP
Acquisition of Submerged Lands
for Commercial Harbors Statewide

0 6 12
MILES

R. M. TOWILL CORPORATION
OCTOBER 1992

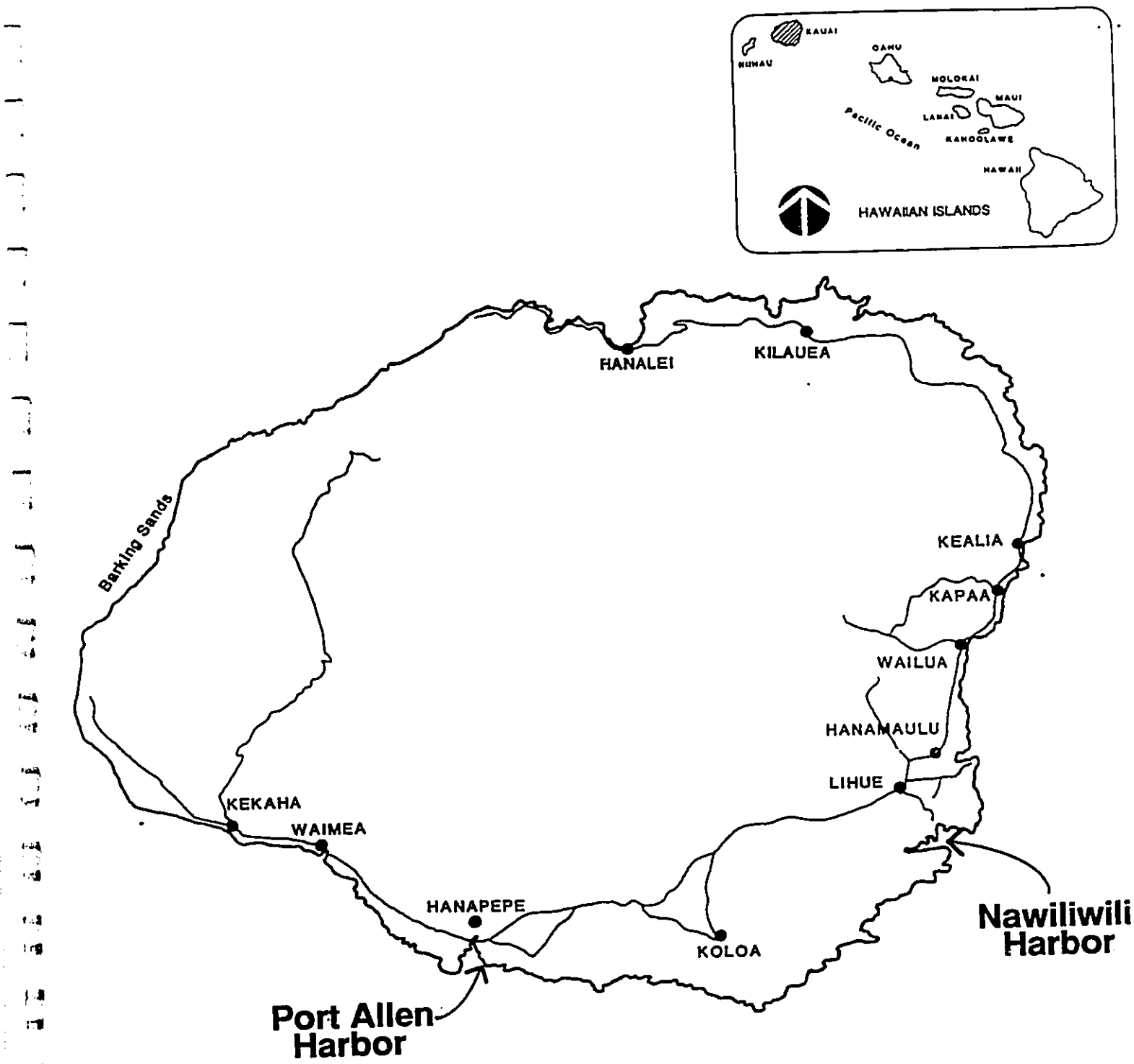


Figure 1-3
LOCATION MAP
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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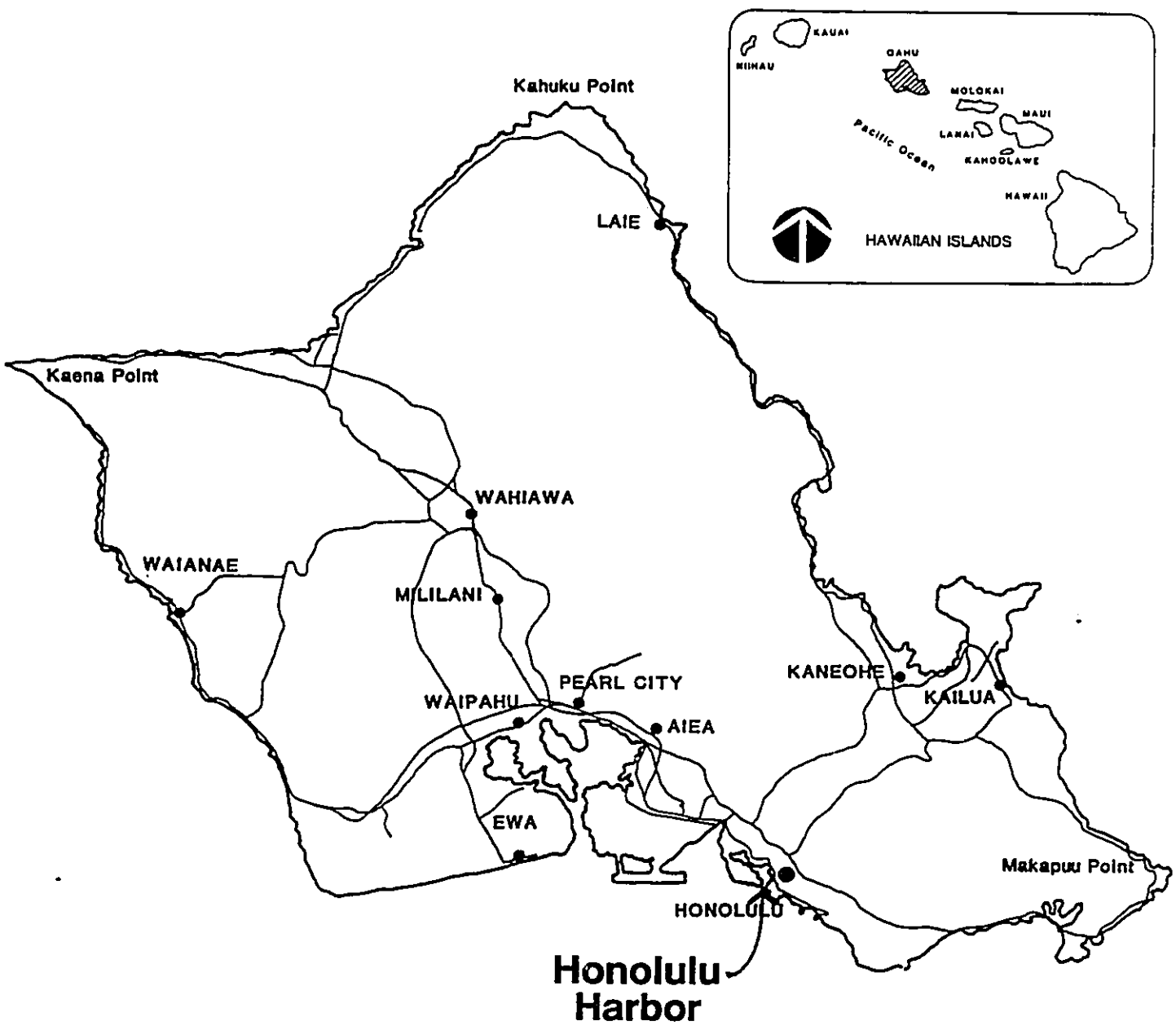

Figure 1-4
LOCATION MAP
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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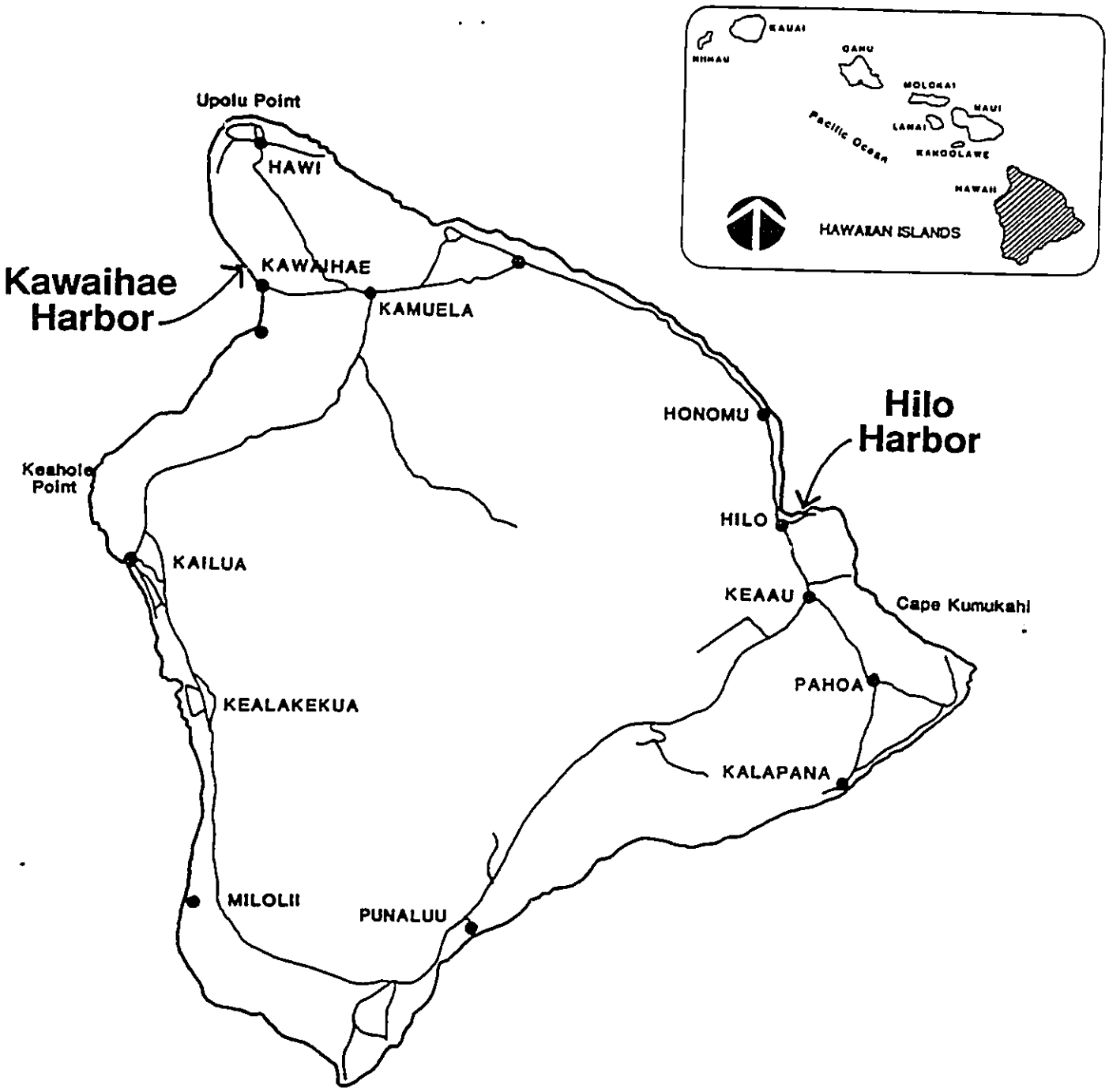

Figure 1-5
LOCATION MAP
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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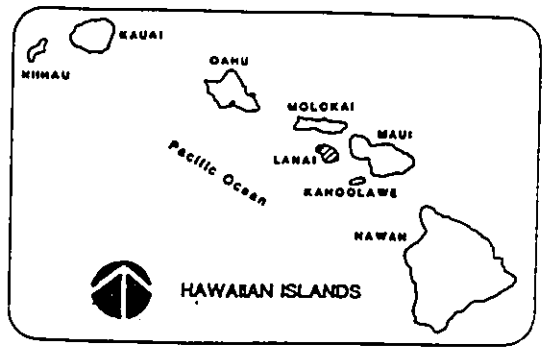
OCTOBER 1992



LANAI

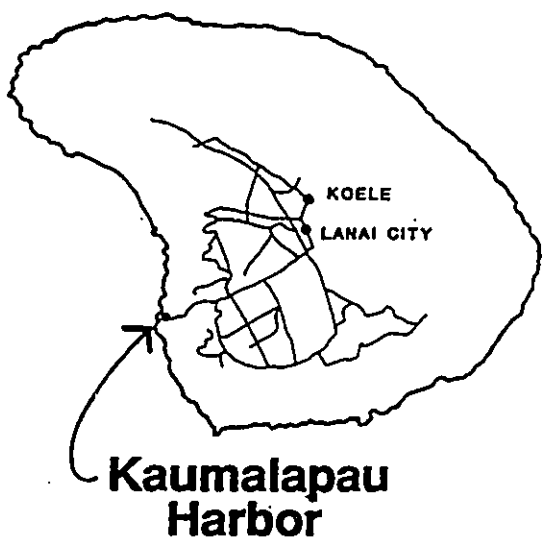


Figure 1-6
LOCATION MAP
Acquisition of Submerged Lands
for Commercial Harbors Statewide

0 6 12
MILES

R. M. TOWILL CORPORATION
OCTOBER 1992

1.3.1 Kaunanakai Harbor, Molokai

The Island of Molokai is serviced by an airport, Kaunakakai Airport, under the jurisdiction of the State of Hawaii Department of Transportation Airports Division, and by a harbor, Kaunakakai Harbor, under the jurisdiction of the State of Hawaii Department of Transportation Harbors Division. Kaunakakai Harbor, a medium draft harbor with a dredged depth of minus 23 FT, provides the primary location for commercial shipping operations on the island of Molokai. A smaller facility services barge operations of food and commodities for the Kalaupapa community on the windward side of the island.

The harbor is located on the south central sector of Molokai at the makai end of the town of Kaunakakai. This harbor is unique among the harbors in the State of Hawaii because commercial harbor and small boat harbor operations, and a number of other activities, all generally occur in the same area. Commercial harbor, small boat docking, and the boat ramp are located west of the pier island. This creates a mix of large ship and small boat traffic within the same area of the harbor.

1.3.2 Nawiliwili Harbor, Kauai

Nawiliwili Harbor is the central shipping port serving the island of Kauai; a secondary harbor area is located along the southwestern shore of Kauai at Port Allen. Historic factors that have accounted for this development will continue to make Nawiliwili Harbor the central shipping and ocean transportation node for Kauai in the foreseeable future.

The breakwater for Nawiliwili Harbor was constructed in 1926. The harbor consists of one entrance channel and a turning basin. Enlargement of the original harbor occurred in 1956 to its present size. During the expansion of the harbor basin, the dredged material was used to create the Niumalu Peninsula. Recent plans for the Lihue-Puhi area include substantial development of residential, recreational, commercial, and industrial activities, all leading to an increased and continuing reliance upon Nawiliwili

Harbor.

1.3.3 Port Allen, Kauai

Port Allen Harbor, located along the southern coast of Kauai in Hanapepe Bay is the island's second harbor. The primary harbor for Kauai is Nawiliwili Harbor. Port Allen Harbor represents one of the eight (8) commercial harbors in Hawaii's Harbor system. The facilities at Port Allen Harbor are now being used by the Navy, as well as for liquid bulk handling, commercial fisheries activities, other maritime commercial activities, and as an alternate port of call for smaller passenger vessels (DOT, July, 1987).

A 2010 Master Plan for Port Allen facilities was prepared in 1987 through a coordinated effort between the Hanapepe Professional and Business Association and the State DOT. The Plan indicated the potential for future improvements to the Port Allen Harbor as follows: "(Port Allen) could play an important supporting role in the economic growth of the area. This facility can provide Kauai with a second harbor if the main facilities at Nawiliwili become inaccessible for shipping."

1.3.4 Honolulu Harbor, Oahu

Honolulu Harbor, located on the southern shore of the Island of Oahu, is the State's principal port. All general cargo, including mainland and foreign containers destined for Hawaii, is received through Honolulu. Cargo with neighbor island destinations is transshipped through the port by feeder vessels.

The harbor is roughly crescent-shaped and is protected from the open sea by Sand Island and adjacent coral reefs. Although entrance to the harbor is accessible via two dredged channels extending in a northerly direction from deep water in Mamala Bay, the easterly Fort Armstrong Channel which extends to the Main Basin (Honolulu Harbor Basin), is presently used: The westerly Kalihi entrance Channel which extends to Kapalama Channel, has not been use for several years due to the shutdown of the bascule bridge operations.

The Honolulu Waterfront Master Plan, prepared by the Governor's Office of State Planning in 1989, calls for specific changes over time in Honolulu Harbor within the context of a comprehensive, long range plan for more efficient and optimal use of available land and pier frontage. Development projects within the harbor are guided by the policies and directions set forth in the 1989 Honolulu Waterfront Master Plan.

1.3.5 Hilo Harbor, Hawaii

Hilo Harbor is the larger of two commercial deep-draft ports located on the island of Hawaii and has handled most of the cargo, agricultural and petroleum shipments in the County. Hilo, located on the northeastern coast of the County, is the major business center of the island. Hilo Harbor is the main port-of-call on the island for oceangoing vessels. Principal imports include general cargo and petroleum products, while exports are primarily sugar and molasses.

The entrance to Hilo Bay separates the cliffs and a coral reef, known as Blonde Reef, is about 1 mile wide with a maximum depth of 60 feet. Blonde Reef extends about 2 miles northwesterly from the southeast side of the bay, with depths varying from 6 to 18 feet. The reef and the existing 10,080-foot long rubble mound breakwater protects the inner bays from storm wave action. The inner bays include Kuhio, Radio and Reeds Bays. Kuhio Bay serves as the deep draft harbor turning basin which is 1,400 feet wide, 2,300 feet long and 35 to 40 feet deep.

1.3.6 Kawaihae Harbor, Hawaii

Kawaihae Harbor is located on the northwestern coast of the Island of Hawaii, approximately 28 miles north of Keahole Airport. It is the second deep-draft port that services the island.

This location is accessible to existing highways and other infrastructure including power and domestic water. The fast and filled lands of the harbor are currently owned by the State of Hawaii and managed by the Hawaii State Department of Transportation,

Harbors Division. The seaward portion, including the protective structures and entrance and access channels, are maintained by the Army Corps of Engineers.

The existing harbor land is partially improved with terminal facilities for inter-island barge operations and overseas shipping. Portions of the back-up areas are on long-term leases for bulk sugar and molasses storage, sugar loading gantries, petroleum product storage, bulk cement storage and fertilizer manufacturing and storage.

1.3.7 Kaumalapau Harbor, Lanai

Kaumalapau Harbor, located on the southwest side of the island approximately four miles north of Palaoa Point (the southernmost extremity of the island), is Lanai's only commercial harbor. Although, a privately operated harbor, certain portions are leased (lease term of 35 years) from the State of Hawaii. However, the lease agreement is due to expire on April 30, 2009 whereupon such portions will revert to the State. Though privately operated, the public interest lies in maintaining a viable harbor facility for the residents on the island. The State of Hawaii is negotiating to acquire the harbor front lands and other harbor operations.

The barge wharf located on the north side of the harbor is protected by a 250-foot breakwater. A lighted buoy off the southern tip of the breakwater marks the 600-foot wide harbor entrance. A turning basin within the harbor measures 800 by 500 feet with 30 to 50 feet depths (U.S. Army Corps of Engineers, "Ports of Hawaii," 1987). The principal waterborne commodities handled at the port are pineapples, liquid and bulk fertilizer, and petroleum products (ibid).

SECTION 2
DESCRIPTION OF PROJECT

2.1 Overview

The proposed project involves the acquisition of submerged lands within and in the vicinity of 7 commercial harbors located on five islands within the State. The affected harbors are Kaunakakai on Molokai, Nawiliwili and Port Allen on Kauai, Honolulu Harbor on Oahu, Hilo and Kawaihae on Hawaii, and Kaumalapau on Lanai (see Figures 1-7 through 1-13 for general locations).

The submerged areas that have been defined and identified as project boundaries as shown for acquisition purposes are conceptual and actual metes and bounds will be required for subsequent subdivision process that will be reviewed and acted upon by the Board of Land and Natural Resources. Each of the 7 project boundaries were drawn using the following criteria:

1. Water areas within the harbor basin that have not yet been transferred from DLNR to DOT by Executive Order.

2. Water areas within the given Federal Project Limit line.

3. Seaward boundary of the entrance channel preliminarily determined by the maintenance marker buoy found on harbors maps prepared by the Federal Department of Commerce.

2.2 Project Areas

The following are approximate amounts of submerged land areas in each of the 7 harbors DOT proposes to acquire:

	Area (acres)
1. Kaunakakai Harbor (Fig. 1-7)	14.8 acres
2. Nawiliwili Harbor (Fig. 1-8)	152.4 acres
3. Port Allen Harbor (Fig. 1-9)	63.0 acres
4. Honolulu Harbor (Fig. 1-10)	310.0 acres
5. Hilo Harbor (Fig. 1-11)	810.0 acres
6. Kawaihae Harbor (Fig. 1-12)	135.0 acres
7. Kaumalapau Harbor (Fig 1-13)	19.0 acres

2.3 Proposed Easements

New easements that DOT proposes to request and grant are as follows:

2.3.1 Honolulu Harbor

Provided the responsibility for maintenance dredging remains with DOT-Harbors, DOT plans to request an easement for this purpose from the Hawaii Community Development Authority of a four-acre submerged land section located along the southwestern boundary of Pier 1 at Fort Armstrong (shown as a hatched triangular parcel in Figure 1-10). Likewise, DOT plans to request an easement from DLNR for a .045 acre area of submerged lands on the northeast coast of Sand Island (see Figure 1-10 also). This submerged land area is currently under lease (General Lease S-5219) to AT&T for a cable ship landing site on Sand Island.

2.3.2 Nawiliwili, Port Allen, Kaunakakai, Hilo and Kawaihae Harbors

Access easements for ingress and egress purposes will be granted by DOT to the Division of Boating and Recreation (DBOR) of DLNR to allow small boat navigation over submerged lands. These proposed access easements will be granted subject to the approval of the Board of Land and Natural Resources.

SECTION 3

DESCRIPTION OF THE ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

3.1 Pier Environment

3.1.1 Climate and Air Quality

3.1.1.1 Kaunakakai Harbor, Molokai

The town of Kaunakakai is generally very dry, receiving an average annual rainfall of about 14 inches. Recorded temperatures closest to Kaunakakai Harbor are at Molokai Airport which showed 70.2 degrees Fahrenheit in the coolest month and 77.6 degrees Fahrenheit in the warmest month. The winds off Kaunakakai are predominantly northeasterly tradewinds. However, as these winds round the eastern tip of the island and veer westerly along the southern coast, they produce easterly prevailing winds at the harbor.

The low level of residential and commercial development in the Kaunakakai area, the lack of major stationary sources of air pollution, and the trade wind conditions would indicate air quality is good for this area of Molokai. The only sources of pollution would be from vehicles travelling in the area. However, these mobile sources would not be expected to significantly degrade air quality.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.2 Nawiliwili Harbor, Kauai

The climate of the project area is typical of the eastern coastal regions of the Island of Kauai. The area is characterized by light tradewinds, equable temperatures, and moderate rainfall. The predominant wind regime is the northeast tradewinds that blow approximately 75 percent of the time with velocities ranging from 8 to 24 miles per hour. The tradewinds are sometimes interrupted by cyclonic storms referred to as "Kona winds"

that blow from the south, usually during the winter months. Mean monthly temperatures of the project area range from 65 degrees F. in January and February to about 85 degrees F. during July and August. Rainfall amounts for the project area average 40 inches per year with the larger amounts occurring during November and December.

Air quality of the project site and vicinity is impacted by shipping and industrial activity within the Nawiliwili Harbor area. Air pollutants of the area may include particulate matter, dioxides, and carbon monoxide. Contributors to air pollutants include vehicle and vessel emissions in the harbor area.

Despite the presence of these pollutants, ambient air quality of the harbor area is good due to the northeast tradewinds that predominate throughout the year.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.3 Port Allen, Kauai

Port Allen is on the southerly, or leeward, side of the island of Kauai and has less rainfall than the east and north, or windward, sides.

Normal annual rainfall at Port Allen is about 30 inches. Three-fourths of this amount falls during the wet season, October through March. The wettest month normally is January with about 4.8 inches and June the driest with 1.0 inch. The average monthly temperatures range from 78.6 degrees F. in January to 85.2 degrees F. in September.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.4 Honolulu Harbor, Oahu

Climate of the project area and vicinity is typical of the leeward coastal

climate of Oahu. The area is characterized by light tradewinds, equable temperatures, and moderate average rainfall. The predominant wind regime is from the northeast, blowing approximately 75 to 80 percent of the time with mean velocities ranging from 8 to 24 miles per hour. Average daily temperatures of the area vary slightly (approximately 7 degrees F) between the warmest and coolest months of a typical year. Maximum temperatures range from the high 70's in the winter to the high 80's in the summer and minimum temperatures range from the mid 60's to the low 70's, respectively. Rainfall of the area is moderate, average 20 to 25 inches a year. Rainfall amounts may vary considerably from month to month with much of the rainfall occurring between November and April.

Air quality of the project site and vicinity is impacted by industrial land use and shipping activity along the Honolulu waterfront. Air pollutants of the area include particulate matter, sulfur dioxides, nitrogen dioxide and carbon monoxide.

Despite the presence of these pollutants, ambient air quality of the area is good due to the northeast tradewinds that predominate throughout the year and blow pollutants seaward. Any problems with poor air quality would most likely occur during southerly winds.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.5 Hilo Harbor, Hawaii

The average annual temperature at Hilo is 73 degrees F. The highest average monthly temperature is 76 degrees F in August and September and the lowest average monthly temperature is 71 degrees F for January to March. Within the city of Hilo itself, average rainfall varies from about 130 inches a year near the shore to as much as 200 inches in mountain

sections. Rain falls on about 280 days a year in the Hilo area. The winds approach Hilo Bay primarily from the southwest (SW) and west southwest (WSW) directions rather than the typical northeasterly trade direction for the islands. Winds are predominantly from the SW and WSW during the night and early morning hours, with winds generally shifting to the typical trade direction by late morning.

Air quality in Hilo is good, lacking major industrial emissions. Volcanic gases, agricultural fires, sugar mills, both aircraft and automotive engines and the power plant are the only major sources of air pollution in the Hilo area.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.6 Kawaihae Harbor, Hawaii

The general climate of Kawaihae is typical of the leeward sides. During most of the year, rainfall is sparse and winds are light and variable. The area is semi-desert: sunshine predominates, soil is thin, vegetation is scanty and composed of hardy, drought-resistant plants. Temperatures vary from warm during the night to hot during the day. The average annual high temperature for the Kawaihae area is 83.4 degrees F, while the average annual low is 67.0 degrees F. Rainfall for the area is an average 16.33 inches annually.

Because Kawaihae Bay lies nestled at the base of the coalescing slopes of the three mountains Kohala, Mauna Kea, and Hualalai, winds are very unpredictable. Additionally, temperature variations in the specific heats of water, air, and land affect ther land and sea breeze setup, causing the wind patterns to change from morning to afternoon. General patterns are:

1. Normal tradewinds from the north-northeast dominate about 75% of the time at Kawaihae.

2. When tradewinds reach velocities in excess of 20 knots, the wind may approach Kawaihae from easterly headings.

3. Eddies probably characterize much of the wind pattern setup by topographic effects.

4. The harbor area is protected to a great extent against northeasterly storms by the Kohala Mountains and against southerly storms by the promontory to the south.

The typical day begins with westerly winds at five to eight miles per hour at 9:00 to 10:00 a.m. These winds blow continuously throughout the day until 7:00 to 10:00 p.m., during which time the winds usually shift to easterly at seven to ten miles per hour and continue until three to four hours after sunrise. During wind shift times, the wind speed is rather light and the direction is quite variable. During the winter months, the steady pattern of the tradeinds occasionally beaks down for periods of several days. During these periods "Kona" (leeward) storms may occur, bringing fresh to strong southwesterly winds and heavy rains.

The quality of the air in the Kawaihae area has generally been considered good. The Kona coast of the island is subject to temperature inversions during the early morning and early evening hours; however, the quantity of hydrocarbon emissions generated in the Kawaihae area is too small to be of any concern. The prevailing winds disperse and transport any hydrocarbon emissions out to the sea or over uninhabited land areas.

The proposed acquisition will have no impact on the climate of the region.

3.1.1.7 Kaumalapau Harbor, Lanai

The climate of Lanai is generally mild with fairly uniform temperatures throughout the year. Since a large segment of Lanai is at a fairly high elevation (1,000 feet or more above the mean sea level), the average temperatures are cooler than most of the other islands.

The rainfall on Lanai is relatively low due to the shielding effects of the rain-producing tradewinds by the Islands of Maui and Molokai.

Prevailing winds serve to disperse the incremental pollutant effects from the Lanai Airport, located mauka and approximately 2 to 3 miles east of the harbor.

The proposed acquisition will have no impact on the climate of the region.

3.1.2 Harbor Landside Uses, Surrounding Land Uses, Encumbrances

All port facilities at each of these 7 ports are under the jurisdiction of the State of Hawaii Department of Transportation, Harbors Division.

3.1.2.1 Kaunakakai Harbor, Molokai

Kaunakakai Harbor currently includes a 1,700 FT long causeway or mole which connects the 6.44 acre pier island to the town of Kaunakakai. On the northwest side of the pier island, the major features are a small boat dock area with space to accommodate 10 boats and a small boat launching ramp. On the east side of the pier island, a second small boat docking area and breakwater system to protect the harbor accommodates 20 small boats.

On the landside, the area near the causeway includes several types of light industrial, recreational, and residential land uses. The industrial uses include fuel storage tanks, storage buildings, temporary cattle pens, and material storage areas.

Recreational use includes canoe storage areas and a small beach area used by canoe paddlers to launch and retrieve their canoes. The State Department of Business, Economic Development and Tourism (DBEDT) has recently begun planning for a new park area currently used for canoe activities.

Residential areas and a hotel are located along the shoreline primarily to the east of the causeway.

Ownership of the project site will change but harbor land side and surrounding land uses will be unchanged.

3.1.2.2 Nawiliwili Harbor, Kauai

Existing land uses in the vicinity if the project area include: Niumalu Village and other residential single- and multi-family units located west of the site; container shipping operations; cruise ship docking, and other harbor related activities located north of the site; and the Small Boat Harbor located south of the project area.

Niumalu Peninsula, located on the westerly side of the harbor is the site for a new Pier 3 facility and container yard. Existing use of the peninsula is related to a variety of small-scale activities, currently under revocable permits to various tenants. Among the types of activities are a number of open storage areas as well as lumber storage, and an automobile storage area. The Gas Company (Gas Co) also has a facility located on the

peninsula site under long-term lease from the Department of Land and Natural Resources (DLNR).

Existing public access to the peninsula area is open and currently allows for some shoreline fishing and passive recreational activities on the peninsula.

Ownership of the project site will change but harbor land side and surrounding land uses will be unchanged.

3.1.2.3 Port Allen, Kauai

Waterfront facilities at the port are on the east side of a dredged harbor basin and consist of a pier for accommodating deep-draft, oceangoing vessels and a small boat harbor protected by breakwaters. The pier and harbor basin are protected by a 1,200-foot long, rubblemound breakwater parallel to the south side of the basin. Hanapepe River enters Hanapepe Bay from the north. Paakahi Point is on the west side of the entrance to the bay. Entrance to the harbor basin is from the south via a dredged channel from deep water. The principal waterborne commodities handled at the port are molasses, petroleum products, and bulk liquid fertilizer.

Ownership of the project site will change but harbor land side and surrounding land uses will be unchanged.

3.1.2.4 Honolulu Harbor, Oahu

Waterfront wharf facilities for deep-draft vessels are located along the sides of the Main and Kapalama Basins, the connecting Kapalama Channel, and easterly side of the Fort Armstrong Channel entrance to the port. The major container handling facilities are located on Sand Island along the south side of Kapalama Channel and Basin.

There are about 258 acres of land in Honolulu Harbor devoted to cargo transfer and storage activities. Mainland and foreign containers are handled at Fort Armstrong, Piers 1 and 2; and Sand Island, Piers 51-53. Neighbor island containers are handled at Piers 24-29.

Immediately adjacent to and north of the working harbor is the central business district of Honolulu and urban fringe areas including Kakaako, Chinatown and Iwilei that contain new and established residential areas such as high rise condominiums in Kakaako Mauka, and the Kalihi Kai mixed use district abutting Kapalama.

Ownership of the project site will change but harbor land side and surrounding land uses will be unchanged.

3.1.2.5 Hilo Harbor, Hawaii

The city of Hilo is situated along the shoreline of Hilo Bay and is a fully developed urban area. The University of Hawaii-Hilo campus is located in the city together with the main county hospital, shopping centers and a variety of other commercial establishments.

Hilo Harbor is the principal port-of-call and handles most of the cargo, agricultural and petroleum shipments in the County.

The Hilo Bay shoreline is developed park open space as a result of local land use zoning in the tsunami hazard area. Boating, recreational fishing, canoeing, and surfing are the significant water contact recreational activities in the bay. Commercial fishing in the bay has declined although the principal commercial fishing facility in the region is located at Suisan Harbor in the mouth of the Wailoa River.

Ownership of the project site will change but harbor land side and surrounding land uses will be unchanged.

3.1.2.6 Kawaihae Harbor, Hawaii

The deep draft harbor is approximately 85 nautical miles from Hilo Harbor. On-shore facilities include a 605 foot concrete deep draft wharf; a 410-foot concrete barge landing; three general cargo sheds; a large bulk sugar shed with conveyor and dockside loading facility; pipelines and tank storage for fuels, liquid fertilizer and molasses; a cattle-loading chute and corral; a 35-acre area for storage and handling of containers, general cargo and pumice; a dry fertilizer manufacturing plant; a wood chip processing facility; and Kawaihae military reservations. Two small boat harbor facilities exist within the harbor, a ten foot deep, 250-foot square basin at the north end of the site adjacent to the barge wharf, and a ten foot deep, 250-foot square basin with mooring facilities at the southeast end of the harbor adjacent to the overseas wharf. Both small boat harbors are adjacent to the sloping riprap shoreline (both cemented and uncemented) and each provide timber catwalks.

The 77-acre Puukohola Heiau National Historic Site and the adjacent Samuel Spencer County Park lie immediately south of the project area. Approximately 1.5 miles south of the site lies the Mauna Kea Beach Hotel, overlooking Kaunaoa Beach.

The shoreline of Kawaihae Bay is predominantly rocky with numerous low sea cliffs. Several small pocket beaches occur along the shoreline south of the existing harbor. One of these sand beaches fronts Samuel Spencer County Park, and the other beach fronts the Mauna Kea Beach Hotel.

Ownership of the project site will change but harbor land side and

surrounding land uses will be unchanged.

3.1.2.7 Kaumalapau Harbor, Lanai

The facilities and equipment at Kaumalapau are geared for the transferring of pineapple bins to and from barges. Due to steep sloping terrain, use of the adjacent areas for direct support of cargo handling are limited. Most of the useable space is dedicated to the movement of pineapple.

The majority of the commodities required by the community is shipped by the pineapple barge operators (some required perishables and equipment parts are flown in daily). Petroleum products are delivered in bulk by a separate barge service.

The population of the island is projected to double in the next 20 years, from 2,250 to over 4,000 due to the proposed hotel and related developments on Lanai. The primary source of population growth will be the increase in resident workers needed to support hotel activities. An estimated 1,000 daily visitors will also add to the resident population base.

As stated earlier, jurisdiction over the submerged land areas within the harbor will change from DLNR to DOT Harbors but Castle & Cooke continues to lease the land. When the leased agreement expires on April 30, 2009, all leased portions will revert to the State. Existing harbor land side uses and surrounding land uses will not be impacted by the proposed transfer of jurisdiction.

3.1.3 Flora and Fauna

3.1.3.1 Kaunakakai, Molokai

Shoreline vegetation in the Kaunakakai area consists mainly of kiawe,

haole koa, finger grass and pili grass. Along the shoreline west of the harbor, very dense growths of mangrove have developed. The entire surface of the causeway and pier island at Kaunakakai Harbor is paved or concreted. No natural vegetation occurs on this surface.

Major terrestrial animal populations of Molokai include introduced feral mammals (deer, goat, mongoose, wild pig), and approximately nine species of birds, of which six are considered endangered. Two of these endangered species are endemic to the island of Molokai. None of these animal species inhabits the pier. Some species of birds and feral mammals such as cats, dogs, and rats may sometimes appear at the pier.

No impacts to the flora and fauna are expected from this project.

3.1.3.2 Nawiliwili, Kauai

Vegetation at the project site consists of mainly introduced species. No endangered flora species are known to exist on the project site. No threatened or endangered fauna species are known to inhabit the area.

No impacts to the flora and fauna are expected from this project.

3.1.3.3 Port Allen, Kauai

The flora of the entire project area has been significantly altered from its original native composition and is dominated, except in the immediate coastal area, by non-indigenous vegetation. Exotic vegetation is dominated by koa-haole, kiawe, and guinea grass. The immediate coastal area harbors a variety of indigenous vegetation including beach naupaka, tree heliotrope, and the mat-forming beach morning glory.

The fauna found in the vicinity of the project site includes mainly

introduced mammals and birds. Introduced mammals are likely to include the Small Indian mongoose, rat, mouse, and an occasional feral cat or feral dog. Two endemic mammals, both federally-listed endangered species, may occasionally occur in the vicinity of the proposed project site. The Hawaiian Hoary Bat is one of the state's two native mammals. The Hawaiian Bat, a subspecies of a mainland bat, is a secretive, crepuscular animal and is most commonly associated with coastal areas. The Hawaiian Monk Seal, the second of the state's two native mammals, can be regarded as a "straggler." The range of the Hawaiian Monk Seal is largely restricted to the Leeward Islands, though sightings have occurred in recent years around Kauai. A small colony presently exists on Lehua Island and at Niihau.

Common birds associated with the area include the native Golden Plover, the Barred Dove, Lace-necked Dove, and the Common Mynah. The only terrestrial endemic bird known to occur in the vicinity of the project site is the endangered Hawaiian Short-eared Owl or pueo. Nine species of indigenous birds (including winter migrant species) have a range which may include the project area. These include the Laysan Albatross, Wedge-tailed Shearwater, Brown Booby, and Black Noddy Tern.

The threatened green sea turtle has been seen in the vicinity of the project area.

No impacts to the flora and fauna are expected from this project.

3.1.3.4 Honolulu Harbor, Oahu

Surrounding the project site are developed areas extensively paved with asphalt. As a result, no natural flora or fauna habitats exist. A limited

number of planted trees and ornamental shrubs occur within grassy areas. The lack of vegetation and constant urban activities result in poor habitat for wildlife. Species which consist of rodents, finches, sparrows, doves, and geckos. No officially listed, proposed, threatened, or endangered plant or animal species designated by the Federal and/or State governments are known to occur in the project area.

No impacts to the flora and fauna are expected from this project.

3.1.3.5 Hilo Harbor, Hawaii

Hilo Bay shoreline is developed park open space as a result of local land use zoning in the tsunami hazard area. Residences are located along Baker's Beach and on Waiakea Peninsula along Banyan Drive. The developed nature of the shoreline and the high urbanized nature of the area preclude significant vegetation and wildlife habitats, except in Waiakea Pond on Wailuku river.

The only endangered species observed at the project site was the Hawaiian coot, which was reported nesting in Mouholi Pond within Waiakea Pond. The pond has not been declared a wildlife refuge or critical habitat for the coot by the US Fish and Wildlife Service. During the winter season, migratory ducks are frequently seen in Waiakea Pond.

No impacts to the flora and fauna are expected from this project.

3.1.3.6 Kawaihae Harbor, Hawaii

The Kawaihae region supports an arid, desert-like vegetation. The soil is the reddish-brown variety typical of Hawaii's desert regions and supports a small number of grasses, hardy shrubs such as the haole koa, ilima, and kolu; and the kiawe tree. Other trees including monkeypod, beach

heliotrope, milo, kou, and coconut grow along the shore where groundwater is available. A row of coconut trees is planted in a strip along the landfill margin at the project site, approximately 200 feet inland from the water's edge, parallel to the shoreline. Beach naupaka has been planted as ground-cover beneath the palm trees.

A Bird and Mammal Survey of Army Lands in Hawaii identified the terrestrial biota on and in the vicinity of the Kawaihae Military Reservation, which is located within the existing deep-draft harbor. Recorded non-game birds consist of the Japanese White-eye and the House sparrow. Bird species found occasionally in the open landfill and occasionally feeding along the shoreline are the Wandering Tattler, the Ruddy Turnstone, and the American Golden Plover. Additional bird species may include the Cardinal, House Finch, Warbling Silverbill, Spotted Dove, and Barred Dove. The Nene or Hawaiian Goose visited the area irregularly until removed and released elsewhere by government biologists. This location is far from the normal range of the Nene.

No Federally or State listed threatened or endangered species utilize the project area as a critical habitat, nor is the project area located within or adjacent to any designated wildlife refuge, marine sanctuary, or natural area reserve.

No impacts to the flora and fauna are expected from this project.

3.1.3.7 Kaumalapau, Lanai

Vegetation around Lanai City is predominantly pineapple. There are no endangered plant or animal species.

No impacts to the flora and fauna are expected from this project.

3.1.4 Archaeological Resources

3.1.4.1 Kaunakakai, Molokai

Construction of the Kaunakakai Pier began in 1899 and has undergone numerous modifications since that time. Except for portions of the pier which are pile supported, the causeway and pier have been constructed of fill material. There are no archaeological features or significant historic sites on the causeway or pier.

The proposed acquisition will have no impact on archaeological resources.

3.1.4.2 Nawiliwili, Kauai

According to Wendell Bennett there are no heiaus located in the project vicinity (Hawaiian Hostorical Society, Papers, No. 17).

The proposed acquisition will have no impact on archaeological resources.

3.1.4.3 Port Allen, Kauai

According to Wendell Bennett there are no heiaus located in the project vicinity (Hawaiian Hostorical Society, Papers, No. 17).

The proposed acquisition will have no impact on archaeological resources.

3.1.4.4 Honolulu Harbor, Oahu

A historic site and district are located near the project area. Aloha Tower is located at Honolulu Harbor, makai of Nimitz Highway, near Irwin Park and the harbor end of Fort Street Mall. The Aloha Tower was at one time the tallest and most prominent building in Honolulu. It is a symbol of Hawaii's investment in tourism and of a time when sea travel was the main link with the rest of the world. When the tower was finally completed and turned over to the Board of Harbor Commissioners in June, 1926, it was

the pride of the islands. It was by far the most imposing building in the territory and offered a spectacular view of Honolulu and its harbor. Then as now, it housed various offices, including the Harbor Master's office.

Aloha Tower still stands to welcome visitors and the harbor pilots still carry out their jobs from the tenth floor observation area. The tower is a reminder to all people of the hospitable nature of the Fiftieth State, and it is a symbol of a day when travel was more than going from one point to another, but an adventure in grace and comfort.

The Chinatown Historic District is located in downtown Honolulu and is generally bounded by Nuuanu Avenue, River Street, Nimitz Highway, and Beretania Street. Chinatown was first settled by the Chinese in the 1800's. By 1884, the Chinese population in Honolulu had reached 5,000, but the number of Chinese engaged in plantation work had declined. Seventy-five percent of these Chinese were concentrated in the twenty-five acres of Downtown call Chinatown.

Chinatown is on the National Register as historically significant because it is the oldest part of downtown Honolulu with contiguous architecture and usage. Chinatown is the earliest ethnic community in Honolulu and still retains a distinctive cultural environment. Most of its merchants are Chinese, but its resident population has shifted to include a variety of ethnic groups, the largest of which is Filipino. Chinatown buildings which are considered to be of historical significance were constructed in the first decade of the 20th century, after the Chinatown fire in 1900. These buildings are primarily simple, two-and three-story structures of common materials.

The proposed acquisition will have no impact on archaeological resources.

3.1.4.5 Hilo Harbor, Hawaii

Hilo Breakwater is eligible for inclusion on the National Register of Historic Places, based on its role in the development of Hilo port. The breakwater is also associated with events that facilitated the expansion of the railroad and port facilities in the Hilo area, the reestablishment of Hilo as the hub of transportation on the island of Hawaii, and the growth of Hilo. The breakwater is also the longest in the State of Hawaii, and has essentially maintained its physical integrity despite alterations to its original design, function and visual appearance. For 50 years the breakwater has been a major visual element in Hilo Bay despite damage by tsunamis.

The proposed acquisition will have no impact on archaeological resources.

3.1.4.6 Kawaihae Harbor, Hawaii

No historical or archaeological sites listed with the National Register of Historic Places lie within the project landfill or water area. Approximately 600 feet to the south, however, is the Pu'ukohola Heiau National Historic Site, a 77-acre area consisting of three ceremonial Hawaiian temples, petroglyphs, and the John Young Homesite. Two of the temples, the Pu'ukohola Heiau and the Mailekini Heiau, are located 700 feet from the project site near the beach at the mouth of the Makeahua Gulch. The third is the Haleokapuni Heiau, which is believed to be submerged and buried offshore, its exact location having been lost.

The Pu'ukohola Heiau is the largest of the three, dominating the site 135 feet above the nearby beach. It is a massive lava-rock structure measuring 225 by 100 feet which is walled on the ends and mauka side by 40- to 50-foot sloping walls. The seaward side is open with three long, narrow terraces extending the entire length of the heiau. The structure is partially restored and in excellent condition, walks and steps rendering it accessible

to the public.

The Pu'ukohola Heiau was built by King Kamehameha, his chiefs and his workers, in 1791 for the war god Kukailimoku in order to win his favor and conquer all of the Big Island of Hawaii. It was during and after this time that King Kamehameha the Great rose in power, eventually to become the first king in Hawaii to rule all of the major islands in the chain. Because Pu'ukohola played a significant part in Kamehameha's accumulation of power, the temple is listed in the National Register of Historic Places. During Project Tugboat detonations, precautions were taken to monitor and minimize structural damage to the heiau, and the explosions did not appear to cause any visible damage.

The Mailekini Heiau, immediately below Pu'ukohola, was erected earlier as a large, high-walled, court-type luakini heiau and represents the interchiefdom and inter-island warfare of the period before 1780 when it served as the principal temple of the ruling chief Kohala. The main platform measures 300 by 400 feet, but only the partially restored ruins remain today.

The Haleokapuni Heiau was dedicated to the shark gods and is said to have been used by Kamehameha as a heiau for feeding sharks. The heiau is now submerged under silt, although positive evidence of a structure and its exact locations is lacking. Personal accounts recall structure about 30 meters offshore and directly in line with the Pu'ukohola and Mailekini Heiaus. During the construction of the large harbor, a quarry was opened in the uplands between Makeahua and Makahuna gulches. The size and configuration of the harbor resulted in the relocation of the gulches which now converge between the harbor fill area and the proposed historic site. It is believed that sediment from the quarry operations buried the

Haleokapuni Heiau immediately following the period of major construction (1957-1962). Recent archaeological surveys have failed to produce the presence of any sub-surface structures in the area. The site currently is an area of concentrated shark activity, which reinforces the historic significance of the shark heiau.

Directly below the Mailekini Heiau is the large, five-foot-high upright stone known locally as "Kamehameha's chair." The seat was said to be used by Alapai-Kupalupalu-mano, one of Kamehameha's staff chiefs and also by Kamehameha as he observed the proceedings at Haleokapuni Heiau, which the seat faces.

Other historical features within the proposed national historic site include pictographs recently discovered on the lava outcroppings north of the Pu'ukohola Heiau. The archaeological or historical value of the pictographs has not yet been established.

Further to the north, on the other side of State Route 26 and within the proposed historic site, lies, the John Young Homesite. John Young was a British seaman who took part in Kamehameha's many battles and represented the alii (royalty) in their dealings with foreign visitors. Young remains an especially important figure in Hawaiian history because he was associated with events which led Hawaii into the American sphere of influence. Little remains of the homesite except the foundations of two western-style houses and two Hawaiian-style houses. The homesite reflected the first European-type structures built in the Hawaiian Islands, and is considered a "transition" site. The remaining structures have been damaged over a period of time as a result of earthquakes, highway traffic vibrations, and blasting operations from the nearby quarry.

Plans for the Pu'ukohola Heiau National Historic Site include providing an orientation and cultural center with walks and trails leading to the heiaus and other related exhibits. Plans also call for relocating Route 26 outside the historic site and providing parking and an entrance road connecting Route 26 and Spencer County Park.

The proposed acquisition will have no impact on archaeological resources.

3.1.4.7 Kaumalapau, Lanai

The proposed acquisition will have no impact on archaeological resources.

3.1.5 Geology and Hydrology

3.1.5.1 Kaunakakai, Molokai

Three volcanoes built Molokai. The western one, known as West Molokai, is 1,381 feet high and about 12 miles across. The eastern one, East Molokai Mountain, is 4,970 feet high, 27 miles long from north to south, and 8 miles wide from east to west. A smaller and much later volcano forms the Kalaupapa Peninsula on the north coast of the eastern volcano.

The rising and receding of the ocean has caused a narrow fringing reef to form along part of the south shore of East Molokai. The revetted mole and pier at Kaunakakai Harbor extends over this reef formation. The coastal plain from which the Kaunakakai Harbor causeway extends consists of older and younger alluvium deposited during these fluctuations in sea level.

The nearest hydrologic feature to Kaunakakai Harbor is the mouth of Kaunakakai Gulch which is located about 0.3 miles west of the beginning of the revetted mole. This gulch originates in the West Molokai

mountains. During heavy rains, runoff from Kaunakakai Stream deposits silt into the western portion of the Harbor.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.2 Nawiliwili, Kauai

The land configuration surrounding the project site contributes to the flooding problems within the project area. Along the north and west edges of the site are hillside causing runoff to flow into the site. Additionally, the Huleia river and the Niumalu Stream converge near the Small Boat Harbor. Portions of the project site lie within the 100-year flood zone as defined by the Flood Insurance Program Maps. Portions of the site are also located within the Tsunami Inundation Zone.

Water quality of the harbor is varied in different harbor locations. Clarity is generally the lowest near the estuary and highest near the harbor entrance. Also, the low salinity, surface water in the estuary generally has a higher nutrient content than the deeper harbor basin water.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.3 Port Allen, Kauai

Port Allen is located on the east side of Hanapepe Bay, on the southwest coast of the Island of Kauai. Hanapepe River enters Hanapepe Bay from the north.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.4 Honolulu Harbor, Oahu

Honolulu Harbor is located within a two-mile wide coastal plain along Oahu's southern shoreline. The surrounding land is fairly flat varying from sea level to 10 feet above sea level and is composed of coral reef rocks. The top of the coral reef at Honolulu Harbor prior to dredging and filling, stood two to six feet below the water surface. The area which is now Honolulu Harbor was originally developed in the late 1700's in a natural protected embayment created by the flows of Nuuanu Stream. The geology of the project site consists of a thick sequence of limestone sand and coral, interbedded with occasional layers of tuff and ash.

Historically, the waterfront area has been developed and expanded by the reclamation of low-lying areas and the creation of new land by filling. The quality of these fills is variable and depends upon the material used, the technology available at the time of the reclamation and the intended purpose of the reclaimed land.

The site contains no natural surface water features. In addition to the harbor, water features in the vicinity of the site include the Nuuanu Stream, which empties into the main harbor basin and the Kapalama Stream, which empties into Kapalama Basin. Both of these streams are located across the harbor from Sand Island.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.5 Hilo Harbor, Hawaii

Two rivers, Wailuku and Wailoa, empty into Hilo Bay.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.6 Kawaihae Harbor, Hawaii

The island of Hawaii was formed by five volcanoes, three of which contributed surface lava flows to the Kawaihae region. To the north, the flows of Kohala Mountain, the oldest of the volcanoes, formed land features during the Hawi and Pololu volcanic series. During the Hamakua volcanic series (Pleistocene Age) volcanic flows from Mauna Kea created land forms within the immediate area of Kawaihae Bay. These deposits were later covered with Pahala ash. Additional land features were created to the south by Mauna Loa, while Mt. Hualalai contributed to lava flows south of Kawaihae near Puako.

Due to the highly permeable substrate in the Kawaihae area and low rainfall, there are no perennial streams.

The greatest groundwater reservoir for the area, and the entire island, is near sea level where fresh water recharge from rainfall accumulates in widespread bodies floating on the slightly heavier sea water. The interface of this dynamic Ghyben-Herzberg system is brackish water, resulting from the mixing of fresh and sea water. The basal water is probably brackish to saline at the shore and for several thousand feet to several miles inland as in the Kona area. In dry areas such as Kawaihae where fresh water exchange is small and tidal influences are felt, the effect of mixing may extend such that the entire lens is brackish for more than a mile inland. Movement is continuous within the water body as fresh water recharge percolates into the lens at the water table and moves laterally to the sea.

The thickness of the brackish lens depends on the magnitude of mixing caused by the tides and the variation in recharge. Mixing is greatest near the shore due to the proximity to tidal fluctuations. Groundwater quality varies considerably from place to place, due to variations in the extent of fresh and marine water mixing.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.5.7 Kaumalapau, Lanai

Kaumalapau Harbor is located on the west side of Lanai, approximately four miles north of Palaoa Point, the southernmost extremity of the island. Kaumalapau Gulch enters the harbor bay from the north.

The existing land use will remain unchanged and therefore impacts on geology and hydrology are not anticipated.

3.1.6 Natural Hazards

3.1.6.1 Kaunakakai, Molokai

The entire harbor lies within the tsunami inundation zone.

The proposed acquisition will have no impact on natural hazards.

3.1.6.2 Nawiliwili, Kauai

The entire harbor lies within the tsunami inundation zone. The U.S. Federal Insurance Administration Flood Insurance Rate Map (FIRM) designates the project site as partially Zone A, an area within the 100 year flood zone, and Zone V, an area within the 100 year coastal flood zone with velocity (wave action).

The proposed acquisition will have no impact on natural hazards.

3.1.6.3 Port Allen, Kauai

The entire harbor lies within the tsunami inundation zone. The U.S. Federal Insurance Administration FIRM designates the project site as partially Zone A, an area within the 100 year flood zone, and Zone V, an area within the 100 year coastal flood zone with velocity (wave action).

The proposed acquisition will have no impact on natural hazards.

3.1.6.4 Honolulu Harbor, Oahu

The U.S. Federal Insurance Administration Flood Insurance Rate Map (FIRM) designates the project site as Zone X, an area outside the 500-year flood zone. Additionally, the State of Hawaii has identified the project area as lying outside of the tsunami inundation zone.

The proposed acquisition will have no impact on natural hazards.

3.1.6.5 Hilo Harbor, Hawaii

Hilo is located in a high risk volcanic area exposed to lava flow threats, earthquakes and subsidence. The risk generally decreases with distance from the northeast rift zone of Mauna Loa Volcano. During the past 15 years the island of Hawaii has experienced 11 earth quakes with Richter magnitude ratings of 6 or more. The most recent in 1975 resulted in an estimated $4 million dollars of damage island wide. Most lava flows from Mauna Loa have stopped short of the Hilo suburbs. Public fears of volcanic damages and losses are still significant. At the present time, the Corps of Engineers is seeking Congressional authorization at the request of the State of Hawaii to react to threatening lava flows under emergency conditions.

Hilo is subject to riverine flooding principally due to high intensity rainfall and surface runoff in undefined drainage ways. The flood prone areas are located within the Alenaio Stream floodplain, which is a tributary to the Wailoa River. Hilo is also subject to tsunami flood hazards. The tsunamis of 1946 and 1960 were particularly destructive resulting in the loss of 234 lives and about $52 million in property damage. After the 1960 tsunami, vulnerable waterfront areas were rezoned to open space, such as the Bayfront and Wailoa River Parks, and structural design regulations were imposed in order to reduce tsunami damages. The harbor area is located within the tsunami flood hazard area.

The proposed acquisition will have no impact on natural hazards.

3.1.6.6 Kawaihae Harbor, Hawaii

Since 1819, the Hawaiian Islands have experienced six major tsunamis comparable in magnitude to the one which struck Hilo in 1946. Analysis of data indicates that damaging tsunami phenomena may be anticipated once every 25 to 30 years in Hawaii. Only tsunamis approaching from the west will strike the Kawaihae coast directly and produce considerable runup. However, written records have indicated that no tsunamis have approached Hawaii from the west and that their probable occurrence is assumed to be very rare. Tsunamis can approach the Kawaihae Coast from other directions only by refraction or diffraction. Two of the historical tsunamis can be attributed to disturbances in the Kamchatka-Aleutian region, north and northwest of Hawaii. Tsunami runup dates have been collected since 1946 and during this period of record the highest inundation recorded along the west coast of the island of Hawaii was +13 feet MLLW. The maximum water level observed during the 1960 tsunami was nine feet above MLLW, while observed water levels at the time of the 1946 and 1957 tsunamis were five and 12 feet above MLLW, respectively.

The proposed acquisition will have no impact on natural hazards.

3.1.6.7 Kaumalapau, Lanai

The entire Island of Lanai is situated within Seismic Zone 1 on a scale of 1 to 4 (4 being higher). Additionally, the entire harbor lies within the tsunami inundation zone.

The proposed acquisition will have no impact on natural hazards.

3.1.7 Soils

3.1.7.1 Kaunakakai, Molokai

The revetted mole and portions of pier are constructed of fill material which consists of Kealia Silt Loam (KMW) which is present along much of the coastline fronting Kaunakakai Town. This soil is poorly drained, moderately alkaline, and has a high content of salt. In a representative profile the surface layer is dark reddish-brown silt loam about 3-inches thick. The entire pier surface has been improved and most of it has been covered with an asphalt or concrete.

Extensive soil erosion has occurred and continues to occur in the Kamiloloa drainage basin east of Kaunakakai Town. This erosion has deposited silt and other debris which has affected the water quality and the depth of the ocean in the nearshore waters east of Kaunakakai Harbor. The lack of ground cover and the occurrence of short periods of intense rainfall result in flash flood conditions which have contributed to the heavy silting of ocean water inside the reef.

The erosion of the alluvial soils of the coastal plain is a natural process aggravated by the chronic, long-term overgrazing since the first sheep,

goats, horses, cattle and deer were introduced to the island about 200 years ago.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7.2 Nawiliwili, Kauai

The Niumalu Peninsula was created by deposition of spoil material from dredging operations at Nawiliwili Harbor in 1956. Deposited material is primarily made up of coral and sand. The soil classification for the peninsula is rRR (rough broken land). The submerged bottom consists of sand near the revetment gradually changing to fine silt and clay in deeper water.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7..3 Port Allen, Kauai

In the Soil Survey of the Island of Kauai, the U.S. Soil Conservation Service describes the project site being the Makaweli-Waiawa-Niu association. Which are deep, nearly level to steep, well drained and moderately well drained soils that have a fine textured or moderately fine textured subsoil.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7.4 Honolulu Harbor, Oahu

In the Soil Survey of the Island of Oahu, the U.S. Soil Conservation Service describes the project site as fill land-- mixed (FL) which is

characteristic of fill lands that occur near Pearl Harbor and in Honolulu adjacent to the ocean. The fill material was dredged from the Kapalama Basin and Reserve Channel.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7.5 Hilo Harbor, Hawaii

In the Soil Survey of the Island of Hawaii, the U.S. Soil Conservation Service describes the project site as being part of the Keaukaha series. The Keaukaha series consists of well-drained, thin organic soils overlying pahoehoe lava bedrock. Rock outcrops occupy about 25 percent of the area.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7.6 Kawaihae Harbor, Hawaii

Soils in the coastal plains region adjacent to the coral fill are in the Kawaihae association which is moderately deep and gently sloping to moderate steep. The soils are excessively drained and have a medium textured subsoil. The association is used for pasture, but the carrying capacity is low and the water supply is limited. The soils are also suitable for recreation areas, wildlife habitat, and homesites.

The other major soils association within the South Kohala District include the Puu Pa-Pakini-Waiaha association, a shallow to deep, nearly level to steep and well to excessively drained medium textured subsoil found on the uplands; and the Waimea-Kikoni-Naalehu association of very deep, nearly

level to steep, and well drained medium to fine textured subsoil found on the uplands.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.7.7 Kaumalapau, Lanai

In the Soil Survey of the Island of Lanai, the U.S. Soil Conservation Service describes the project site as being very stony land-Rock land association. This soil association occurs on gently sloping to very steep, rocky and stony land types.

The existing land use will remain unchanged and therfore impacts on soils are not anticipated.

3.1.8 Hazardous Wastes

3.2.8.1 Kaunakakai, Molokai

The existing land use will remain unchanged and therefore the existence of hazardous wastes will not be investigated.

3.1.8.2 Nawiliwili, Kauai

The existing land use will remain unchanged and therefore hazardous waste will not be an issue for further investigation.

3.1.8.3 Port Allen, Kauai

The existing land use will remain unchanged and therefore hazardous waste will not be investigated at this time.

3.1.8.4 Honolulu Harbor, Oahu

In 1988, the U.S. Army prepared an Environmental Assessment for the sale and replacement of the Kapalama Military Reservation. This report indicated that Kapalama has served as a centralized receiving, shipping, and storage facility for the Army in Hawaii and that Building 917 was used to store all potentially hazardous/toxic materials. The report found that available geological evidence indicates no offpost migration of contaminants, either surface or subsurface.

The existing land use will remain unchanged and therefore hazardous waste levels shall stay the same.

3.1.8.5 Hilo Harbor, Hawaii

Pollutant discharge into Hilo Bay have left arsenic, PCB (Polychlorinated biphenyls), and pesticide contaminants in the bay sediments. A Sate Department of Health survey in 1978 indicated that amounts in Hilo Bay (State of Hawaii, 1978) in comparison with other sites surveyed in the State. Arsenic trioxide was discharged into Waiakea Pond by the fCanec Plant. The PCB's probably originated from the Shipman Power Plant near the Wailoa River. Chlordane probably occurs due to agricultural activities and use as a termicide in home construction in Hilo.

The existing land use will remain unchanged and therefore hazardous waste levels shall stay the same.

3.1.8.6 Kawaihae Harbor, Hawaii

The existing land use will remain unchanged and therefore hazardous waste will not be investigated at this time.

3.1.8.7 Kaumalapau, Lanai

The existing land use will remain unchanged and therefore hazardous waste will not be investigated at this time.

3.1.9 Noise

3.1.9.1 Kaunakakai, Molokai

The pier area of Kaunakakai Harbor is separated from the land area by the 1,700-FT long causeway. As a result, the noise from the activities in the town area of Kaunakakai do not affect the pier area. The main source of noise on the pier is from commercial harbor activities such as loading and unloading barges, hauling cargo within the pier area, and moving equipment. Trucks and other cargo handling equipment would be the main sources of noise on the pier. The distance from the land area means these noises tend to be localized on the pier and not affect other areas.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.9.2 Nawiliwili, Kauai

Contributors to existing noise levels in the project vicinity include truck traffic and aircraft. Trucks traveling in the project vicinity are mainly attributable to loading and unloading shipping cargo. Aircraft noise includes airplanes from interisland carriers traveling to and from the Lihue airport located less than two miles north of the site. Additional aircraft noise is generated by tour helicopters passing over the harbor area. Also, moderate noise levels are generated by shipping operations within the Nawiliwili Harbor.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.9.3 Port Allen, Kauai

Contributors to existing noise levels in the project vicinity include traffic, aircraft, and commercial activities. Trucks traveling in the project vicinity are mainly attributable to loading and unloading shipping cargo. Aircraft noise is generated by tour helicopters passing over the harbor area from the Port Allen Airport located across Hanapepe Bay. Also, moderate noise levels are generated by shipping operations within the Nawiliwili Harbor.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.9.4 Honolulu Harbor, Oahu

Contributors to existing noise levels in the project vicinity include traffic, aircraft, and commercial activities. From Ala Moana Boulevard, aircraft noise contributed 22 to 41 percent of the total noise environment due to the higher relative contributions from traffic and machinery (e.g., reefer vans) noise sources. Examples of industrial activities that can not reasonably have acoustic enclosures are container handling facilities; ship and boat maintenance and repair operations; truck terminals; salvage, scrap and junk storage; concrete batch plants; large saw mills; etc. Noise compatibility criteria provided by many Federal agencies generally assume that buildings are closed for heating or air conditioning. Because of our favorable climate, many industrial activities here are open or are naturally ventilated. This condition makes these facilities both susceptible to noises from surrounding areas as well as not being quiet or compatible neighbors themselves.

The land acquisition will result in no change in the noise that already

impacts the surrounding area.

3.1.9.5 Hilo Harbor, Hawaii

Hilo is a quiet urban area with exception of aircrafts landing and taking off from Hilo Airport, the aircraft landing pattern takes aircrafts over the bayfront area.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.9.6 Kawaihae Harbor, Hawaii

Existing noise conditions at the project site are a result of both natural and man-induced factors. Natural noises in the vicinity which tend to provide the predominant background sound include wind and surf. Noises generated by man's activities surrounding the site are occasionally superimposed and include commercial harbor activities, nearby highway traffic, and occasional overhead aircraft. Residences in the vicinity of the project site are few and scattered, and are at sufficient distances to remain relatively unaffected by these intermittent sounds.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.9.7 Kaumalapau, Lanai

Existing noise conditions at the project site are a result of both natural and man-induced factors. Natural noises in the vicinity which tend to provide the predominant background sound include wind and surf. Noises generated by man's activities surrounding the site are occasionally

superimposed and include commercial harbor activities, nearby highway traffic, and occasional overhead aircraft.

The land acquisition will result in no change in the noise that already impacts the surrounding area.

3.1.10 Topography and Drainage

3.1.10.1 Kaunakakai, Molokai

The revetted mole and commercial pier space is characteristically level and was constructed at about 6 FT mean sea level (MSL). The surface of the pier island is graded slightly to direct runoff to a drainline in the center of the pier. The line collects runoff through drop drains and then discharges it into the ocean at the southwest end of the pier.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.2 Nawiliwili, Kauai

Along the eastern edge of the project site is an 8 foot high rock embankment. Elevation of the site ranges from 11 feet at the northwest corner to 4 feet along the shoreline of the Small Boat Harbor. The site is gently sloping with an average gradient of less than 1 percent.

Submerged lands within the project site range from depths of -2 to -4 feet at the toe of the rock revetment to an approximate depth of -10 feet 100 feet seaward of the revetment. From there, the gradient increases until it reaches approximately 35 feet. The submerged bottom consists of sand near the revetment gradually changing to fine silt and clay in the deeper water.

Pavement areas are designed for surface drainage, with finish grades established to direct major portions of the surface runoff into the boat harbor. Curbs and intermittent stops are utilized to permit surface drainage.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.3 Port Allen, Kauai

Port Allen is built at the base of an escarpment. There is very little land below the Port Allen escarpment. The area in board of the pier is paved and rises from the end of the concrete dock eastward. The road from the pier to the surrounding storage and industrial areas ascends at about a 5.6 percent gradient.

The primary freshwater drainage into the bay is Hanapepe River.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.4 Honolulu Harbor, Oahu

Honolulu Harbor is located within a two-mile wide coastal plain along Oahu's southern shoreline. The surrounding land is fairly flat varying from sea level to 10 feet above sea level and is composed of coral reef rocks. The top of the coral reef at Honolulu Harbor prior to dredging and filling, stood two to six feet below the water surface. The area which is now Honolulu Harbor was originally developed in the late 1700's in a natural protected embayment created by the flows of Nuuanu Stream. The topography of the project site consists of a thick sequence of limestone sand and coral, interbedded with occasional layers of tuff and ash.

Historically, the waterfront area has been developed and expanded by the reclamation of low-lying areas and the creation of new land by filling. The quality of these fills is variable and depends upon the material used, the technology available at the time of the reclamation and the intended purpose of the reclaimed land.

The two primary freshwater drainages into the bay are the Nuuanu Stream and Kapalama Stream.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.5 Hilo Harbor, Hawaii

The topography of the area consists of pahoehoe lava with a few rock outcrops.

The two primary freshwater drainages into the bay are the Wailuku River and Wailoa River.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.6 Kawaihae Harbor, Hawaii

Topographically, the coral filled land area at the harbor is generally irregular with a portion of the back-up area having three terraces.

Two gulches reach the coral fill area, the Makahuna Gulch from the northeast and the Makeahua Gulch from the east. Because of high percolation rates, surface runoff through the site is negligible although occasional heavy storms may produce runoff into marine waters.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.10.7 Kaumalapau, Lanai

The barge facility is located in an area that seems to be the remnants of a volcanic caldera. The topography of the landside approach and the surrounding areas are either sheer cliffs or steep slopes. Such terrain does not readily afford areas that are conducive to cargo handling. The area just back of the existing is a narrow strip of land wide enough to allow a truck tractor with trailer to make a "U" turn. The remaining portions are on higher terraced areas with small offices and warehouses.

The primary fresh water drainage into the bay is Kaumalapau Gulch.

The existing land use will remain unchanged and therefore impacts on topography and drainage are not anticipated.

3.1.11 Traffic

3.1.11.1 Kaunakakai, Molokai

Access to the pier is via the causeway which links the commercial pier area and the town of Kaunakakai. Traffic along the causeway and on the pier includes a range of automobiles, pickups, and commercial trucks used to haul cargo to and from the commercial harbor. Auto traffic includes vehicles traveling to the pier for commercial harbor related purposes, for commuting on the ferry, for small boat and fishing purposes, and for other recreation uses.

Occasionally, this traffic becomes relatively heavy considering the small area and limited uses on the pier. In addition, there are occasional conflicts between the truck and other traffic along the causeway. No

parking is permitted on the causeway to ensure the safety of vehicles and pedestrians.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.2 Nawiliwili, Kauai

Vehicular access to the project site is provided via Niumalu Road and the Waapa Road with connections to Lihue via Nawiliwili Road or Nawiliwili Avenue. Roadways adjacent to the project site consist of two lanes with little traffic volume. Additional roads within the harbor area include Kanoa Street and Wilcox Road.

The majority of vehicles traveling on roads within the harbor area involve harbor/shipping related transport or employee travel. In addition, roads adjacent to the project site include vehicles traveling to the Small Boat Harbor or nearby residential areas. Harbor/shipping related transport is heaviest during the week while recreational related vehicles are heaviest during the weekend.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.3 Port Allen, Kauai

Vehicular access to the project site is provided via Waialo Road and Iona Road with connections to Kaumualii Highway.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.4 Honolulu Harbor, Oahu

Nimitz Highway is a six lane arterial highway in the vicinity of the project. Nimitz is the continuation of Ala Moana Boulevard, which extends from Waikiki, through Kakaako, past Downtown Honolulu, to the Airport area, where it connects to the H-1 Freeway at the Keehi Interchange. Several roadways intersect Nimitz Highway in the vicinity of the project site, which provide access to the industrial activities makai of the highway.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.5 Hilo Harbor, Hawaii

Vehicular access to the project site is provided via Kuhio Street which connects to Kalanianaole Avenue.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.6 Kawaihae Harbor, Hawaii

The access road to the harbor from Kawaihae Road is located as shown on the development plan. The road is located as far as possible to the east toward the thickly wooded kiawe growth and at a safe distance from water's edge.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.1.11.7 Kaumalapau, Lanai

Vehicular access to the project site is provided via Kaumalapau Highway.

The land acquisition will result in no change to the vehicular activity that now uses the roadways and highways.

3.2 Marine Environment

3.2.1 Waves Currents, Tides

3.2.1.1 Kaunakakai, Molokai

Kaunakakai Harbor is exposed to heavy seas from the south and southwest during southerly (Kona) storms. These storm s occur on an average of two to three times a year during the late fall or winter season, and range in intensity from light to strong. Waves from other directions are obstructed by land mass. All waves approaching from the southwesterly direction are partially attenuated by the coral reef at the harbor site.

Currents along the southern shore of Molokai generally flow eastward in the vicinity of Kaunakakai and the southeastern coast, and westward between Kaunakakai and the southwestern coast. Combined with these movements are tidal currents with the flood setting west and the ebb setting east along the southeastern coast.

The range of tide between mean lower low water (MLLW) and mean higher highwater at Kaunakakai Harbor is 2.1 FT. The estimated extreme tidal range is 4.5 FT.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.2 Nawiliwili, Kauai

Nawiliwili Harbor is directly exposed to tradewind generated waves. These waves occur approximately 75 percent of the time with typical wave heights of 4 to 12 feet at intervals of 6 to 10 seconds. Additionally, the harbor is

indirectly exposed to other waves generated by south swells or Kona storm waves as they refract and diffract around the island. The effects of these waves are most noticeable at the harbor entrance channel. Typical wave heights entering the harbor are 1 to 3 feet with intervals of 8 to 10 seconds.

The tides in Hawaiian waters are semi-diurnal with pronounced diurnal inequalities. Tidal data from the U.S. Department of Commerce, National Oceanic and Atmospheric Agency shows that Nawiliwili Harbor has an average tidal height range of 1.9 feet.

Currents of the harbor were found to move in a clockwise direction. Speeds of surface currents range from .6 feet/second to .12 feet/second. The slow currents that exist within the harbor have resulted in weak circulation of harbor water and the little amount of mixing of freshwater and saltwater. During flood conditions, circulation patterns are altered causing greater circulation and mixing.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.3 Port Allen, Kauai

The diurnal range of tide is 1.7 feet and the extreme range is 4.0 feet. The prevailing current upon entrance is west off Puolo Point.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.4 Honolulu Harbor, Oahu

The diurnal tidal range at Honolulu is 1.9 feet. The lowest tide on record is -1.3 feet and the highest +3.5 feet; all depths refer to the plane of mean

lower low water.

The tidal current floods west and ebbs east along the coast between Makapuu Point and Honolulu. In the vicinity of Honolulu and east counterflow along the edge of the reef accompanies the west flood. Strong west currents have been reported off Honolulu.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.5 Hilo Harbor, Hawaii

Hilo Bay has circulation patterns based on tides, waves, wind and freshwater influences. A study by Neighbor Island Consultants (1972) described a two-cell circulation pattern in the harbor, with a net movement of water seaward. Water movement through the breakwater is believed to contribute to this flow and also causes surging within the deep draft harbor (Shallenberger, 1980). Replenishment of harbor waters is believed to occur by flow through the breakwater and by currents from the western half of the bay. The tidal range in the bay is 2.4 feet.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.6 Kawaihae Harbor, Hawaii

The mean range of tide is 1.3 feet; the diurnal range of tide is 2.1 feet; and the extreme range is 4.5 feet. The strong north current felt off Keahole Point and Makolea Point passes offshore of Kawaihae; however, there is little or no current in the harbor.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.1.7 Kaumalapau, Lanai

The mean range of tide is 1.7 feet; the diurnal range of tide is 0.2 feet; and the extreme range is 4.0 feet. Currents of the harbor move in and out with the tide.

The proposed acquisition will have no impact on existing waves, currents and tides.

3.2.2 Water Quality Designations

3.2.2.1 Kaunakakai, Molokai

Water quality samples taken in 1989 for Enterococci density at Kaunakakai Harbor measured 26.4/100 ml. The geometric mean standard for Enterococci density is 7/100ml.

Extensive water quality data was last taken in 1978 at Kaunakakai Harbor as part of a survey prepared for the U.S. Army Corps of Engineers. The survey examined salinity and dissolved oxygen profiles, phytoplankton levels, bacteriological levels, and dissolved nitrogen and phosphorus concentrations.

During the 1978 survey, salinity values fell into ranges indicating waters of typical oceanic salinity (34.93% to 35.53%), and dissolved oxygen readings were generally close to saturation. The phytoplankton levels within the wharf basin were significantly higher than those in the adjacent waters. It was assumed that the greater residence time of waters within the wharf provided an extended period for the growth of pelagic plants.

Bacterial levels within the wharf were considerable higher than those outside the wharf (200-500/100 ml versus 2-100/100 ml). The accompanying fecal coliform and fecal streptococci data reflected generally low levels throughout, suggesting that the majority of the bacteria present were not of fecal origin. An exception to this was recorded by nearshore stations where the fecal coliform values were elevated, suggesting that the enhanced bacterial levels at those stations were from a source which contained significant amounts of human fecal contamination.

Dissolved nitrogen and phosphorus concentrations within the vicinity of the wharf were not significantly different from those outside the wharf. Nitrogen and phosphorus in their chemical forms were also assessed to obtain evidence of groundwater intrusion into the vicinity of the wharf, since both have been shown to be abundant in groundwater. No such evidence of groundwater effects was found in the vicinity of the Kaunakakai Wharf.

Kaunakakai Harbor waters are designated Class "A" under the Department of Health standards.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.2 <u>Nawiliwili, Kauai</u>

Stream flow from the Huleia River plays an important role in the marine environment affecting salinity, mixing, and sedimentation of the harbor. The typical volume of flow of the river is 10 cubic feet/second (cfs). However, the highest recorded discharge of the river during storm conditions was 13,200 cfs. The estimated volume of flow of Niumalu

Stream is 7.cfs. The freshwater discharge from the two streams is sufficient to produce estuarine conditions in the tidal flats and inner harbor. A pronounced vertical salinity gradient exists within the harbor with freshwater on the surface and saltwater in the subsurface and bottom layers.

The present state of water quality seems adequate for the various uses of Nawiliwili Bay waters. Activities include swimming and surfing in Kalapaki Bay, boating throughout Nawiliwili Bay, water skiing in Huleia River, crabbing, fishing, and shipping activities. However, present quality does not meet the language of the Standards on nutrients especially. Conformance with the Standards would mean drastic alterations of hydrologic elements and the life processes occurring in the streams and the estuary.

Nawiliwili Harbor waters are designated Class "A" under the Department of Health standards.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.3 Port Allen, Kauai

The offshore waters of the Port Allen area are currently classified "A" by the State of Hawaii.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.4 Honolulu Harbor, Oahu

Honolulu Harbor is the receiving body for many pollution sources located

on the northern edge of the harbor. Pollution enters the harbor via surface water runoff, stream discharges, and industrial and urban uses. Poor water quality also exists along the southern edge of Sand Island due to various harbor activities. The waters of the harbor are rated Class "A" and Zone of Mixing by the State Department of Health.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.5 Hilo Harbor, Hawaii

In general, water inside and outside the breakwater is vertically stratified due to the discharge of ground and riverine water into the ocean. The salinity gradient inside the harbor is greater than that outside due to the reduced mixing behind the breakwater. The depth of the freshwater layer in the bay reaches 20 feet indicating that mixing is occurring between surface and bottom layers, but not sufficient to reduce the salinity gradient. The depth of freshwater on Blonde Reef reaches 10 feet inside the breakwater. The primary water column mixing forces are wind and occasional ship traffic. Nutrient concentrations and suspended solids and turbidity vary with the volume of surface runoff and groundwater discharge entering. Fecal strep bacteria tend to survive longer in the bay due to the freshwater layer in the bay than other areas in the State. Chlorophyll-a concentration vary with water turbidity increasing during periods of low riverine flow and decreasing during periods of high flow.

The offshore waters of the Hilo Harbor area are currently classified "A" by the State of Hawaii.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.6 Kawaihae Harbor, Hawaii

The offshore waters of the Kawaihae area are currently classified "A" by the State of Hawaii. These waters are to be protected for recreation. The offshore Kawaihae area is designated as an Effluent Limitation II Segment (EL II). These are water areas where water quality is meeting or will be higher than the applicable water quality standards.

The waters within the commercial deep-draft harbor are classified "B" to be protected for small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, and the support and propagation of aquatic life, and aesthetic enjoyment. Freshwater springs line the shoreline along the Pu'ukohola National Historic Site. The intrusion of this fresh and brackish water along the coastline contributes to depressed surface salinities in the nearshore area and these waters may not meet their classification requirements for water quality.

Some water quality measurements on turbidity at the small boat harbor project site were described in 1974. Water turbidity is high at times within the harbor basin area and along the walls of the landfill area, with water visibility generally less than one meter. Both act as silt traps, and the fine sediment particles may be placed in suspension during windy periods. There is ample evidence of silt being blown from the existing landfill area of the commercial harbor into the waters of the proposed small boat harbor and of landfill erosion along the revetment of the landfill area. Additional fresh groundwater outflow contributes to the turbidity. Recent aerial photographs show additional evidence that sediment transported from Makeahua Quarry is directed into the cul-de-sac water area formed by the landfill site.

The mouth of Makeahua Gulch also shows recent accumulations of

terrigenous silt deposits and turbid waters. Haleokapuni Heiau is believed to have been buried in the silt in recent years. Elsewhere outside the harbor complex, water quality appears good and water clarity high. At times, waters off Spencer Beach Park are turbid, but flourishing coral communities exist and tolerate the conditions. A number of water quality parameters were monitored within the commercial harbor during field evaluations on the effect of dredging operations on water quality and marine life.

Water quality within the Kawaihae Small Boat Harbor Project Site is listed as meeting quality standards for Class A waters. Turbidity is high due to windborne dust from the landfill area and from sediments transported into the area from the quarry area. Low surface salinities and high nutrient values at a water quality study site off Spencer Park are probably the result of groundwater seepage into the nearshore marine environment. Similar groundwater contribution of nitrates has been demonstrated at Waialua Bay, Barbers Point, Honokahau Harbor, and at Lahaina. High nitrate values in the project area are probably related to fresh groundwater discharge in the area. Water circulation is poor due to low velocity wind-induced currents, and the prevailing wind directions create eddy patterns near and within the project site.

The proposed acquisition will have no impact on existing water quality designations.

3.2.2.7 Kaumalapau, Lanai

The offshore waters of Kaumalapau area are currently classified "AA" by the State of Hawaii.

The proposed acquisition will have no impact on existing water quality

designations.

3.2.3 Marine Biology

3.2.3.1 Kaunakakai, Molokai

A marine biological survey was conducted in 1978 in waters west of Kaunakakai Harbor as part of a survey prepared for the U.S. Army Corps of Engineers. The survey examined nearshore areas of the reef flat, and areas seaward of the reef crest. The sea floor environment of the reef flat consisted of mud and scattered rubble, changing to a more solid limestone substratum and then to sand pockets surrounded by emergent dead Porites and Pavona patches in deeper water. Overall, the reef flat environment at Kaunakakai did not harbor a wide variety of resident fish. However, a number of non-resident commercially important fish were seen during the qualitative survey. These included mullet, awa, nehu, and papio. Although not seen, barracuda were believed to frequent the reef flat. Some edible species of algae were encountered including ogo, limu lipoa, limu kala, and limu wawae'iole.

Seaward of the reef crest, beyond the tip of the commercial pier, live corals dominated the substratum to a water depth of approximately 3 meters. At a 5 to 8 meter depth, the bottom gently dropped away to a broad sloping shelf principally made of emergent hard limestone cut by small sand channels. On the limestone the coral community was dominated by Porites lobata which gives way to Porites compressa at the 10 to 15 meter depth. More than 50 species of fish were identified in this area. Other organisms present in this area but not inventoried in the quantitative census included the lobster, the slipper lobster, the molluscs, the shrimps, the swimming crab, the grey shark, and the green sea turtle. Also seen were several polychaete worm species including Vermiliopsis sp., Spirobranchus giganteues, and Pherecardia striata, the bryozoa Bugula sp., the star fish

Linckia sp., Culcita novaequineae and Acanthaster planci.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.2 Nawiliwili, Kauai

The biological communities were determined by sampling, field observations, and evaluations of catch reports of crabs and fish. In the tidal flats, the dominant crab species were the white crab or pap'ikau-nonu comprising 86 percent of the catch while Samoan crabs were 10 percent and red crabs or mo'ala were 4 percent. In the deeper sections of the tidal flats and in the harbor to 3-foot depths, the catches were all red crabs.

Crab larvae occurred in high numbers in the deep harbor surface with the higher numbers noted in the night sampling. The deep harbor, therefore, serves to support the juvenile crab population of both the tidal flats and the deep harbor bottom.

High concentration of chlorophyll-a, an index of phytoplankton density, was found by the ship piers and the lowest near the entrance of the bay by the breakwater. In general, chlorophyll-a values were high in the inner bay and were typical of estuaries.

The tidal flats were relatively devoid of infaunal organisms. Analysis of sediment samples showed empty, clean half-shells and fragments of bivalve mollusc shells of the families Mytilidae and Tellinidae. Some worms of the family Cirratulidae were also found in these samples.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.3 Port Allen, Kauai

The marine environment in the vicinity of the project site harbors a cross-section of intertidal and subtidal marine communities, each supporting a diversity of indigenous algae, invertebrates and juvenile reef fishes.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.4 Honolulu Harbor, Oahu

Honolulu Harbor is an area with a long-term history of direct and indirect degradation of the marine environment. The nearshore waters demonstrate low biological diversity and density and a prevailing poor water quality.

Honolulu Harbor is located in Mamala Bay. While the Mamala Bay coastline is designated Class "A"A under the Department of Health standards, the immediate harbor area is designated Class B.

Class "B" waters are to be protected for small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, the support and propagation of aquatic life, and aesthetic enjoyment.

The harbor is a receiving basin for a number of pollution sources which account for its generally poor water quality. Sedimentation from upland sources is one of the primary pollution sources within the harbor.

Burrowing shrimp, polychaete worms, crabs, and a few hydroids and sponges comprise the major faunal elements in the areas with unconsolidated bottom sediments. Ten species of coral have been

identified within close proximity to the HECO power plant intake and outfall basins. The waters provide limited habitat for at least forty-seven species of common reef fish which seem to be abundant in the vicinity of the thermal effluent outfall of the power plant. The area is used by recreational fishermen.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.5 Hilo Harbor, Hawaii

The two important marine areas within the bay are the areas with the greatest coral cover, Blonde Reef (16% coral cover) and Coconut Island (10% coral cover). Both the live and dead coral mass on Blonde Reef and at Coconut Island provide habitat for a variety of reef fish important to recreational fishing in the bay. Which while commercial fishing in the bay has declined, the sale of the catch continues to occur at Suisan Harbor and fish market at the mouth of the Wailoa River. Fishermen suggest that fish stocks are declining due to over-exploitation, sedimentation and chemical pollution. However, exact factors affecting fish abundance have not been determined, although, high water turbidity reduces spear fishing success and sedimentation can bury fish shelter and food resources reducing the amount of nearshore fish habitat. Nehu (tuna fishing bait fish) resources have declined and are insufficient to support a fishing fleet. Principal nehu catch areas are located within the commercial port.

The endangered humpback whale seasonally migrates through waters outside of Hilo Harbor. The whales begin to appear in November and leave the islands by the end of June. The greatest number of whales in the islands appear during February and March. The National Marine Fisheries Service indicates that no whales have been sighted inside Hilo Harbor.

Data indicate that the whales concentrate at Upolu Point in northern Hawaii, and suggest that the Hilo Harbor area is not a calving, nursing and breeding area in the Hawaiian Islands. The endangered hawksbill turtle and the threatened green sea turtles have been observed in Hilo Harbor, but no nesting grounds exist in the harbor and no seasonal aggregations in the harbor have been reported. The turtles are also reported by the US National Marine Fisheries to forage along the entire coastline from Hilo to Kalapana.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.6 Kawaihae Harbor, Hawaii

One hundred eleven species of fish were reported by personnel of the State Fish and Game Division who conducted marine biological surveys before, during, and after Project Tugboat (1969-1970). The majority of these species were observed in the reef areas not disturbed by the effects of commercial harbor construction. The project site was within the areas that were disturbed during the harbor construction.

However, in another study, the Ocean Research Consulting and Analysis report (1978) states that within the proposed small boat harbor area, "The benthic environment is silt laden, coral cover is subnormal, and the fish life is virtually non-existent, and the area has shown very little recovery or growth since perturbation." Coral cover in the project site was relatively low in 1978 with the bottom mainly dominated by silt and fine sand. In contrast, the reef within the breakwater of the deep-draft harbor demonstrated a marked recovery in coral growth since basin dredging and breakwater construction. This recovery is believed to be due to (1) availability of hard substrate, (2) ample water circulation, and (3) sufficient

water clarity for growth. In rubble areas of the project site, coral recruitment has been restricted to small rubble fragments which ultimately limits the size of the colony. Some coral species are able to withstand heavy siltation (Yonge, 1935); however, any sedimentation within the project area may cover rubble fragments making suitable substrate unavailable to settling larvae. These stresses may consist of (singly or in various combinations): (a) sedimentation that occurred only during construction of the deep-draft harbor; (b) continuing sedimentation that may be attributed to wind-induced erosion of, or leakage from the commercial harbor landfill and dredged coral stockpile; and (c) continuing sedimentation that may be attributed to transport of quarry tailings by flash flood waters coursing through Makeahua Quarry.

The degree of sedimentation within the project area that may be attributed to each of the above sedimentary processes is difficult to assess; however, elimination or mitigation of the above stress factors (either singly or in various combinations) may contribute to the improvement of the project's marine environment and possibly provide suitable conditions for the recruitment of biota from the non-affected areas surrounding the project site. Candidate recruitment species for the project site, if improved ecological conditions permit, would include those species observed and reported by the State Division of Fish and Game (1969-1970); by Chenney (1977) and by Ocean Research Consulting and Analysis, (1978).

Many varieties of corals, including Porites and Posillipora are common components of the remaining living reef communities outside of the project area. An uncommon Hawaiian coral, Porities convexa, seems to achieve unusual abundance at Kawaihae offshore from Spencer Beach Park and off of the commercial harbor breakwater. The reef seaward and to both sides of the proposed small boat harbor is well-developed, pristine, wave-

exposed, coral reef with abundant fish population and a typical dominance of the finger coral Porites compressa and the lobed coral Porites lobata.

In deeper waters off Kawaihae, black corals and abundant sand deposits are found which contain a variety of organisms including polychaete worms, sea slugs, benthic algae, and communities of the pen clam Pinna. Thirteen species of macroscopic algae were found off the shore of the Pu'ukohola National Historic Site in 1977 of which only two were abundant Biddulphia pulchella and Valonia agegraphila. Two species which are sometimes indicative of polluted water, Ulva fasciata, and Enteromorpha were present along the Kawaihae commercial harbor revetment. A more recent algal survey in 1978 within and in the vicinity of the proposed boat harbor observed and collected 15 species of macroscopic algae. In the northern third of the sea floor of the proposed project site, species of micromulluscs are present in dense populations indicating that sediments are oxidizing in nature. Mullet, akule, and a wide variety of reef fish and some green sea turtles have been caught by gill net fishermen. The green sea turtle was recently listed as a threatened species. Nehu is also caught in the area with surround nets. The area immediately adjacent and to the south of the project are is a shark breeding and spawning ground. Grey reef sharks and white tip reef sharks frequent the shallow waters of Pu'ukohola Bay. During the calving season from November to March, Humpback whales pass as close as 400 meters off the commercial harbor breakwater. The offshore waters of the Kona Coast are some of the richest fishing grounds in the main Hawaiian Islands.

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.3.7 Kaumalapau, Lanai

No impact to the marine biology of the project area is expected from the proposed acquisition.

3.2.4 Recreation Activities

3.2.4.1 Kaunakakai, Molokai

Kaunakakai Harbor is unique among the harbors in the State in that the commercial harbor, small boat harbor, fishing, and a number of other activities all generally use the same area. The extent of the use of Kaunanakai Harbor for other activities has been documented by a Public Awareness Survey conducted by the Harbors Division on April 5,6, and 7 1991, Friday, Saturday, and Sunday. Recreational activities include fishing, paddling and surfing.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.2 Nawiliwili, Kauai

Recreational activities include swimming and surfing in Kalapaki Bay, boating throughout Nawiliwili Bay, water skiing in Huleia River, crabbing, and fishing.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.3 Port Allen, Kauai

The principal recreational areas in the vicinity of the project area include Salt Pond Beach Park and Hanapepe Valley. Salt Pond Beach Park is located across Hanapepe Bay from the Port Allen commercial district and harbor. The beach is used for snorkeling, diving, swimming and fishing.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.4 Honolulu Harbor, Oahu

Only passive recreational opportunities are provided by the harbor. Pole fishing, walking and jogging occur on the pedestrian pathway along the edge of the harbor.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.5 Hilo Harbor, Hawaii

Principal water contact recreation activities in Hilo Bay include shoreline fishing, boating, wading, and canoeing. Swimming is seldom observed possibly due to the highly turbid nearshore waters and concentrated mats of vegetative debris carried into the bay from the tributary systems. Six surfing sites were identified in Hilo Bay in the "Hilo Bay - a Chronological Study" in 1981. According to the Hawaii Chamber of Commerce, 1973, surfing demands have grown sufficiently to warrant investigations for increasing the number of surfing sites on the island. Fishing and boating are judged the most significant recreational activities. Canoeing is centered on use of the Bayfront beach and Wailoa River. Swimming is most prevalent in Reed's Bay.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.6 Kawaihae Harbor, Hawaii

The principal recreational activity in the vicinity of the project area is boating. Although three surfing sites were identified in the vicinity of the

project area by the Hawaii Surfing Survey conducted in 1968, these sites were classified as ancient Hawaiian surfing sites and are not extensively surfed now. The surfing information sheet also stated that the sites offer good or average surfing conditions only 30 percent of the year.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.2.4.7 Kaumalapau, Lanai

Principal water contact recreation activities in Kaumalapau Bay include shoreline fishing, boating, wading, swimming and canoeing.

The existing land use will remain unchanged and therfore impacts on recreation activities are not anticipated.

3.3 Socio-economic Environment

3.3.1 Economic and Population Characteristics

3.3.1.1 Kaunakakai, Molokai

Historically, agricultural production has been the major source of economic development on Molokai. Until the mid-1970's when it ceased, commercial production of pineapples was the island's major economic activity. Today, many Molokai workers who had been laid off due to the decline of pineapple production are transported to Maui to reduce the labor shortage there. This trend will probably continue into the year 2000 and beyond.

Some growth in businesses should be anticipated in the Kaunakakai area to serve an increase in population. Beyond this, major increases in businesses in other areas of Molokai are not anticipated.

Recently, production of coffee has started on Molokai. In the future this

may be a source of additional agricultural production. Molokai can also expect to see re-establishment of the cattle industry. In addition, sheep production may become economically feasible. Agricultural activities will continue primarily on the eastern portion of the island.

The 1990 population of Molokai, as estimated by the State of Hawaii Department of Business and Economic Development (DBED), was 6,717 persons; an increase of 668 persons from the 1980 figure of 6,049 persons.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.2 Nawiliwili, Kauai

Economic activity on Kauai is steadily increasing, the most significant being within the visitor industry. Other activities that are increasing include diversified agriculture and military operations. This increased economic activity has a direct relationship to the volume of cargo shipped to the island, the frequency of shipping activity, and the amount of facilities needed to accommodate the cargo. Additionally, the amount of warehouse/storage space may dictate the frequency of shipping.

Nawiliwili Harbor is the main receiving port for imports and the consolidation center for exports on Kauai. Nawiliwili Harbor has been significantly impacted by the increased economic activity of Kauai. The amount of shipping and cargo handling activity has doubled within the past few years. This drastic increase in shipping and cargo handling activity has created a critical need for additional container storage and handling space and shed area.

The population of the Island of Kauai has grown at a rate of approximately

1,000 persons per year for the last ten years. The last recorded figure for resident population was 50,947 in 1990.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.3 Port Allen, Kauai

Economic activity on Kauai is steadily increasing, the most significant being within the visitor industry. Other activities that are increasing include diversified agriculture and military operations. This increased economic activity has a direct relationship to the volume of cargo shipped to the island, the frequency of shipping activity, and the amount of facilities needed to accommodate the cargo. Like Nawiliwili Harbor, the amount of. warehouse/storage space may dictate the frequency of shipping.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.4 Honolulu Harbor, Oahu

The 1990 population of Oahu, as estimated by the State of Hawaii Department of Business and Economic Development (DBED), was 836,207 persons; an increase of 73,673 persons from the 1980 figure of 762,534 persons.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.5 Hilo Harbor, Hawaii

Hilo is the center of business in the County. Government, trade and services are principal employers. Tourism is a powerful economic force,

but inflation has been a principal factor affecting a decline in hotel occupancy rate and the number of visitors entering the County. Hilo Harbor is the principal deep draft port in the County handling the majority of petroleum, general cargo and agricultural products being shipped into the County.

The 1990 population of Big Island, as estimated by the State of Hawaii Department of Business and Economic Development (DBED), was 120,317 persons; an increase of 28,264 persons from the 1980 figure of 92,053 persons.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.6 Kawaihae Harbor, Hawaii

Until recently, the Kohala area has been agriculturally oriented, producing sugarcane, diversified truck crops, and cattle. However, the principal crop, sugarcane, was phased out of North Kohala in 1975. There are presently many attempts to diversify agricultural and economic base of the area. The rich soils and greater rainfall of the North Kohala area suit agriculture well, but those of the more arid Kawaihae region do not. The major commerce of the region includes cattle ranching on the upper slopes, oil storage, tourism, marine transportation, residential land development, small businesses, and charter boat fishing. There are numerous plans for economic expansion at Kawaihae, particularly within the resort and visitor industry. Kawaihae has also been proposed as a site for an oil refinery, and the Hawaiian Electric Company is investigating a site along northern Kawaihae Bay for a power generating station. The State of Hawaii's implementation of improved marine and land transportation facilities will undoubtedly contribute toward economic growth. The existing commercial

harbor contributes both directly and indirectly to the economy of the local area as well as the State by providing governmental revenues, private enterprise profits, and jobs.

Existing and planned real estate development directed toward vacation, retirements, and second home markets will further accelerate the changing nature of the economic base and put increasing pressures on existing and available recreational and tourist-related facilities. Thus a favorable economic climate for new visitor-related commercial development including commercial sports fishing and other boating related recreational activities is created.

Retail commercial service centers for the Kohala districts are currently concentrated in Waimea and Hawi. Projected hotel development will also include related commercial activities but there will also be new demand for non-hotel retail outlets more convenient to the concentrations of new developments in South Kohala.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.1.7 Kaumalapau, Lanai

The principal economic activity on Lanai has historically been pineapple production. However, this is likely to change in the near future as the visitor industry begins to play a more important role in the economy of Lanai.

About 98 percent of the 90,000 acres on the Island are owned by Castle & Cooke, Inc. The Dole Company, a subsidiary operates the pineapple plantation and is the only major employer on the Island. The Dole

Company operates one of the world's largest pineapple plantations on the Island. With the shift in pineapple production to other countries and increased mechanization with the industry, the number of jobs in the pineapple industry in the years has resulted in a lot of people leaving Lanai, particularly young adults.

While it is expected that pineapple production will diminish as a major economic activity on Lanai, other developments are expected to supplement the economic growth of the Island in the near future. However, it should be noted that Castle & Cooke, inc. owners and operators of the pineapple production properties have recently announced its their intention to terminate their pineapple farming operations on lanai within the next two years.

The project will not have any impact on the economic characteristics of this area nor the population.

3.3.2 Recreational Facilities

3.3.2.1 Kaunakakai, Molokai

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.2 Nawiliwili, Kauai

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.3 Port Allen, Kauai

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.4 Honolulu Harbor, Oahu

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.5 Hilo Harbor, Hawaii

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.6 Kawaihae Harbor, Hawaii

The State has provided a launching ramp facility at Kawaihae Harbor. In addition to boating, other passive recreational opportunities are provided with the harbor. The observation point for the adjacent historic/archaeological site and a connection to the historic site, is located on the south shore of the coral fill area. Pedestrian pathways connect other project features such as parking, administration building/restrooms, and other structures. Passive landscaped areas are provided along pedestrian pathways for picnicking and relaxation.

Public recreation facilities in the tributary area include Hapuna Beach State Park, three miles south, Kauna'oa Beach, two miles south, Lapakahi Historic Site and State Park, 15 miles to the north, Mahukona Beach Park, 17 miles to the north, and Kapaa Beach Park, 19 miles to the north. Also in the tributary area in the Niulii area is the Keokea Beach Park and Pololu Valley lookout. The Mauna Kea State Park is approximately 60 miles by road to the east of the project site. There are plans to ultimately develop much of the area between Puako and Kawaihae into recreational areas according to the Division of State Parks, Outdoor Recreation, and Historic Sites, Department of Land and Natural Resources. Lapakahi historical site (and the Mahukona Boat launching ramp) is 15 miles to the north.

Three resort areas, all located south of the harbor, are the Mauna Kea Beach Hotel, located approximately 2.2 miles from the harbor, having 310 rooms with an 18-hole golf course and clubhouse; the Mauna Lani Resort, eight miles from the site, having an 18-hole golf course and clubhouse; and the Waikoloa Beach Resort, ten miles from the harbor, having an 18-hole golf course and clubhouse.

The proposed acquisition will have no impact on existing recreational facilities.

3.3.2.7 Kaumalapau, Lanai

The proposed acquisition will have no impact on existing recreational facilities.

3.3.3 Economic Development Issues

3.3.3.1 Kaunakakai, Molokai

Kaunakakai Harbor provides the only location for commercial shipping operations on the island of Molokai. Most of the products consumed by households and businesses, and most agricultural products grown on Molokai, are shipped in or out of Kaunakakai Harbor.

Future facility requirements at Kaunakakai Harbor will be largely dependent on the population growth and economic activity on the island. At this time, the future of Molokai will probably remain as status quo. No significant amount of growth is anticipated on the island. Agricultural activities will continue primarily in the eastern portion of the island. Overall, according to the County Plan, significant changes are not anticipated in the development of Molokai.

The proposed acquisition will not change economic development issues.

3.3.3.2 Nawiliwili, Kauai

Nawiliwili Harbor is the central shipping port serving the island of Kauai; a secondary harbor area is located along the southwestern shore of Kauai at Port Allen. Historic factors that have accounted for this development will continue to make Nawiliwili Harbor the central shipping and ocean transportation node for Kauai in the foreseeable future. Recent plans for the Lihue-Puhi area include substantial development of residential, recreational, commercial, and industrial activities, all leading to an increased and continuing reliance upon Nawiliwili Harbor.

The proposed acquisition will not change economic development issues.

3.3.3.3 Port Allen, Kauai

Port Allen Harbor is the island of Kauai's second harbor. Similar to all other Neighbor Island communities as well as the State in general, Kauai is greatly dependent on ocean transportation for its basic sustenance and economy. Port Allen Harbor represents one of the eight commercial harbors in Hawaii's Harbor system.

Honolulu Harbor serves as the hub of Hawaii's Commercial System where all major overseas calls are made, with the inter-island cargo distribution system branching out to service the Neighbor Islands. Therefore, as the facilities of Honolulu Harbor are modified to meet the growing cargo demands generated by the growth in population and the economy as well as the technological and operational changes in the maritime industry, the Neighbor Islands port facilities must also be modified to maintain an efficient and safe commercial harbor system.

The factors which will influence the facility planning of Port Allen are:

* The limited available State owned facilities and adjacent

expansion areas for larger commercial cargo operations;

* The potential use of the existing facilities for other commercial maritime related activities;

* The increasing growth in population and economy of the Neighbor Island communities;

* The dramatic increase in ocean passenger vessel calls to certain Neighbor Island commercial ports, and the emerging requirements to develop security measures to protect against terrorist activities;

* The technological advancement in the load carrying capacities of cargo handling equipment, and in larger and faster vessels;

* The new requirements for Federal/State navigational improvement projects, and in operation and maintenance of commercial deep draft harbors where more financial responsibility will be imposed on the State;

* And the growing financial demands on the Harbors Division to improve and maintain statewide port facilities.

The proposed acquisition will not change economic development issues.

3.3.3.4 Honolulu Harbor, Oahu

Honolulu is the State's principal port. All general cargo, including mainland and foreign containers destined for Hawaii, is received through Honolulu. Cargo with neighbor island destinations is transshipped through

the port by feeder vessels.

Fifty acres are available for cargo operations at Piers 1 and 2, including space presently occupied by a container freight station and FTZ subzone warehouses. Current production involves a mixture of container, neo-bulk, and roll on-roll off cargo traffic.

Harbors Division statistical data for the last five years, supplemented by the U.S. Army Corps of Engineers commodity statistics, have been used in the Harbor Study. Fiscal year 1986-87 is used as the study base year. For the base year, a total of approximately 7.58 million short tons of cargo were shipped through the port, both inbound and outbound.

Containerized cargo, domestic and foreign, is the largest cargo class at 3.4 million short tons accounting for 45 percent of the total port tonnage. Over 150 acres, or 58 percent of the port land area, are devoted to handling containers. Petroleum products form the second largest class at 1.4 million short tons or about 19 percent of the total tonnage.

Containerized cargo activity merits particular emphasis. Not only is it the port's largest cargo movement, but it has the fastest growing volume. As it continues to exhibit growth, it places a demand upon the port's land and water resources greater than all other cargo classifications combined. The growth in containerized cargo and autos, the dominant water borne cargo activities, is attributed to Hawaii's increasing population (both resident and tourist), state purchasing power, construction activity and personal income.

The proposed acquisition will not change economic development issues.

3.3.3.5 Hilo Harbor, Hawaii

Hilo is the capital and business center of the County of Hawaii. The 1980 population of Hilo was 42,320, and continues to brow at a slow rate in comparison to the Kona side of the island. Hilo's principal industry is sugar production, which is stable but not growing. Hilo Harbor is the principal port-of-call and handles the most cargo, agricultural and petroleum shipments in the County.

The proposed acquisition will not change economic development issues.

3.3.3.6 Kawaihae Harbor, Hawaii

Kawaihae Harbor is one of two deep-draft ports that services the Big Island. Similar to all other Neighbor Island communities as well as the State in general, Hawaii is greatly dependent on ocean transportation for its basic sustenance and economy. Kawaihae Harbor represents one of the eight commercial harbors in Hawaii's Harbor system.

Honolulu Harbor serves as the hub of Hawaii's Commercial System where all major overseas calls are made, with the inter-island cargo distribution system branching out to service the Neighbor Islands. Therefore, as the facilities of Honolulu Harbor are modified to meet the growing cargo demands generated by the growth in population and the economy as well as the technological and operational changes in the maritime industry, the Neighbor Islands port facilities must also be modified to maintain an efficient and safe commercial harbor system.

The factors which will influence the facility planning of Port Allen are:

* The rapid growth of population and economy of the western sector of the island, primarily influenced by the development of tourism destination sites, their ancillary markets, housing

development and infrastructure improvements;

* The dramatic increase in ocean passenger vessel calls to certain Neighbor Island commercial ports, and emerging requirement to develop security measures to protect against terrorist activities;

* The technological advancements inload carrying capacities of cargo handling equipment, resulting in the need to provide stronger piers and yard pavement;

* The technological advancement in the load carrying capacities of cargo handling equipment, and in larger and faster vessels;

* The new requirements for Federal/State navigational improvement projects, and in operation and maintenance of commercial deep draft harbors where more financial responsibility will be imposed on the State;

* The growing financial demands on the Harbors Division to improve and maintain statewide port facilities;

* The introduction of inter-island container service in 1986 and the rapid increase in cargo volume;

* The limited suitable cargo handling areas to meet increasing cargo volume;

* The continued and essential need to provide bulk sugar

loading facilities to support the sugar industry; and

* The emerging need to handle, store and transport increasing volume of fuel for aviation needs and proposed electrical generating power plants in West Hawaii.

The proposed acquisition will not change economic development issues.

3.3.3.7 Kaumalapau, Lanai

Kaumalapau Harbor is the lifeline of the community of Lanai. Pineapple production is the main industry on Lanai. General cargo movement for the Lanai community is transported on the "back-haul" by the same carrier which transports the fresh pineapple to Honolulu. With the exception of the periodic petroleum barge calls, this carrier is the only commercial user of the facility.

Similar to all other Neighbor Island communities as well as the State in general, Lanai is greatly dependent on ocean transportation for its basic sustenance and economy. For Lanai, like the other commercial Neighbor Island ports, Honolulu Harbor serves as the hub, where all major overseas calls are made and distribution to the island is through an inter-island barge distribution system.

The factors which will influence the planning of Kaumalapau Harbor are:

* The limited available facilities and expansion area for general cargo operations;

* The planned increase in development activities on the island;

* The potential growth in population;

* The technological advancements in the load carrying capacities of cargo handling equipment, and in larger and faster vessels:

* The new requirements for Federally supported navigational improvement projects, and in operations and maintenance of commercial deep draft harbors where more financial responsibility will be imposed on the local sponsor;

* The ongoing reconnaissance study by the Corps of Engineers for the rehabilitation of the damaged breakwater, and the responsibilities of financing the improvements to the facilities;

* And the April 30, 2009, lease expiration for certain portions of the harbor.

The proposed acquisition will not change economic development issues.

3.4 Infrastructure Systems and Services

3.4.1 Easements

3.4.1.1 Kaunakakai, Molokai

There is one electric transmission and telephone line easement. The proposed acquisition will have no impact on existing easements.

3.4.1.2 Nawiliwili, Kauai

Easements exist for drainage and Huleia-Niumalu Road. The proposed acquisition will have no impact on existing easements.

3.4.1.3 Port Allen, Kauai

Easements exist for a pipeline and a drain for Kauai Commercial Company. The proposed acquisition will have no impact on existing easements.

3.4.1.4 Honolulu Harbor, Oahu

The following easements exist:

Easement (ESMT) Number	Description
ESMT 2	Permanente Cement Co. 5 Ft = 1742 Sq Ft
ESMT 3	Permanente Cement Co. Underground Cableline 5 Ft = 1112 Sq Ft
ESMT 4	Permanente Cement Co. 5 Ft = 1178 Sq Ft
ESMT 5	11 FT = 757 Sq Ft
ESMT 10	Pipe Line 5 Ft = 1028 Sq Ft
ESMT 11	Pipe Line 3 Ft = 2182 Sq Ft
ESMT 12	Pipe Line 3 Ft = 2080 Sq Ft
ESMT 13	Pipe Line 3 Ft = 486 Sq Ft
ESMT 14	Pipe Line 3 Ft = 900 Sq Ft
ESMT 16	City & County of Honolulu and Board of Water Supply to install, maintain, operate, repair and remove underground water pipe lines, together with the right of ingress and egress to and from said easement.
ESMT 37	Pipe Line for Petroleum
ESMT 48	Oil Pipe Line 8908 Sq Ft
ESMT 49	Oil Pipe Line 1038 Sq Ft
ESMT 53	Oil Pipe Line 3 Ft = 530 Sq Ft
ESMT 56	Conveyor 1399 Sq Ft
ESMT 64	Oahu Transport Co.
ESMT 73	Shell Co.
ESMT 74	Shell Co.

An Easement for a perpetual non-exclusive waterline to the City and County of Honolulu's Board of Water Supply (CSF 18968, #15264) exists

within a portion of the underwater and filled area between the Marine Expeditionary Center and Sand Island parallel to the Bascule Bridge at the ewa end of the harbor. An electrical easement, G. L. S-3906 (CSF 13651) exists within the same vicinity, and partially in the submerged land area also.

A General Lease (S-5219) between DLNR and AT&T exists on the northeast coast of Sand Island for AT& T's cable ship landing site. The lease area includes a portion of the submerged lands (.0952 acre) that abuts the land area. About one-half of the submerged land area (.045 acre) crosses the Federal Project line in Honolulu Harbor.

Two sewer force main lines also exist within the entrance channel of Honolulu Harbor, and these are allowed by DLNR as General Lease numbers 4341 and 4658 to the City and County of Honolulu. Also, Chevron holds a revocable permit (No. 03942) for a fuel line within Honolulu Harbor from DLNR. The proposed acquisition will have no impact on existing easements, general leases nor revocable permits.

3.4.1.5 Hilo Harbor, Hawaii

Easements exist for Shell Oil Company of California pipeline (5 feet wide), Union Oil Company of California and Aloha Petroleum pipeline, and Standard Oil of California pipeline (5 feet wide), and a sugar conveyor system (20 feet wide).

The proposed acquisition will have no impact on existing easements.

3.4.1.6 Kawaihae Harbor, Hawaii

There is one existing easement for a pipeline (3 feet wide). The proposed

acquisition will have no impact on existing easements.

3.4.1.7 Kaumalapau, Lanai

There are no existing easements. The proposed acquisition will have no impact on existing easements.

3.4.2 *Bulkheads and Piers*

3.4.2.1 Kaunakakai, Molokai

The Pier island is a combination of fill land and pile supported structure. The pile supported section occupies the entire length of the west side of the pier island. The pile supported section extends back 40 FT from the face of the pier and comprises an area of about 40,570 SF, or approximately 14.5 percent of the total area of the pier island. The pile supported section was designed for a load of 750 LBS/SF.

A project to strengthen 2,900 SF of the pile support section slightly north of the center of the pile was recently completed. This project extended from the pile supported pier to the fill land so that heavy cargo loads could be accommodated at the harbor. The strengthened area will now accommodate loads of 1,000 LBS/SF. This work commenced in October 1990 and was completed in April 1991.

The major feature of the Harbor is the 687 FT long pier located along the west side of the pier island. All commercial harbor operations occur along this pier. Cargo and fuel barges berth along this pier to load and unload cargo. In addition, the Maui Princess uses about 140 linear feet along the northern end of the commercial pier to load and unload commuter passengers and visitors to Molokai. Rails from a former overhead crane system which ran the entire length of the commercial pier still remain,

although they are no longer in usable condition.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.2 Nawiliwili, Kauai

A barge pier facility was proposed in 1989 that will be 700 feet in length and 50 feet wide. Located at the southern end of the pier will be an additional 150 x 130 foot area for "roll-on/roll off" cargo. Also, the pier may be expanded on the northern end for an additional 235 feet in the future. The proposed barge pier is designed to serve the needs of interisland cargo shipping activities as well as other users such as the Coast Guard and cruise lines.

The proposed barge pier will be constructed of concrete with a 16-inch thick slab. Concrete pilings will support the barge pier, backed by a sheet pile bulkhead. Located seaward of the sheet piles will be a rock revetment to stabilize the bottom slope. The harbor floor at the edge of the barge pier is planned for a depth of approximately 35 feet.

In 1990 a new pier approximately 800-feet long and 50-feet wide with a finished elevation of +8.83 feet (+8' -10") MLLW (the finished deck elevation was chosen to match the existing pier deck elevations). An extension 150-feet long by 130-feet wide will be located at the south end of the pier to facilitate roll-on roll-off operations. The dredged depth of the facility has been stated to be -35.0 feet MLLW, matching the dredged depth of the rest of the harbor.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.3 Port Allen, Kauai

Port Allen Pier has a berthing space of 124 plus 600 and the alongside depth at MLLW is 35 feet. The pier is used for the receipt of containerized and conventional general cargo, such as liquid and dry fertilizer, molasses and petroleum products.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.4 Honolulu Harbor, Oahu

Piers 1 and 2 are located in the project area and have a berthing space of 2,967 feet and the depth alongside at MLLW is 36 to 40 feet. The piers are used for the receipt and shipment of containerized and conventional general cargo, and heavy machinery in foreign and domestic trade.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.5 Hilo Harbor, Hawaii

Hilo harbor has three piers:

Pier 1

Pier 1 has a berthing space of 1,255 feet and the depth alongside at MLLW is 35 feet. It is used for the receipt of conventional general cargo, such as; dry fertilizer, fuel oil, lumber, molasses, sugar and passengers.

Pier 2

Pier 2 has a berthing space of 549 feet plus 173 feet and the depth alongside at MLLW is 35 feet. It is used for the receipt of conventional,

containerized, and roll-on roll-off general cargo, such as; automobiles and lumber.

Pier 3

Pier 3 has a berthing space of 636 feet and the depth alongside at MLLW is 35 feet. It is used for the receipt of conventional and containerized general cargo such as liquefied petroleum gas, lumber, molasses, and petroleum products.

The pier has concrete pile and deck wharf extending from a concrete bulkhead with solid fill; fronted by a timber fender system with rubber tire bumpers.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.6 Kawaihae Harbor, Hawaii

Kawaihae has two wharfs and no piers. The berthing space for Wharf 1 is 410 feet and for Wharf 2 it is 602 feet. The depth alongside at MLLW of Wharf 1 is 20-24 feet and for Wharf 2 it is 35 feet. Both wharfs are used for the receipt of conventional and containerized general cargo, such as; cement, dry fertilizer, grain, lava cinders, lumber, molasses, petroleum products and sugar.

Wharf 1 has a concrete bulkhead with part asphalt and part concrete surfaced solid fill; fronted by timber fender system with rubber tire bumpers. Wharf 2 has a concrete pile and deck, fronted by timber fender system with rubber tire bumpers. The wharf extends from the concrete capped steel sheet pile bulkhead with solid fill.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.2.7 Kaumalapau, Lanai

Kaumalapau has no piers and one concrete decked wharf fronted by a timber fender system. It is used for the receipt dry bulk and liquid fertilizer and petroleum products; and shipment of pineapples. The wharf has berthing space of 400 feet and the depth alongside at MLLW is 27 feet.

The proposed acquisition will have no impact on existing bulkheads and piers.

3.4.3 Potable Water System

3.4.3.1 Kaunakakai, Molokai

There is a two-inch water line which runs along the causeway from Kaunakakai Town, through the middle of the pier, and out to the commercial edge of the pier near the existing secured storage shed. Water service is provided mostly for small scale uses such as the administrative off ices and the comfort station located in the Harbor agent building.

Water service is also provided to the small boat docking area on the west side of the causeway. These users of water on the pier do not create a significant demand. The Harbors Division has proposed a project to upgrade the existing 2-inch water line to a size sufficient to meet County of Maui fire flow requirements.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.2 Nawiliwili, Kauai

Water is supplied to the project site from the existing 12-inch line, located along Waapa Road. Proposed water lines serving project facilities include an 8-inch loop from the east to the west sides of the site. Water will be supplied by the .25mg water tank located near the intersection of Rice Street and Hoolako Street.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.3. Port Allen, Kauai

Water for the project area is provided by a 2-inch water line.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.4 Honolulu Harbor, Oahu

Honolulu Harbor obtains water service from the Board of Water Supply (BWS) Honolulu Water District Low Service System. The primary water sources for this system are the Moanalua Wells, Kalihi Shaft, Kalihi Station, Beretania Station, Wilder Wells and Kaimuki Station located in the Honolulu District.

The primary water transmission line for Honolulu Harbor is a 42-inch line that runs along Vineyard Boulevard from Liliha Street to Lusitana Street then down to Beretania Street to the McCully-Moilili area. The western portion of the 42-inch water main runs along Kamehameha Highway and Dillingham Boulevard to Kalihi Street. A 12-inch main connects the two portions of the 42-inch main.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.5 Hilo Harbor, Hawaii

Water is supplied through a 3-inch water line.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.6 Kawaihae Harbor, Hawaii

Presently a six-inch domestic water main within Kawaihae Road serves the Kawaihae Village and the surrounding developed areas. Under the jurisdiction of the Hawaii County Department of Water Supply, the existing main and the existing source are inadequate to service all of the proposed water needs at the harbor. Until additional sources and larger transmission lines are funded and constructed, water usage at the harbor may be restricted by the currently allowed installation of a 5/8-inch meter, which would probably be adequate for washdown, comfort station and drip irrigation use demands.

In order to have adequate fire fighting capabilities, the existing six-inch maine in Kawaihae Road will need to be increased in size.

The proposed acquisition will have no impact on the existing potable water system.

3.4.3.7 Kaumalapau, Lanai

Water is supplied through one 2 1/2 and one 3/4-inch water lines.

The proposed acquisition will have no impact on the existing potable water

system.

3.4.4 Drainage System

3.4.4.1 Kaunakakai, Molokai

Drainage for the pier island is provided by a drainage system located along the central area of the pier island. Pavement is graded towards four drop-drains which are centered over this drainage system. The line discharges runoff into the ocean at the southwest tip of the pier.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.2 Nawiliwili, Kauai

An improved storm drainage collection system for the project site was proposed in 1990 and it consists of 18, 24 and 36-inch reinforced concrete pipes, catch basins, and headwalls to collect, convey, and discharge the runoff into Nawiliwili Harbor and Puali stream.

The Pre-development drainage system will be an installation of a 36" RCP crossing the Small Boat Harbor access road with concrete headwalls at both ends. A ditch/swale will be constructed along the East side of the access road to direct the runoff to the 36" pipe for discharge into the Puali Stream.

The drainage system for Phase I will involve the construction of 18", 24" and 36" RCP lines with catch basins within the Inter-Island cargo facility and along the Waapa Road widening and realignment area. The runoff through this system will be discharged into Nawiliwili Harbor.

The complete drainage system along the Small Boat Harbor access road

will be constructed during the Phase II portion of the development. This system will include 18" and 24" RCP lines with catch basins serving the Maritime Industrial area. The work will involve replacement of the existing headwall on the West side of the access road with a catch basin and replacement of the ditch/swale constructed in the pre-development phase with an underground drainage system.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.3 Port Allen, Kauai

Currently, Port Allen Harbor does not have an underground drainage system. Runoff is conveyed by sheet flow into the harbor.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.4 Honolulu Harbor, Oahu

The two main drainage features for Honolulu Harbor are Nuuanu Stream and Kapalama Canal. The Downtown area has drainage systems on Richards Street, Alakea and Bishop Streets, Fort and Queen Streets, Bethel Street, Nuuanu Street, Smith Street, Maunakea Street and Kekaulike Street. The Downtown and Kapalama areas have many systems that drain into Nuunau Stream and Kapalama Canal. The largest drainage system is in the Kapalama area. This system drains into the Harbor with an outlet at Pier 40.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.5 Hilo Harbor, Hawaii

Drainage features for Hilo Harbor consist of a series of catch flow basins and pipes which collect, convey, and discharge the runoff into the harbor.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.6 Kawaihae Harbor, Hawaii

Surface runoff will be directed to one or more drywells. The specific number of drywells will be determined during the design stage after the flow quantity is calculated.

Two gulches reach the coral fill area, the Makahuna Gulch from the northeast and the Makeahua Gulch from the east. Because of high percolation rates, surface runoff through the site is negligible although occasional heavy storms may produce runoff into marine waters.

The proposed acquisition will have no impact on existing drainage systems.

3.4.4.7 Kaumalapau, Lanai

Surface runoff is directed to two outlets, which are located at the west end of the harbor.

The proposed acquisition will have no impact on existing drainage systems.

3.4.5 Wastewater System

3.4.5.1 Kaunakakai, Molokai

Currently, Kaunakakai Harbor does not have a sewer system. The comfort station in the commercial harbor discharges to a cesspool. In the future, when the harbor area is served by a sewer system, this cesspool could be abandoned, and the discharge directed to a proposed sewer system. No schedule has been established for development of this sewer system.

The proposed acquisition will have no impact on exisiting wastewater systems.

3.4.5.2 Nawiliwili, Kauai

Sewer facilities serving the project site include two 8-inch lines connecting to two package plants located in the northwest and northeast corners of the project site.

The proposed acquisition will have no impact on exisiting wastewater systems.

3.4.5.3 Port Allen, Kauai

The proposed acquisition will have no impact on exisiting cesspool wastewater system.

3.4.5.4 Honolulu Harbor, Oahu

The Downtown area is sewered by a 34-inch line which increases to a 36-inch sewer line near Keawe Street. These sewer lines enter the Ala Moana Wastewater Pump Station. The Kapalama area is sewered by two 54-inch sewer lines on Nimitz Highway. The 54-inch lines flow into the Hart Street Wastewater Pump Station. The Sand Island area is sewered by an 18-inch sewer line within the Sand Island Road and by a series of sewage lift stations within the Sand Island Park which directly enter the Sand Island Wastewater Treatment Plant. The Sand Island Wastewater Treatment Plant is located in the center of Sand Island.

The proposed acquisition will have no impact on exisiting wastewater systems.

3.4.5.5 Hilo Harbor, Hawaii

The proposed acquisition will have no impact on exisiting cesspool wastewater system.

3.4.5.6 Kawaihae Harbor, Hawaii

There are no public or private sewerage systems in the vicinity of the proposed harbor and there are no immediate plans to construct a public system. The coastal water at the harbor is currently Class A and as such, a system complete with treatment facilities will be provided.

One packaged wastewater treatment plant complete with aeration and setting compartments, chlorination chamber and a treated effluent cesspool will handle waste from the proposed onshore facilities. The plant is located on the west end of the harbor. In the distant future when a public wastewater treatment plant could be either converted to a sewage lift station or a packaged sewage lift station installed.

The proposed acquisition will have no impact on exisiting wastewater systems.

3.4.5.7 Kaumalapau, Lanai

The proposed acquisition will have no impact on exisiting cesspool wastewater system.

3.4.6 Electric and Communications Systems

3.4.6.1 Kaunakakai, Molokai

Electrical power is provided by Molokai Electric Company and telephone service by Hawaiian Telephone Company.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.2 Nawiliwili, Kauai

Electrical power is provided by Kauai Electric and telephone service by

Hawaiian Telephone Company. Electrical Power is supplied to the project area via a 12 KV overhead distribution line located near Waapa Road. Electrical and telephone lines serving the project site include lines along the proposed Young Brothers Entrance Road connecting to the existing lines on Waapa Road.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.3 Port Allen, Kauai

Electric power is provided by Kauai Electric and telephone service by Hawaiian Telephone Company.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.4 Honolulu Harbor, Oahu

The Hawaiian Electric Company's Honolulu Power Plant presently generates power during peak loading hours. The substation at the power plant is adequate to serve the Downtown area. Kapalama and Sand Island areas are at present adequately served from existing substations located in these areas. Telephone service is provided by the main central office of the Hawaiian Telephone Company.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.5 Hilo Harbor, Hawaii

Electric power is provided by Hawaii Electric Light Company and telephone service by Hawaiian Telephone Company.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.6 Kawaihae Harbor, Hawaii

A 12 KV distribution line exists within Kawaihae Road and is adequate for handling the electrical demand by the facilities in the harbor. In addition to the 12 KV line, a 69 KV transmission line is installed on the existing pole. This latter line is not active and will be activated if necessary to operate very high energy consuming equipment and motors.

The existing telephone service within Kawaihae Road is also adequate. Power and telephone service to the harbor is an underground system located within the access road shoulder.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.6.7 Kaumalapau, Lanai

Electric power is provided by Maui Electric Company and telephone service by Hawaiian Telephone Company.

The proposed acquisition will have no impact on existing electrical and communications systems.

3.4.7 Security, Fire, Medical Services

3.4.7.1 Kaunakakai, Molokai

The Molokai Fire department operates three fire stations: the Hoolehua, Kaunakakai, and Pukoo fire stations. Kaunakakai Fire station services the Kaunakakai Harbor area.

The Kaunakakai harbor area is serviced by the Molokai Police Station, located at Kaunakakai. The Molokai station is currently operating with 10 patrol officers.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.2 Nawiliwili, Kauai

The Kauai Fire department operates seven fire stations: the Hanalei, Hanapepe, Kalaheo, Kapaa, Koloa, Lihue, and Waimea fire stations. The Lihue Fire station, serving the Nawiliwili Harbor area, is one of the busiest stations on the island. The Lihue station is equipped with 2 vehicles and a total of 21 firemen.

The police force for Kauai consists of 132 officers and 20 civilians. Currently, there are three police stations located approximately 25 miles apart: Hanalei, Waimea, and Lihue. The Nawiliwili Harbor area is serviced by the Lihue Police Station. The Lihue station is currently operating with 44 patrol officers.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.3 Port Allen, Kauai

The Kauai Fire department operates seven fire stations: the Hanalei, Hanapepe, Kalaheo, Kapaa, Koloa, Lihue, and Waimea fire stations. Port Allen is serviced by the Hanapepe Fire Station, which has one company and 4 firefighters for each 8-hour shift.

The police force for Kauai consists of 132 officers and 20 civilians.

Currently, there are three police stations located approximately 25 miles apart: Hanalei, Waimea, and Lihue. Response time to any given point between these three stations is approximately 15 to 20 minutes. There are a total of 9 officers on each shift to respond to emergency calls with 2 officers on standby as backup. Each of the nine sectors is serviced by one police officer.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.4 Honolulu Harbor, Hawaii

First response is provided by the Central Fire Station (104 South Beretania Street) which houses two companies with a total of 12 firefighters. Additional Fire Department service is available from the Kalihi Kai Station which houses three companies with a total of 18 firefighters.

Police service is centralized for the City and County of Honolulu with a staff of 2000 officers. The nearest substation is Kalihi Station which is staffed with approximately 100 police officers.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.5 Hilo Harbor, Hawaii

The Waikaea Fire Station, located at 98 Keaa Street, provides fire protection services to the harbor. Currently there are 3 companies with 15 firefighters.

The Hilo Harbor area is serviced by the Hilo Police Station, located at 349

Kapiolani. The Hilo station is currently operating with 335 patrol officers.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.6 Kawaihae Harbor, Hawaii

Fire protection service for the harbor is provided by the Waimea Fire Station. The station provides 24-hour service and is equipped with one engine, a 1,250-gallon water tanker and a rescue van used by an emergency medical unit. Additional services are provided by a privately owned fire truck manned by volunteers stationed at the Westin Mauna Kea beach hotel, and County-operated station at the Mauna Lani Resort.

Police services for Kawaihae Harbor are provided by the Waimea Police Station. There are at present, a4 patrolmen assigned to each 8-hour shift. According to current staffing expansion plans at the Waimea Station, an additional 10 to 12 more people are expected to help meet the district's immediate needs.

The proposed acquisition will have no impact on security, fire, and medical services.

3.4.7.7 Kaumalapau, Lanai

The Maui County Fire Department has one fire station on Lanai which operates 24 hours a day. The station has a crew of 4 firemen--two from Lanai and two who travel from Maui for their shifts. Prior to September 1989, Lanai was served by a volunteer fire crew. Funds have been requested from the County of Maui for one additional fireman and the purchase of ocean rescue equipment.

The Maui County Police Department has one police station on Lanai. The existing police station is a one room facility with a separate confinement area on the same property. The Lanai police force consists of 7 officers, an additional 5 more people are expected to help meet the district's immediate needs.

The proposed acquisition will have no impact on security, fire, and medical services.

SECTION 4

ALTERNATIVES TO PROPOSED ACTION

4.1 Overview

The alternatives considered for this evaluation include the "no project" alternative.

4.2 No Action

Taking no action is not considered to be a feasible alternative as it would result in the continuance of overlapping jurisdiction of DLNR and DOT for commercial harbors within the State. DOT manages the surface water and DLNR the submerged lands (i.e., lands seaward of the shoreline). The overlapping jurisdiction has created some confusion and delays in determining permit requirements for commercial, recreational and maritime activities.

SECTION 5

ENVIRONMENTAL CONSEQUENCES

5.1 Short- and Long- Term Impacts

No short- or long- term impacts are expected from the proposed acquisition. Changes will not be made to the existing land uses at this time, therefore no short- or long- term impacts are anticipated. The appearance of the project site will not be altered at this time so there will be no affect on recreational activities, marine life, or wildlife.

5.2 Federal, State, County Plans, Policies, Controls

All projects that are proposed for each harbor site will abide by all federal, state, county plans, policies and controls.

5.3 Required Permits and Approvals

The proposed acquisition will require a CDUA permit and the approving board will be DLNR. At the time that specific developments are proposed applicable permits will be applied for.

5.4 Short Term Use versus Long Term Productivity

The objective of the acquisition of the submerged lands within the seven (7) commercial harbors statewide is to simplify the jurisdictional problems within these particular commercial harbors. The proposed acquisition will not impact the physical, social, or economic resources of the seven sites. Existing land uses will remain the same.require any irreversible and irretrievable commitment of resources. Changes will not be made to the existing land uses at this time, therefore no use of resources is anticipated.

Long-term gains resulting from the proposed acquisition include the resolving of the problem of jurisdiction over submerged lands within the seven (7) commercial harbors statewide which will facilitate expeditious processing of requests for CDUA permit applications. The proposed project will benefit both private individuals and government agencies.

5.5 Unresolved Issues

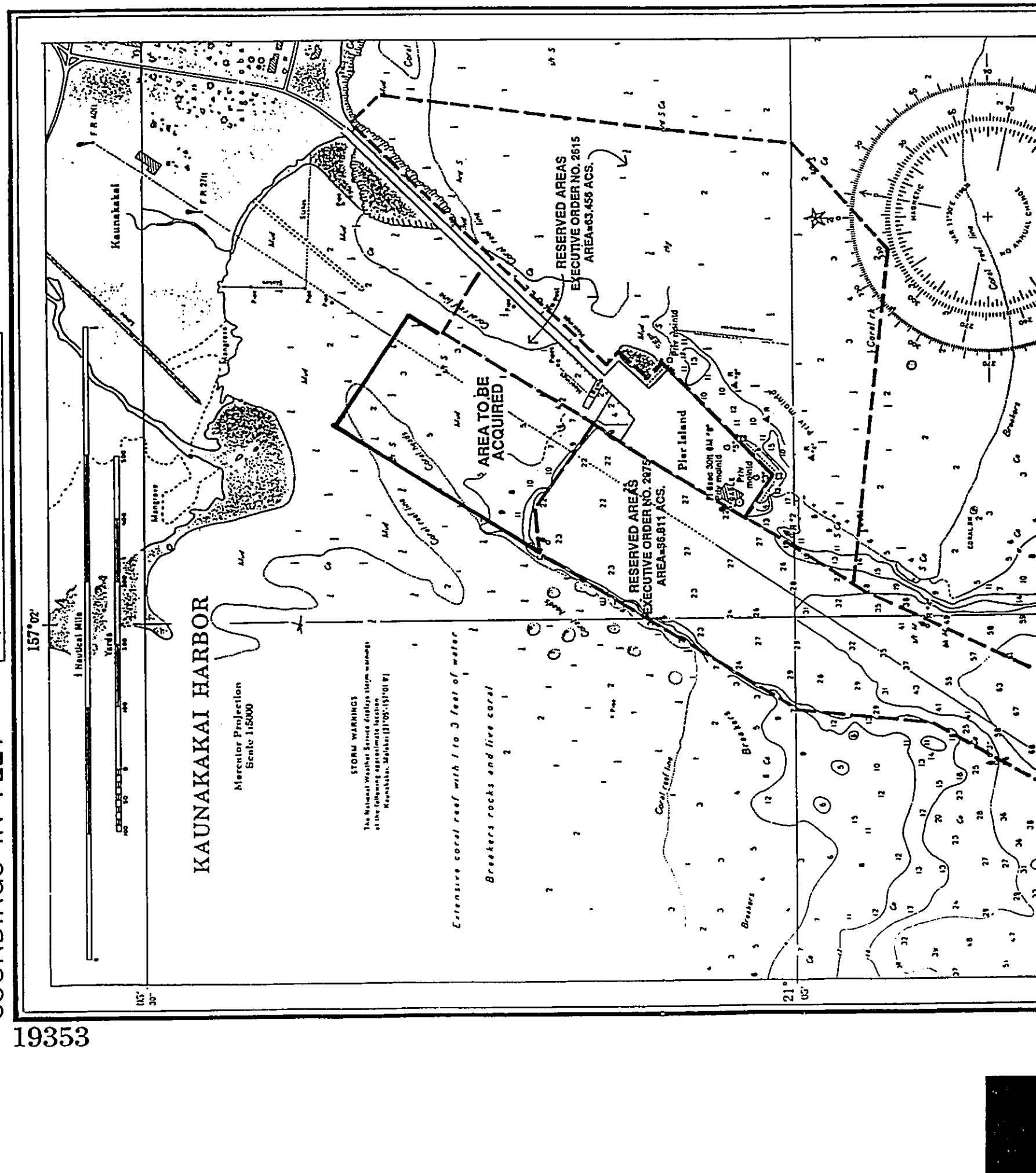
No provision of conceptual boundaries for the submerged lands with the seven (7) commercial harbors statewide is completed. The exact metes and bounds will be delineated for purposes of subdivisions and will be completed subsequent to the CDUA.

SECTION 6

PRE-CONSULTATION PROCESS

The following parties were sent copies of the Executive Summary for the proposed action with a request for input/comments during the preparation of the environmental assessment on December 2, 1992. The list of consulted parties is followed by copies of the responses received during the pre-consultation process.

CONSULTED PARTIES	RESPONDED	
	WITH COMMENTS	NO COMMENTS
LTC James T. Muratsuchi District Engineering U.S. Army Corps of Engineers		
U.S. Department of the Interior Fish and Wildlife Service		
U.S. Department of the Interior National Park Service		
Mr. Benjamin B. Lee Chief Officer City and County of Honolulu Department of General Planning		X
Mr. Donald A. Clegg Director City and County of Honolulu Department of Land Utilization		
Mr. C. Michael Street Director City and County of Honolulu		X



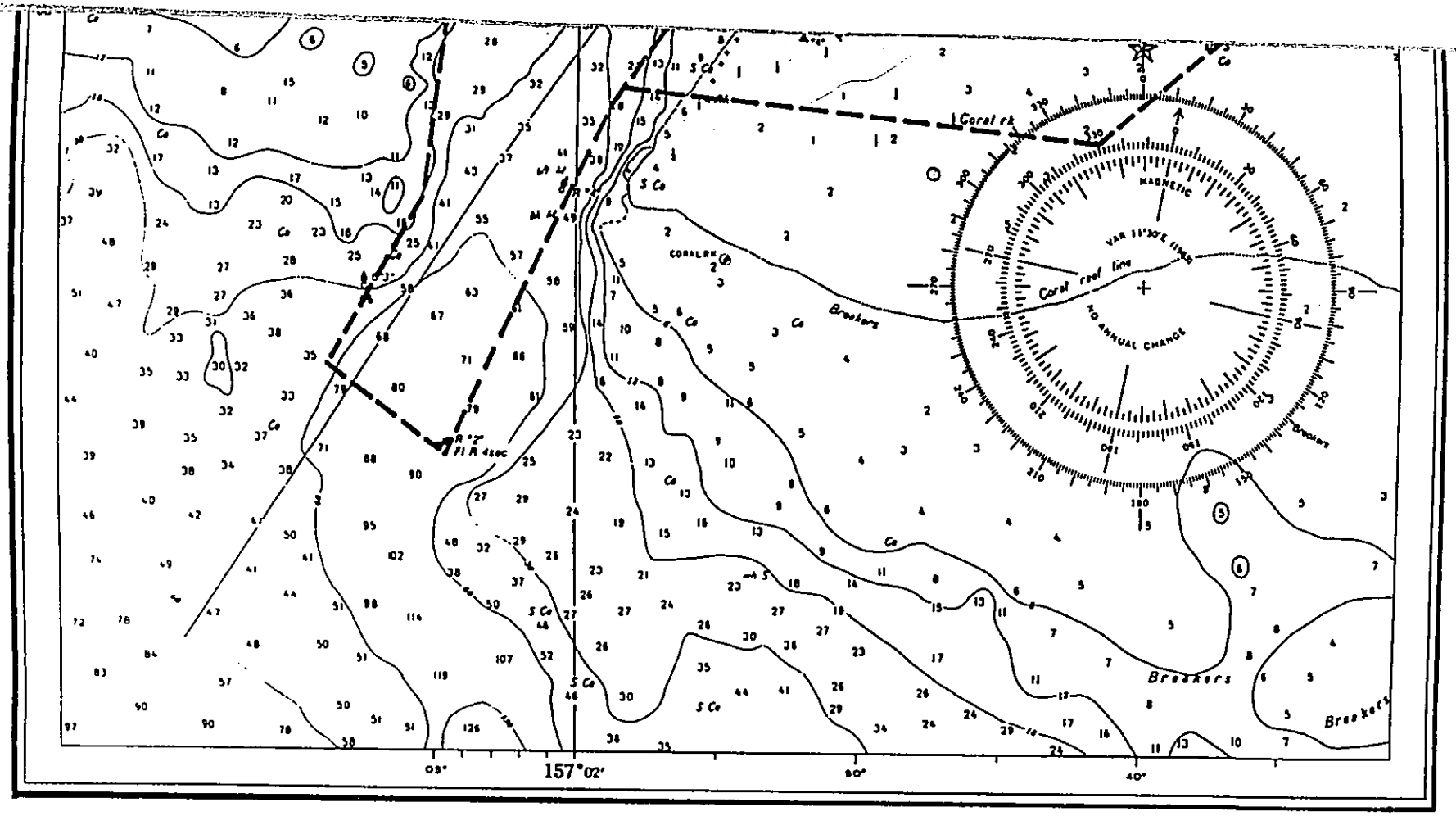


Figure 1-7
PROJECT BOUNDARY
KAUNAKAKAI HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

0 500 1000
FEET

R. M. TOWILL CORPORATION
OCTOBER 1992

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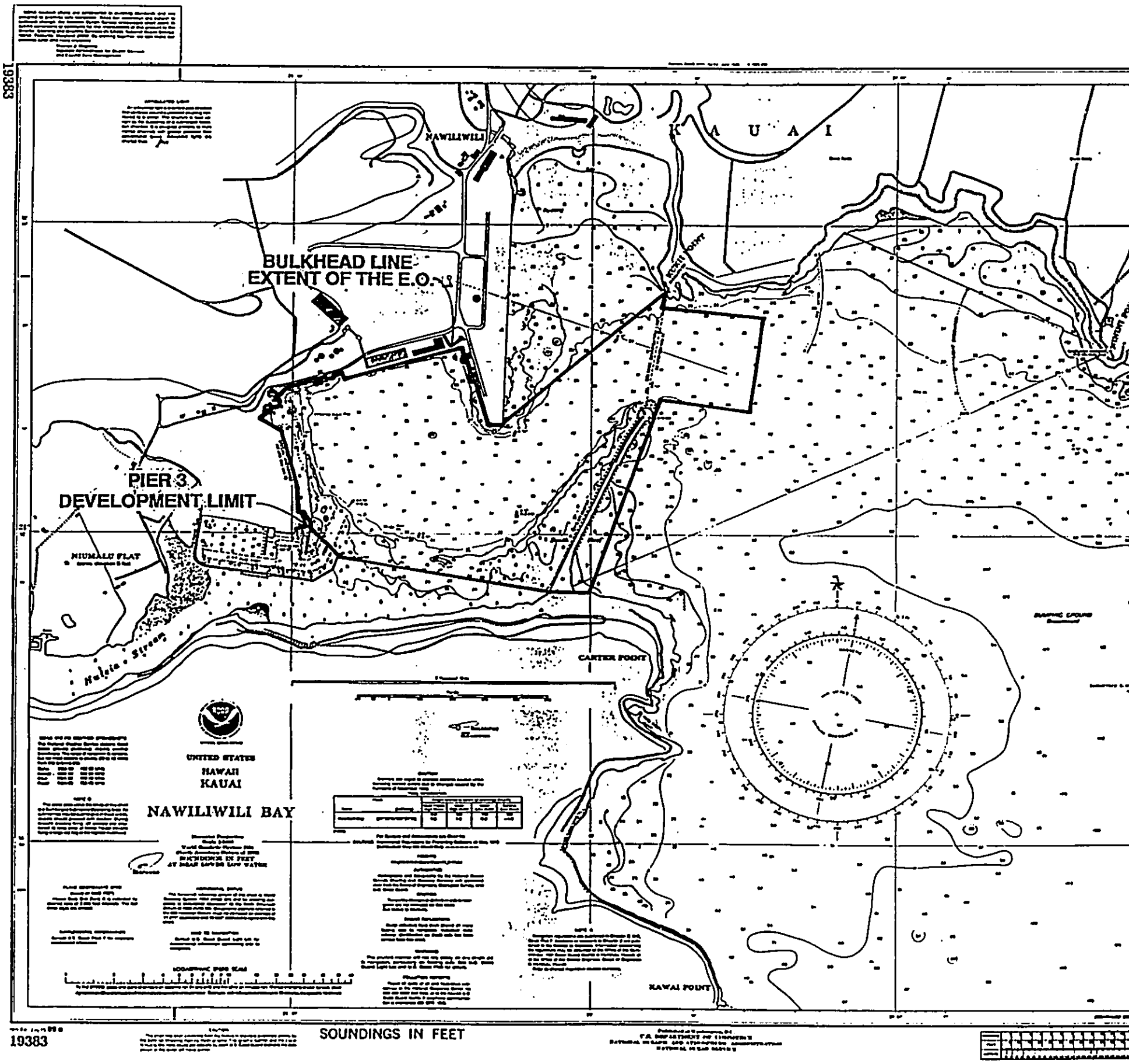

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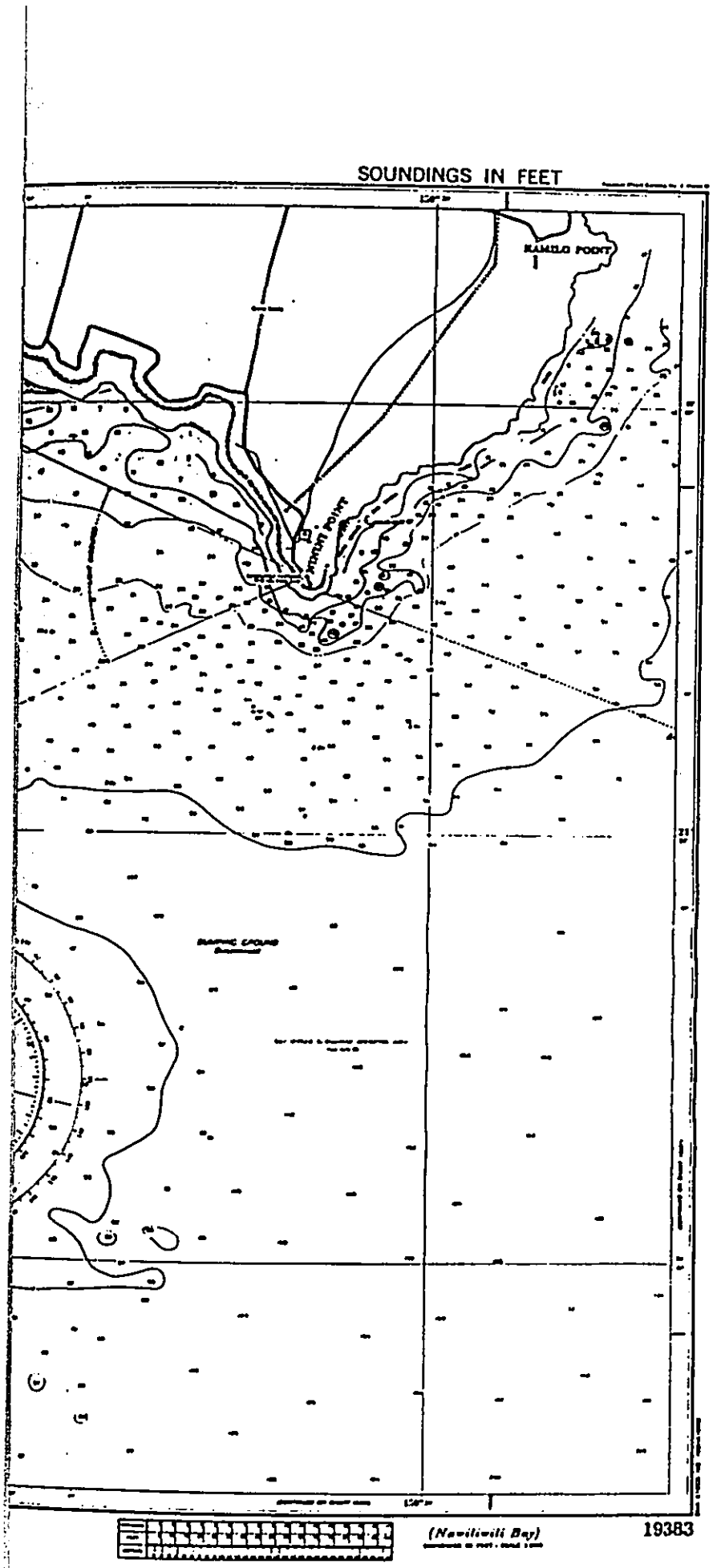

Figure 1-8
PROJECT BOUNDARY
NAWILIWILI HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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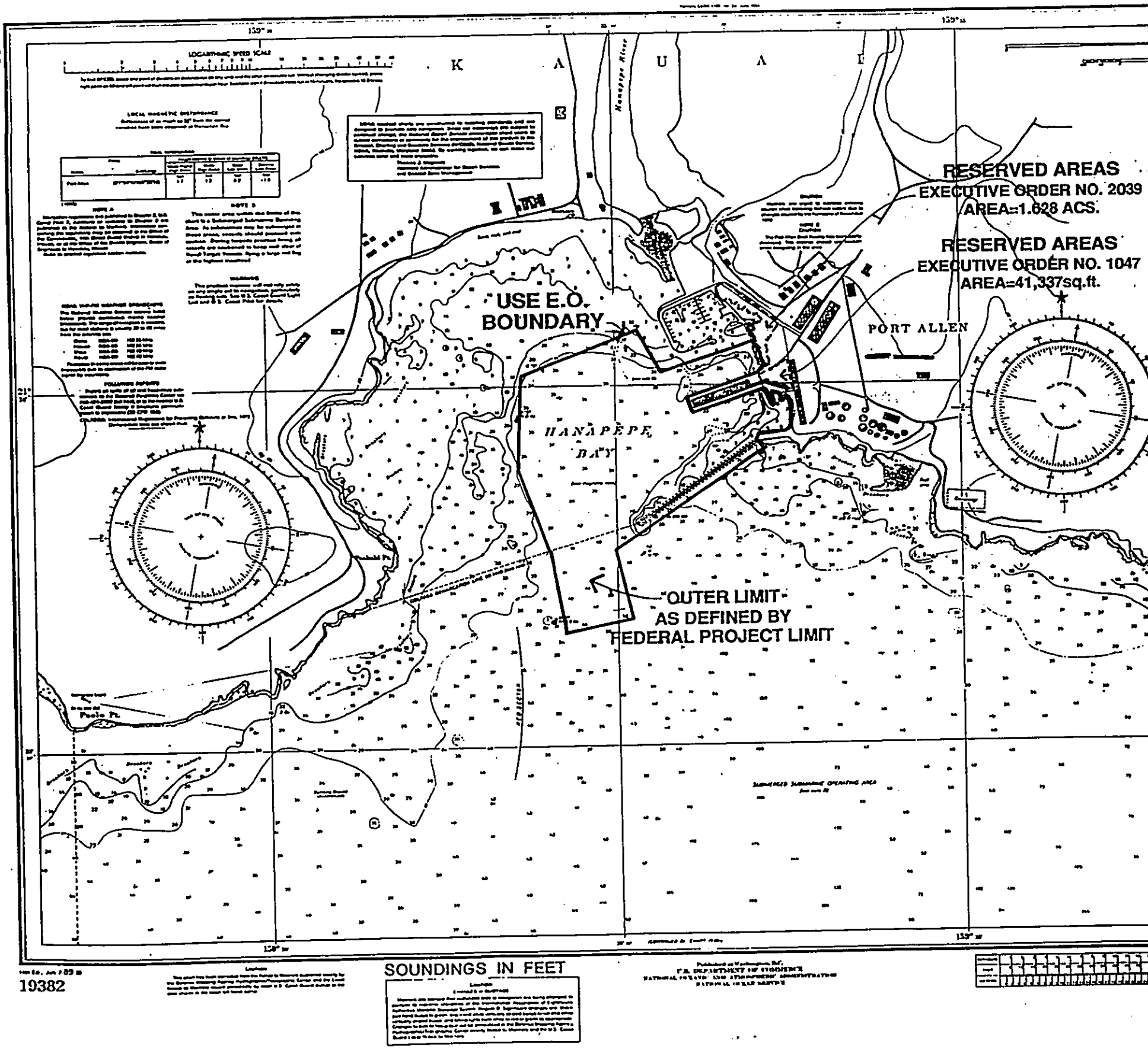

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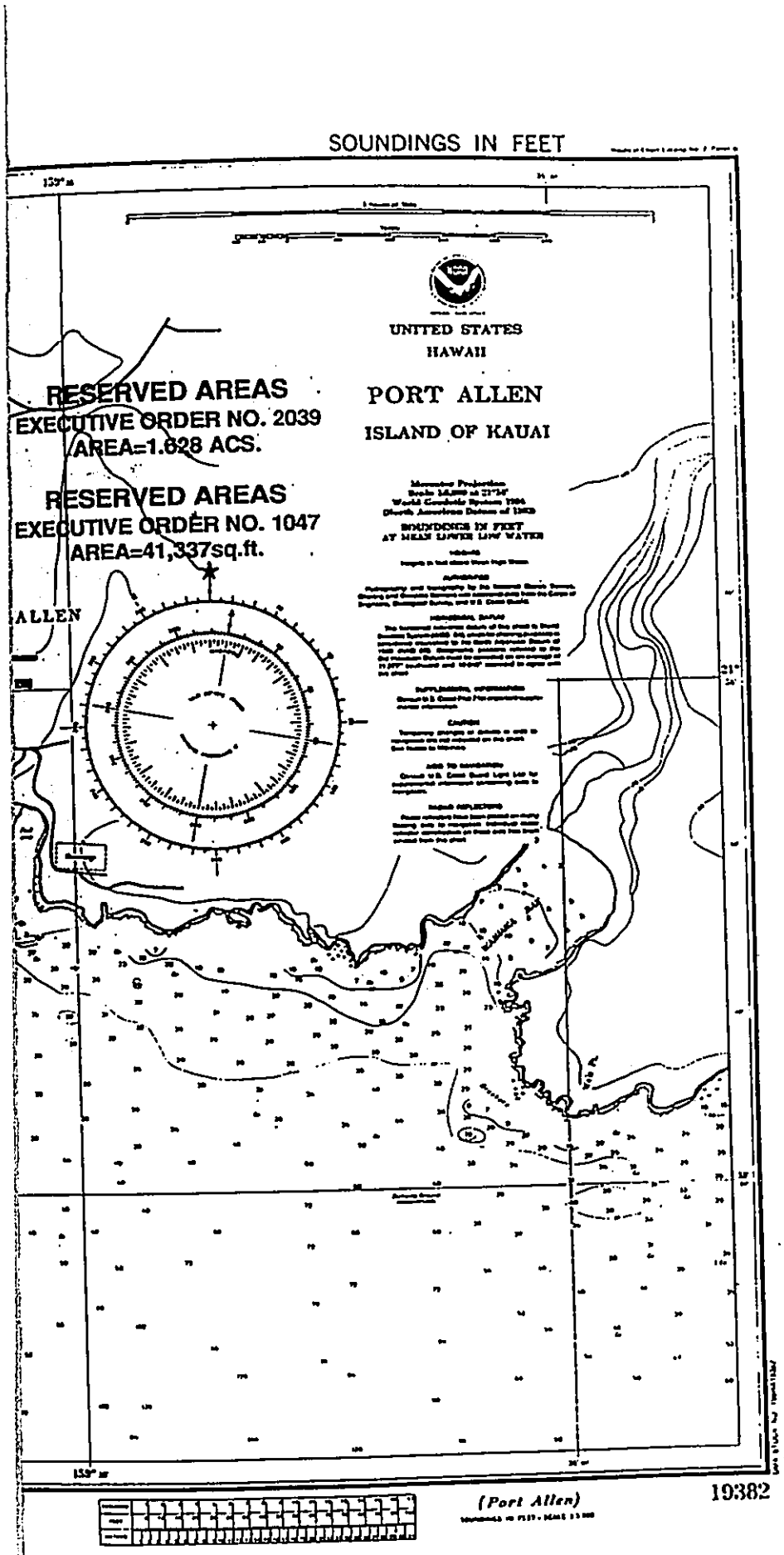
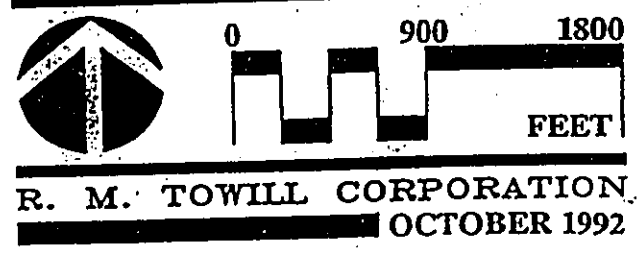


Figure 1-9
PROJECT BOUNDARY
PORT ALLEN HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide



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OCTOBER 1992

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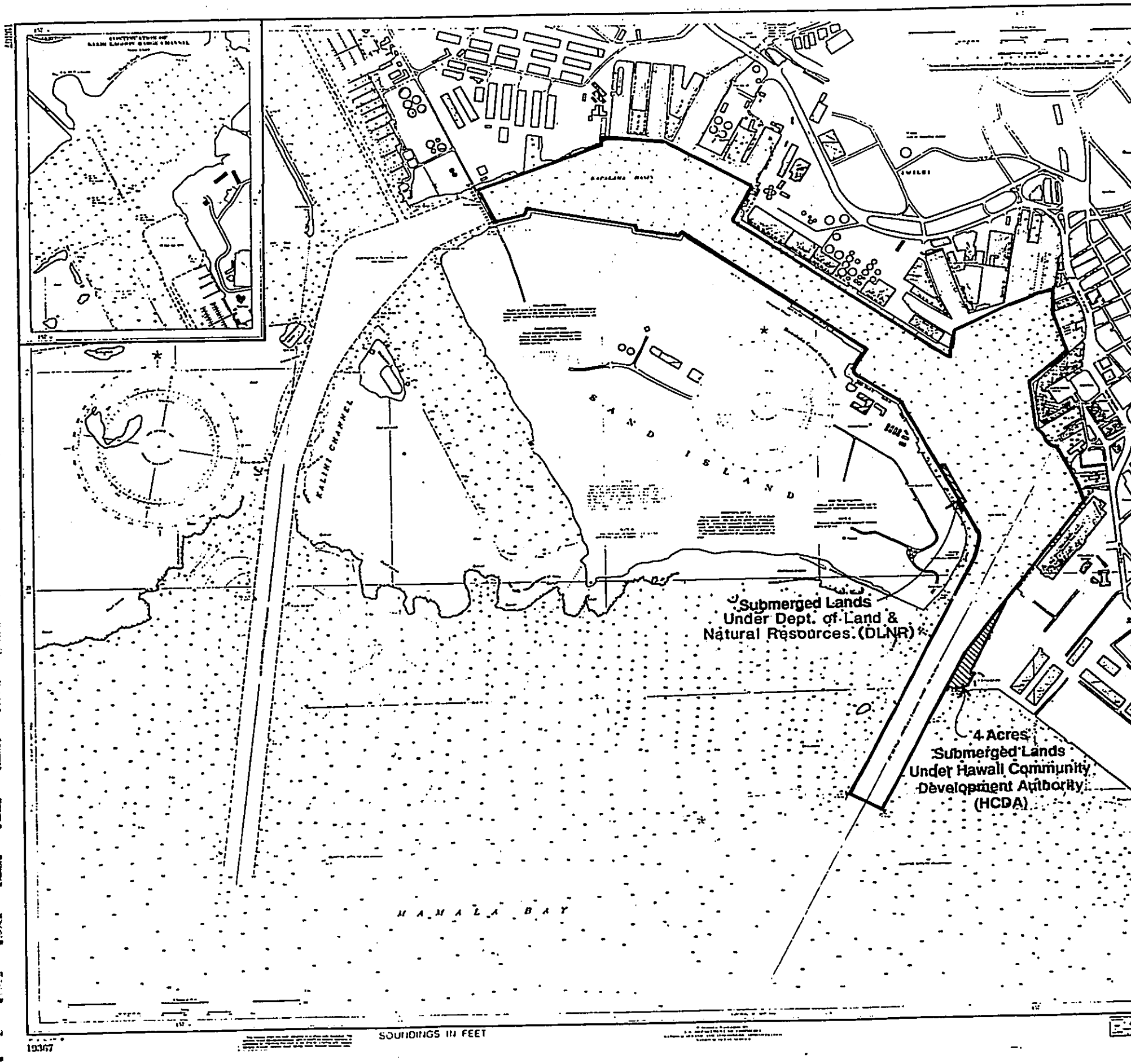

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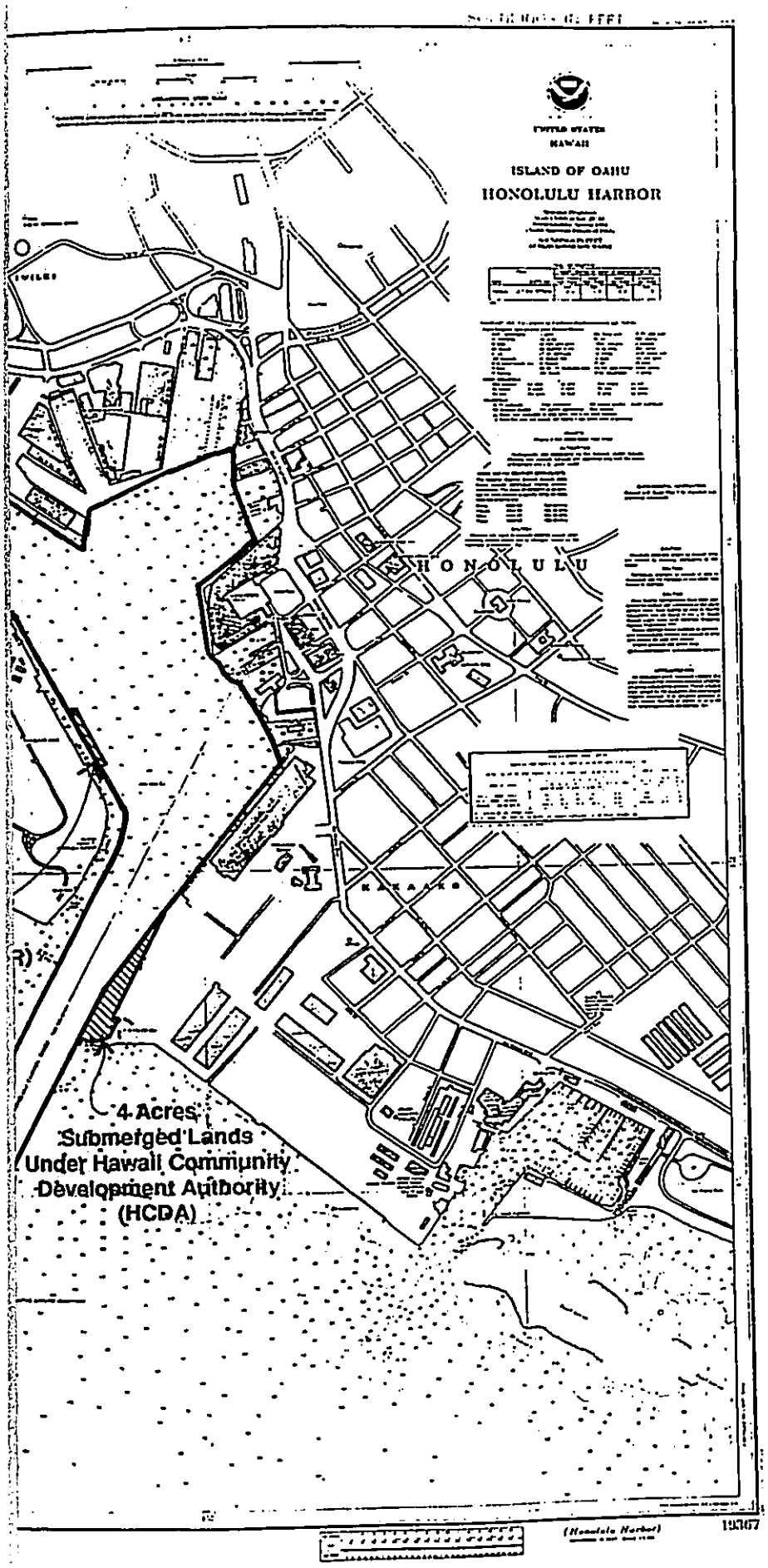

Figure 1-10
PROJECT BOUNDARY
HONOLULU HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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OCTOBER 1992

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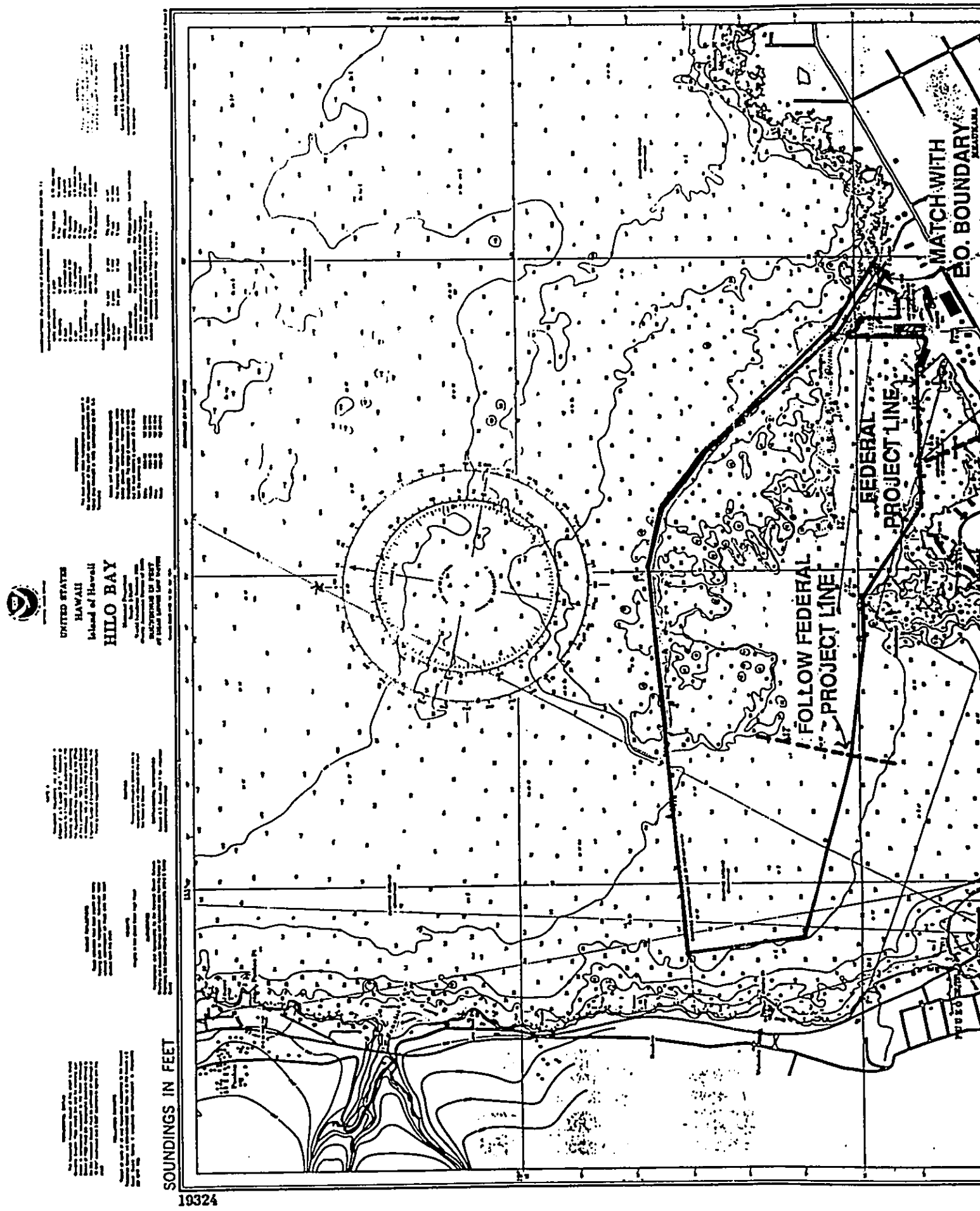

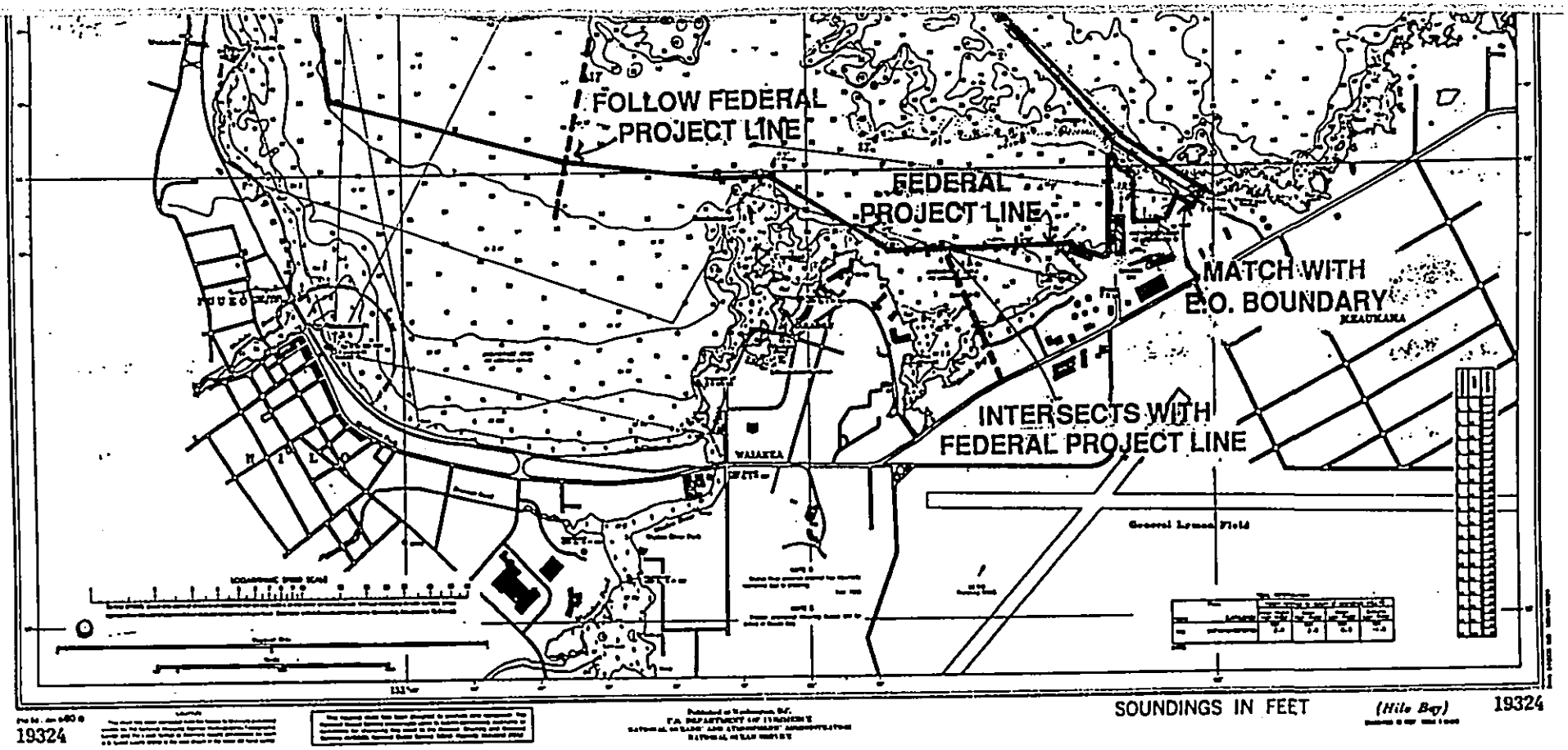

Figure 1-11
PROJECT BOUNDARY
HILO HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

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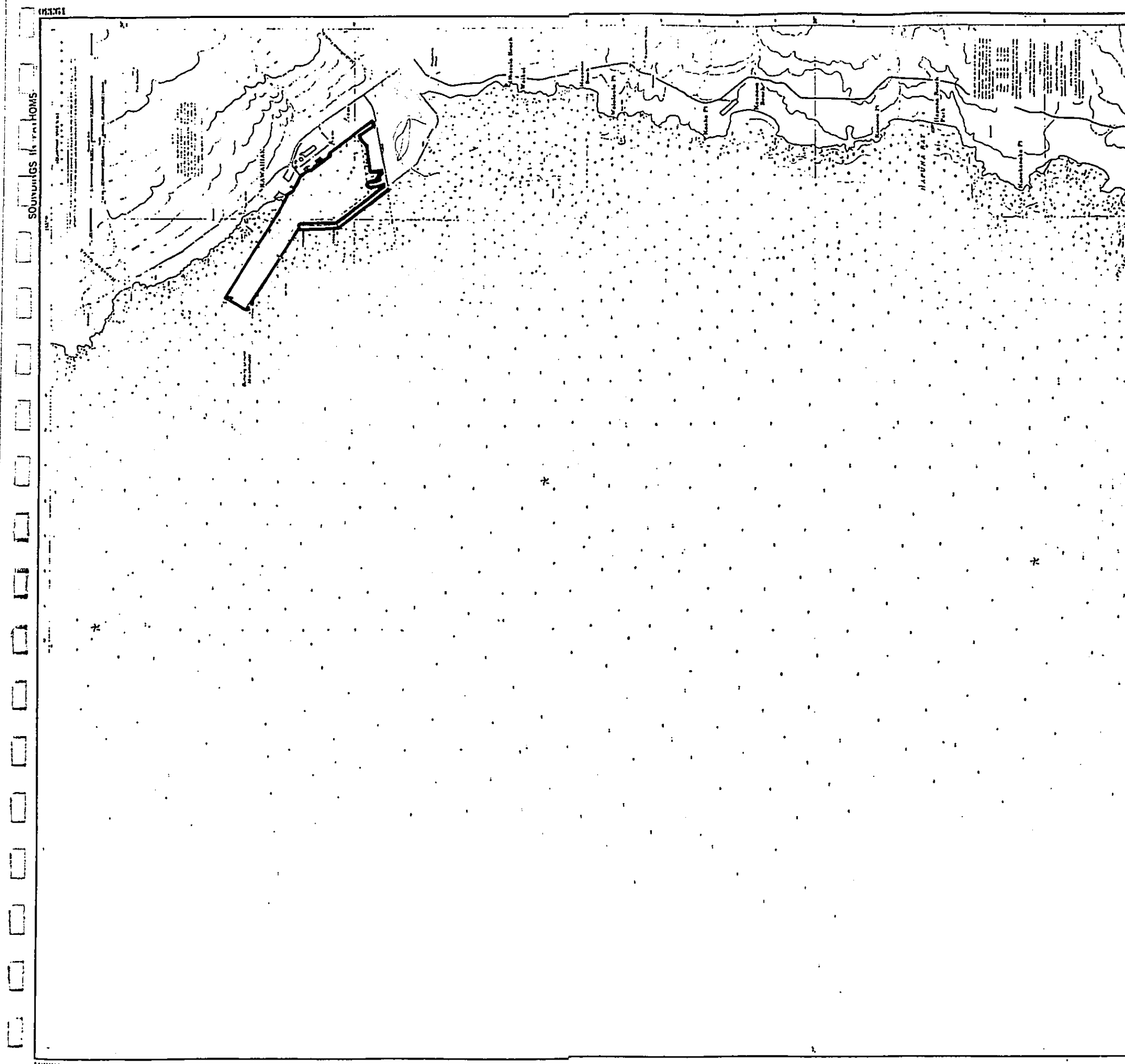
R. M. TOWILL CORPORATION
OCTOBER 1992



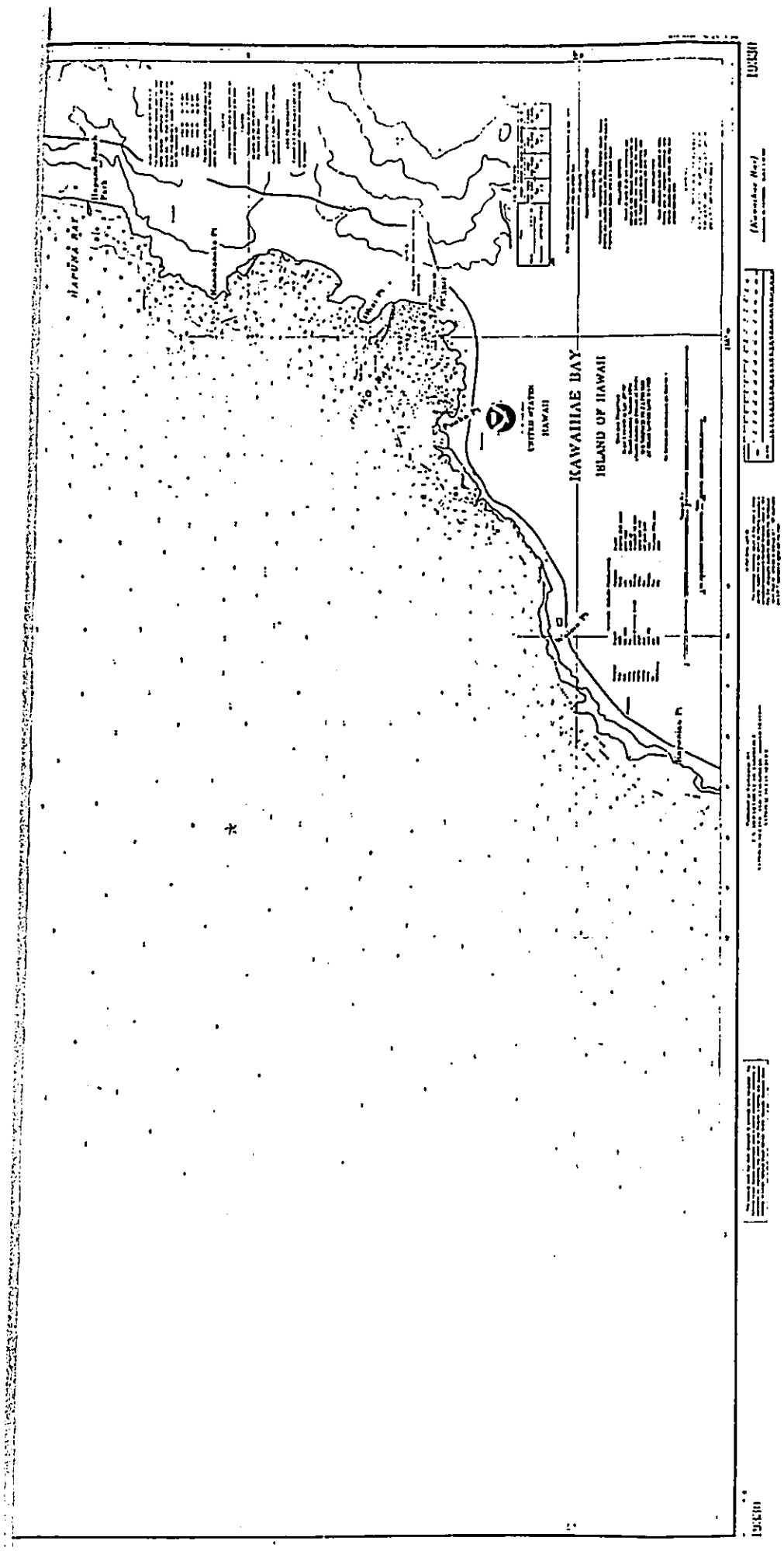


Figure 1-12
PROJECT BOUNDARY
KAWAIHAE HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

R. M. TOWILL CORPORATION
OCTOBER 1992

HAWAIIAN ISLANDS

LANAI

KAUMALAPAU HARBOR

Scale 2500

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

TIDES (referred to mean lower low water)	Kaumalapau Harbor
Mean higher high water	2.2 ft.
Mean Sea level	1.0 ft.
Lowest tide to be expected	-1.0 ft.

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see C. & G. S. Chart No. 1):

Lights: F. fixed, Fl. flashing, Qk. quick, I. Qk. interrupted quick, S-L. short-long, Occ. occulting, Alt. alternating, Gp. group, W. white, R. red, G. green, m. nautical miles, min. minutes, sec. seconds, ev. every, WHIS. whistle, DIA. diaphone; vis. visible; SEC. sector; OBSC. obscured; AERO. aeronautical light, D. destroyed, to be reestablished; Lights are white unless otherwise indicated.

Buoys: C. can, N. nun, S. spar, REF. reflector, T.B. temporary buoy. Day Beacons: △ white unless otherwise indicated.

C.G. Coast Guard Station; R. Tr. radio tower, D.F.S. distance finding station.

Cl. clay, Co. coral, G. gravel, Grs. grass, M. mud, Rk. rock, S. sand, Sh. shells, bk. black, br. brown, bu. blue, gn. green, gy. gray, rd. red, wh. white, yl. yellow, hrd. hard, rky. rocky, sft. soft, stk. sticky.

(23) Wreck, rock or obstruction swept clear to the depth indicated.

(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

P.D. position doubtful; E.D. existence doubtful; Obstr. obstruction.

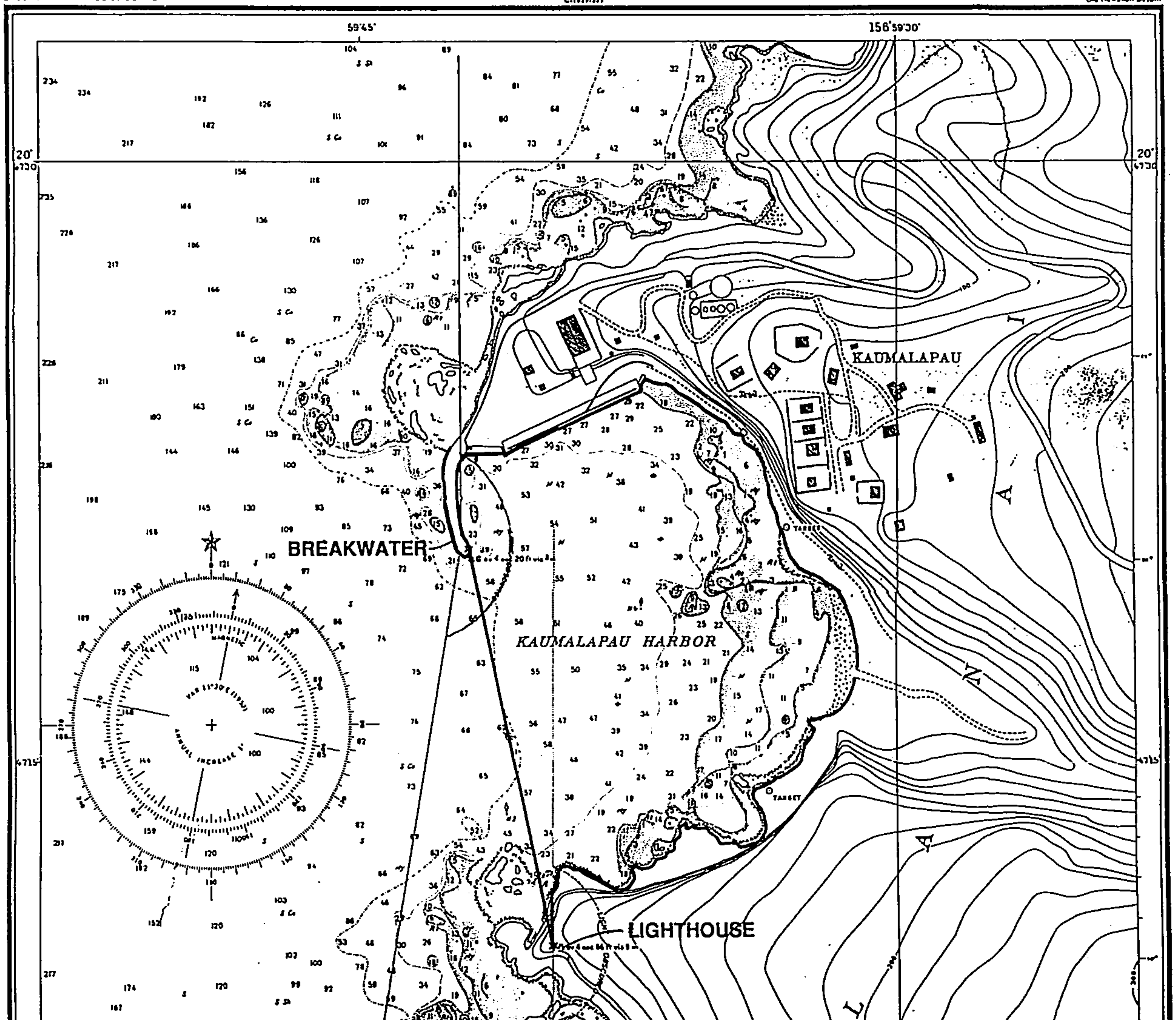
HEIGHTS in feet above mean high water.

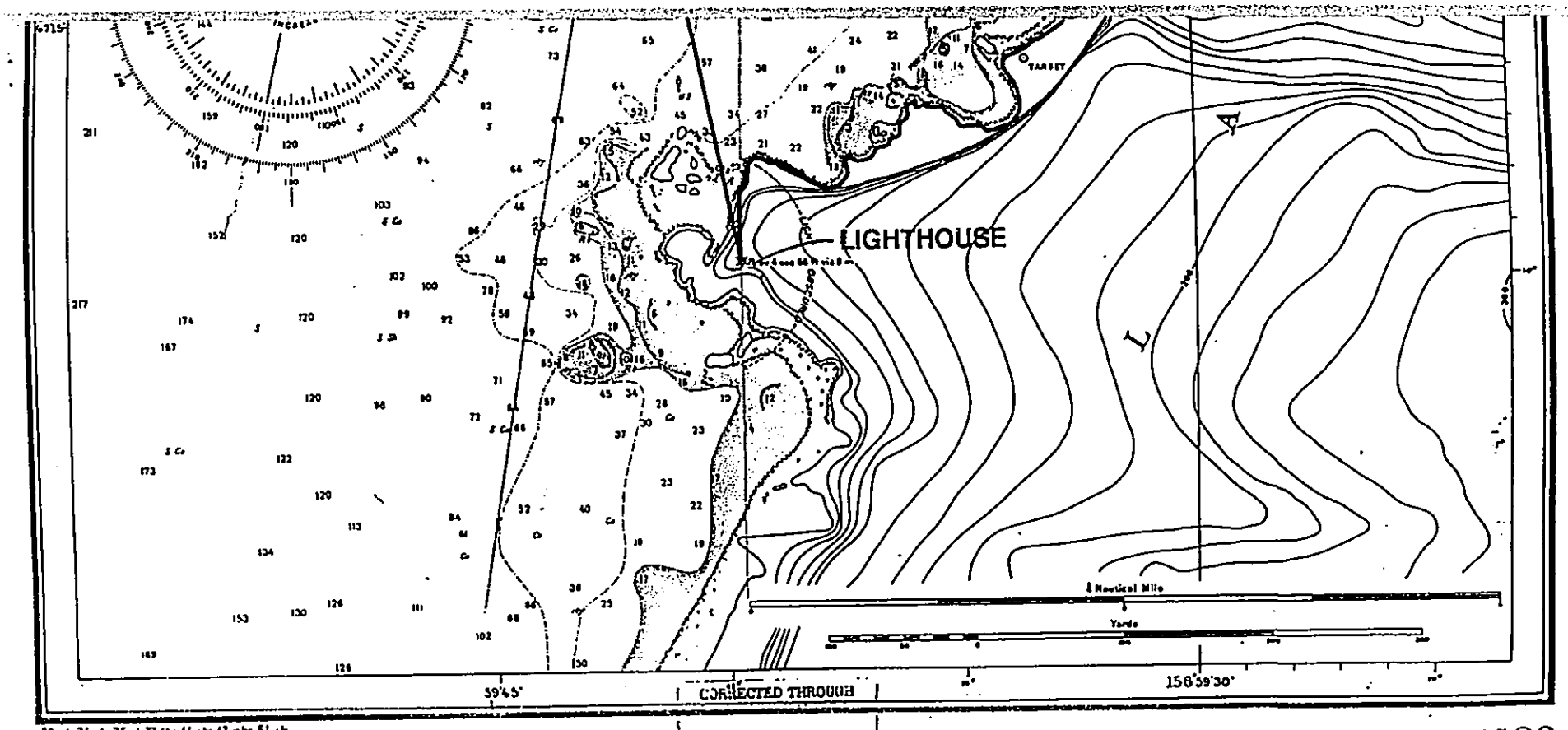
AUTHORITIES

Hydrography and topography by the Coast and Geodetic Survey with additions and revisions from other sources.

No. 4122 PRICE 25 CENTS

Old Hawaiian Datum





Published at Washington, D.C., Nov. 1929 (1st Edition)
(1st Edition 1929)
U. S. COAST AND GEODETIC SURVEY
R. F. A. Studds, Director

LIGHTS, BEACONS, BUOYS, AND DANGERS CORRECTED THROUGH
FOR INFORMATION RECEIVED TO THE FOLLOWING DATE 6 63

U.S.C.&G.S.
SAN FRANCISCO, CALIF.

(Kaumalapau Harbor) U.S.C.& G.S. 4122

Figure 1-13
PROJECT BOUNDARY
KAUMALAPAU HARBOR
Acquisition of Submerged Lands
for Commercial Harbors Statewide

0 300 600
FEET

R. M. TOWILL CORPORATION
OCTOBER 1992

CONSULTED PARTIES	RESPONDED	
	WITH COMMENTS	NO COMMENTS
County of Hawaii Planning Department		X
County of Hawaii Department of Public Works		X
County of Maui Planning Department	X	
County of Maui Department of Parks & Recreation		X
County of Maui Department of Public Works	X	
County of Kauai Planning Department		
County of Kauai Department of Public Works		
Edward Richardson Adjutant General Department of Defense		X
William Paty Chairperson Department of Hawaiian Home Lands	X	
Don J. Hibbard Administrator State Historic Preservation Division, DLNR		
John Lewin Director Department of Health		X
Thomas Arizumi Chief Environmental Management Division Department of Health		

CONSULTED PARTIES	RESPONDED	
	WITH COMMENTS	NO COMMENTS
Harold S. Masumoto Director Office of State Planning		
Clayton Hee Chairperson Office of State Planning		
Roger Fujioka Director Water Resources Research Center University of Hawaii		
John Harrison Coordinator Environmental Center University of Hawaii		
Mufi Hannemann Director Department of Business, Economic Development and Tourism	X	

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

ENV 92-297

December 9, 1992

Mr. Rex D. Johnson, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Johnson:

Subject: Pre-Assessment Consultation for State Commercial Harbors
Environmental Assessment - Job H. C. 9061

In response to your letter of December 2, 1992 regarding the acquisition of submerged land, we wish to inform you that we do not have comments to offer at this time.

Very truly yours,

C. Michael Street

C. MICHAEL STREET
Director and Chief Engineer

cc: R.M. Towill Corporation

Stephen K. Yamashiro
Mayor

Bruce C. McClure
Chief Engineer

Deputy Chief Engineer

Department of Public Works

County of Hawaii • 25 Aupuni Street, Room 202 • Hilo, Hawaii 96720 • (808) 961-8321 • Fax (808) 969-7138

December 15, 1992

MR REX D JOHNSON DIRECTOR
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU HI 96813-5097

SUBJECT: PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION
State Commercial Harbors

We have reviewed the Executive Summary and we feel that this application is a good idea. We have no comments to offer.

for ROBERT K. YAMABU, Division Chief
Engineering Division

DHM:byf

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

Central Pacific Plaza 220 South King Street 9th Floor Honolulu Hawaii
Mailing Address: P.O. Box 2359 Honolulu Hawaii 96804 Telephone: (808) 586-2466 Fax: (808) 586-2377

Ref. No. W-1325

December 16, 1992

MEMORANDUM

TO: The Honorable Rex D. Johnson
Department of Transportation

FROM: Mufi Hannemann

SUBJECT: State Commercial Harbors Environmental Assessment for an Executive Order and Conservation District Use Application Approval for Submerged Lands

Thank you for the opportunity to provide advance comments with respect to the Department of Transportation's (DOT) preparation of an Environmental Assessment for the acquisition of submerged lands at seven State commercial harbors.

The approval of an Executive Order (EO), transferring harbor submerged lands from the Department of Land and Natural Resources (DLNR) to DOT, and a Conservation District Use Application (CDUA) would greatly improve DOT's ability to meet their planning, construction, operational and maintenance responsibilities for State harbors as set forth in Chapter 266-2, Hawaii Revised Statutes (HRS). In this regard, specific Honolulu Waterfront Master Plan harbor and related project recommendations can be implemented in a more timely manner.

However, it is suggested that DOT examine the "advantages" and "disadvantages" of submitting a single CDUA for all seven State harbor facilities. It may be more beneficial for separate CDUAs to be approved for each facility in order to avoid

potential unanticipated problems related to one or more of the harbor facilities. In this instance, separate approvals may alleviate unnecessary delays for those facilities which are noncontroversial.

Again, thank you for the opportunity to comment. If you have any questions please call my Special Assistant, Daniel Orodenker, at 586-2531.

Mufi Hannemann

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL

BRIGADIER GENERAL (HI)
DEPUTY ADJUTANT GENERAL

December 16, 1992

Engineering Office

Mr. Rex D. Johnson
Director of Transportation
869 Punchbowl Street
Honolulu, hawaii 96813

Dear Mr. Johnson:

Subject: PRE-ASSESSMENT CONSULTATION FOR STATE COMMERCIAL HARBORS ENVIRONMENTAL ASSESSMENT - JOB H. C. 9061

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

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

Sincerely,

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

NATIONAL GUARD
Americans At Their Best

STATE OF HAWAII
DEPARTMENT OF HEALTH

December 16, 1992

92-449/epo

TO: The Honorable Rex f. Johnson, Director
Department of Transportation

FROM: John C. Lewin, M.D.
Director of Health

SUBJECT: Pre-Assessment Consultation for
State Commercial Harbors
Environmental Assessment - Job H. C. 9061

Thank you for allowing us to review and comment on the subject request. We have no comment to offer at this time.

As this is a very preliminary stage of discussion, we reserve the right to impose future restrictions on the project at the time final plans are submitted to this office for review.

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU HAWAII 96813

TH 12/92-3398

December 18, 1992

Honorable Rex D. Johnson, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Johnson:

Pre-Assessment Consultation for State Commercial Harbors Environmental Assessment - Job H. C. 9061

In response to your letter of December 2, 1992, we have reviewed the executive summary provided, but will defer our comments until the Draft Environmental Assessment is completed.

Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely,

FOR BENJAMIN B. LEE
Chief Planning Officer

BBL:lh

...at was faxed to the Director... ...Harbors Division. Sorry for the inconvenience of sending the memo in error to Harbors.

I thank your staff again for faxing the memoranda to Mr. Johnson.

Ann Yonamine
Planning Office

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

December 18, 1992

MEMORANDUM

TO: The Honorable Rex D. Johnson
Director of Transportation

FROM: Hoaliku L. Drake, Chairman
Hawaiian Homes Commission

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR STATE COMMERCIAL HARBORS ENVIRONMENTAL ASSESSMENT - JOB H.C. 9061

Thank you for the opportunity to review the Executive Summary for your draft Environmental Assessment (EA) for acquiring submerged lands within and leading into the seven listed commercial harbors.

We request that the final EA include maps depicting the boundaries of the areas to be acquired by the Department of Transportation (DOT), as well as the locations of proposed access and maintenance easements. A statement should be included to inform the public that ocean areas not acquired by the DOT will remain under the management jurisdiction of the Department of Land and Natural Resources.

We reserve further comments until after the EA is published. Please refer any questions regarding this response to Ben Henderson of our Planning Office at 586-3838.

HLD:BH:JC:asy/2665L.1

SENT BY:HARBORS DIV-ENNG BRCH ; 1-12-93 ; 7:44AM ; 8085233261→ 808 8421937:# 2

JOHN WAIHEE
Governor of Hawaii

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

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

In reply, please refer to:

December 16, 1992

92-449/epo

TO: The Honorable Rex F. Johnson, Director
Department of Transportation

FROM: John C. Lewin, M.D.
Director of Health

SUBJECT: Pre-Assessment Consultation for
State Commercial Harbors
Environmental Assessment - Job H. C. 9061

Thank you for allowing us to review and comment on the subject request. We have no comment to offer at this time.

As this is a very preliminary stage of discussion, we reserve the right to impose future restrictions on the project at the time final plans are submitted to this office for review.

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS

December 21, 1992

State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Attention: Rex D. Johnson
Director of Transportation

Dear Sir:

Subject: Pre-Assessment Consultation for State Commercial Harbors Environmental Assessment - Job H. C. 9061

We have reviewed your environmental assessment and have no comments to offer.

Very truly yours,

GEORGE N. KAYA
Director of Public Works

cc: LUCA
Maui County Planning Department

DEPARTMENT OF
PARKS AND RECREATION
COUNTY OF MAUI

LINDA CROCKETT LINGLE
Mayor
CHARMAINE TAVARES
Director
ARMAND PAHUA
Deputy Director

1580 KAAHUMANU AVENUE, WAILUKU, HAWAII 96793
(808) 243-7230

December 28, 1992

State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Gentlemen:

Subject: Pre-Assessment Consultant for State Commerical
Harbors Environmental Assessment - Job H.C. 9061

The Department of Parks and Recreation has reviewed the project documents and has no comments to offer on the proposed project.

Thank you for the opportunity to comment.

Sincerely,

For Charmaine Tavares, Director
Department of Parks & Recreation

DRAFT ENVIRONMENTAL ASSESSMENT

COMMENT LETTERS

JOHN WAIHEE
GOVERNOR OF HAWAII

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

BOARD OF LAND AND NATURAL RESOURCES
DEPUTIES
JOHN P. KEPPELER II
DONA L. HANAIKE
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

FILE NO.: 93-416
DOC. NO.: 2342

MAR 8 1993

MEMORANDUM

TO: The Honorable Rex D. Johnson, Director
Department of Transportation

FROM: John P. Keppeler, II, Acting Director
Department of Land and Natural Resources

SUBJECT: Draft Environmental Assessment (DEA) for the Acquisition of Submerged Lands at Seven State Commercial Harbors (JOB H.C. 9061)

We have reviewed the DEA information for the subject acquisitions transmitted by your memorandum dated February 1, 1993, and have the following comments:

Brief Description:

The Department of Transportation (DOT) proposes to acquire submerged lands in and around seven existing commercial state harbors at Kaumakakai, Nawiliwili, Port Allen, Honolulu, Hilo, Kawaihae, and Kaumalapau. The DOT will submit a Conservation District Use Application (CDUA) for all seven sites for harbor use, including an Executive Order permitting them to undertake functional operations (maintenance dredging, pier construction, etc.) without requiring separate CDUAs for each activity. Under this proposal, the DOT would henceforth, only be required to submit proposed construction plans to this Department for review as to their consistency with the purposes of the Executive Order.

Division of Aquatic Resources

The Division of Aquatic Resources (DAR) comments that they do not object to the proposed plan provided advanced notification of proposed improvements within these harbors can be received. Of the seven harbors mentioned, four are also regulated under Hawaii Administrative Rules for fishery management purposes. These rules frequently reference existing features that serve as boundary markers to separate different fishing activities. Therefore, should changes be made to features within a harbor that is regulated for fishing, DAR would like to be able to provide comments as appropriate for coordination purposes.

Division of Boating and Ocean Recreation

The Division of Boating and Ocean Recreation comments that they support the proposed acquisition and concur with the statements in the DEA, that there should be no impact on existing recreational boating activities.

Historic Preservation Division

The Historic Preservation Division comments that they have already responded directly to DOT on this DEA. It will have "no effect" on significant historic sites.

Division of Conservation and Resources Enforcement

The Division of Conservation and Resources Enforcement (DOCARE) comments that for DOT, the acquisition of management control over submerged land in these harbors would be beneficial. It should lessen the "...confusion and delays in determining permit requirements..." that have been attributed to the current jurisdictional overlap.

DOCARE indicates that while DOT seeks to speed the approval process, it should remain cognizant of DLNR's interest in the management of valuable natural resources in both the Conservation District and submerged lands.

We have no other comments to offer at this time. Thank you for the opportunity to comment on this matter.

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

DOT – Randal Leong. (9/29/93)
"No response necessary"

JOHN WAIHEE
GOVERNOR

HWY		WES	
DK		KIS	
RYK		SNK	
REC'D APR 2		RMTC	
RDE			
RF			
DSM			

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

REX D. JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMIYE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO

April 19, 1993 HAR-EP 9726.93

Mr. Jeffrey Lacy, Director
Planning Department
County of Kauai
4280 Rice Street
Lihue, Hawaii 96766

Dear Mr. Lacy:

Subject: Environmental Assessment for the Acquisition of Submerged Lands at Seven State Commercial Harbors Job H. C. 9061

Thank you for your letter dated January 21, 1993 concerning our environmental assessment.

We have the following comments in response to your letter:

1. Harbor-related repair, maintenance and construction projects within the designated submerged land areas would no longer require a CDUA. Since harbor-related projects on land are not within the conservation district, no CDUA is currently required.

2. Future harbor projects on fast and submerged lands will continue to be subject to agency and public review through applicable permit and environmental review processes such as the Army Corps Section 404 permit, Coastal Zone Management consistency review and requirements of Chapter 343, HRS. With the approval of the CDUA, all future projects within the submerged lands will be subject to review and approval of DLNR.

3. Since all future harbor projects will continue to be subject to the requirements of Chapter 343, HRS, our procedure regarding posting notification in the OEQC Bulletin will remain unchanged.

4. The Final Environmental Assessment will include the proposed boundaries of the submerged lands for the seven commercial harbors.

Sincerely,

Rex D. Johnson
Director of Transportation

c: Coastal Zone Management (Doug Tom)
R. M. Towill Corporation (Colette Sakoda)

JOANN A. YUKIMURA
MAYOR

JEFFREY LACY
PLANNING DIRECTOR

DEPUTY PLANNING DIRECTOR

TELEPHONE (808) 245-3918

HAR-EP 9446

COUNTY OF KAUAI
PLANNING DEPARTMENT
4280 RICE STREET
LIHUE, KAUAI, HAWAII 96766

January 21, 1993

Mr. Rex D. Johnson
Director of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

RE: Comments on Environmental Assessment for Acquisition of Submerged Lands at Seven State Commercial Harbors HAR-EP 9241.93 Job H.C. 9061

Dear Mr. Johnson,

Thank you for soliciting our advance comments on the above proposal.

If we correctly understand the proposal, the consequence of the transfer of submerged lands from the DLNR to the DOT would be to remove the requirement for a CDUA. While the CDUA process is often burdensome and time consuming, it does offer a procedural requirement and opportunity for agency and public review. While we support expediting permit processes, we also are concerned that appropriate review take place, especially action within the coastal areas. Evidence is mounting that dredging, breakwaters, and other such activities often affects adjacent submerged lands and surrounding conservation shoreline.

In order for us to make informed comment, it may be necessary to have an expanded Environmental Assessment, which follows the general requirements of that document, and which addresses, among other things, the following:

1. We are not clear what activities would no longer require a CDUA. Will it be only dredging to the degree that was previously identified and approved, or will other activities be exempt, such as breakwater repair, reconstruction, expansion? What about action taken on the land?

2. We are unclear as to the process the DOT would follow in order to provide agency and public review for agency action. In particular, how will action be exposed to Coastal Zone Management consistency review, County Planning Department review, and review by the DLNR?

3. What will be the DOT position in regard to posting notification in the OEQC bulletin?

4. It would be helpful to have the boundaries of the seven commercial harbors clearly delineated in the Environmental Assessment.

Thank you for the opportunity to comment.

Sincerely,

JEFFREY LACY
Planning Director

cc: Doug Tom, CZM Program
Planning Director, Maui
Planning Director, Hawaii
Director DLU, Oahu

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU HAWAII 96813-5097

REX D. JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO

REC'D APR 2 ... RMTC

April 19, 1993

HAR-EP 9725.93

Mr. Brian Miskae, Director
Planning Department
County of Maui
250 S. High Street
Wailuku, Hawaii 96793

Dear Mr. Miskae:

Subject: Environmental Assessment for the Acquisition of Submerged Lands at Seven State Commercial Harbors Job H. C. 9061

Thank you for your comments concerning our environmental assessment.

There are no specific construction projects and no onshore area impacts associated with the proposed submerged lands acquisition. In the future, proposed harbor improvement projects on fast and submerged lands will be subject to agency and public review through applicable permit and environmental review processes such as the Army Corps Section 404 permit and the requirements of Chapter 343, HRS.

Sincerely,

Rex D. Johnson
Director of Transportation

c: R. M. Towill Corporation (Colette Sakoda)

LINDA CROCKETT LINGLE
Mayor

COUNTY OF MAUI
PLANNING DEPARTMENT
250 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793

BRIAN W. MISKAE
Planning Director

7/s 11230

Rex T. Johnson
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Re: Pre-Assessment consultation for State Commercial Harbors Environmental Assessment - Job H.C. 9061

We thank you for the opportunity to comment before the preparation of the aforementioned EA.

As you are aware, our jurisdiction with regard to harbors is limited to the Special Management Area (SMA) and other areas mauka of the shoreline. Because of this, we cannot comment on activities that DOT conducts in the submerged lands affected by this project. We are interested, however, with the potentially significant secondary effects which expansion, improvements or other activities could have on the onshore areas. These effects could be related, but would not be limited to: possible growth inducement, increased use of roadways, deposition of dredging spoils, increased burden on wastewater facilities, fresh water supplies, nearby ecosystems and their resources, etc.

With this in mind, we suggest a policy of pre-project consultation with this department be established as one possible mitigation for potential impacts.

We request that the EA disclose the foreseeable projects for each of the affected harbors and include maps delineating the affected submerged lands and maintenance easements. Again we thank you for the opportunity to comment.

Very truly yours,

Brian Miskae
Planning Director

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Norman F. Olesen
Deputy Director

Planning Department

County of Hawaii • 25 Aupuni Street, Room 109 • Hilo, Hawaii 96720 • (808) 961-8288

February 16, 1993

RAT			
DK		KTS	
RYK			
REC'D FEB 2			
RDE			
GSY			
DKM			

Mr. Rex D. Johnson, Director
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Dear Mr. Johnson:

Draft Environmental Assessment
Acquisition of Submerged Land at Seven
State Commercial Harbors
Job H. C. 9061

We thank you for the opportunity to review the subject Draft Environmental Assessment (EA). We have no objections to the proposed acquisition of submerged land at the seven State commercial harbors.

However with regards to the Draft EA, Page 3 of said document states two purposes for the EA: 1) to comprehensively address a one time action for acquisition of submerged lands; and 2) to acquire access and maintenance easements for DOT at each harbor. The document further states "General locations of proposed access and maintenance easements will be included in the Final Environmental Assessment and CDUA package. "We consider the draft document to be inadequate as such information and location maps should have been included in the Draft EA. As a result, we cannot provide relevant comments addressing the second purpose of the EA.

Should you have any questions, please feel free to contact Alice Kawaha of this office.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

AK:mjh
8023D

cc: Mr. Randal Leong, DOT-Harbors Division
Ms. Colette Sakoda, R.M. Towill Corp.
Mr. Brian Choy, OEQC

REED JOHNSON
DIRECTOR

JOYCE T. HAMM
AL PANG
LEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

RAT		WES	
DK		KTS	
RYK		SAK	
REC'D MAR 23 1993		RMTC	
RDE			
GSY			
DKM			

March 17, 1993 HAR-EP 9607.93

Ms. Virginia Goldstein
Planning Director
Planning Department
County of Hawaii
25 Aupuni Street, Room 109
Hilo, Hawaii 96720

Dear Ms. Goldstein:

Subject: Draft Environmental Assessment Acquisition of Submerged Land at Seven State Commercial Harbors
Job H. C. 9061

Thank you for your comments concerning our Draft Environmental Assessment.

The access and maintenance easements that the Department of Transportation needs from other State Agencies are located in Honolulu Harbor. Therefore, this action does not affect Hilo or Kawaihae Harbors. Your concern will be addressed in our Final Environmental Assessment.

If you have any question, please call Leonard Bautista at 587-1945.

Sincerely,

Rex D. Johnson
Director of Transportation

c: R.M. Towill Corporation (Colette Sakoda)

JOHN WAIHEE
GOVERNOR
STATE OF HAWAII

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
FEB 18 2

HOALIKU L. DRAKE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

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

February 18, 1993

FEB 22 8 09 AM '93
HARBORS DIVISION

MEMORANDUM

TO: The Honorable Rex D. Johnson
Director of Transportation

FROM: Hoaliku L. Drake, Chairman
Hawaiian Homes Commission

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE ACQUISITION OF SUBMERGED LANDS AT SEVEN STATE COMMERCIAL HARBORS - JOB H.C. 9061

Thank you for the opportunity to review your draft assessment of harbor areas at Kaunakakai, Nawiliwili, Port Allen, Honolulu, Hilo, Kawaihae, and Kamalapau. We ask that the following comments and questions be addressed in the final impact statement:

1. The socio-economic impacts of transferring jurisdiction of the submerged lands from the Department of Land and Natural Resources (DLNR) to the Department of Transportation (DOT) should be more fully discussed. How will management of the areas change? Adjacent landowners and the local communities want to know if their access into and activities within the areas will be further restricted as a result of the transfer from DLNR to DOT.

2. Recreational boating, fishing, limu gathering and other activities on-going in many of the subject areas should be allowed to continue unless health and safety concerns dictate otherwise. If existing uses cannot be "grandfathered," then compensation may need to be made for any rights that are to be extinguished. The possible existence of Konohiki rights in the areas should be investigated and addressed.

The Honorable Rex. D. Johnson
Page 2
February 18, 1993

3. Article XII, Section 7 of the State Constitution, guarantees to native Hawaiians freedom to continue traditional and customary activities for subsistence, cultural, and religious purposes.

4. Submerged lands within one league (approximately three miles) of the shoreline are part of the state Public Land Trust. The Office of Hawaiian Affairs (OHA) is entitled to a pro rata portion of the public lands and any income from the sale, lease, or other disposition of such lands. How will OHA's entitlement be affected by the proposed transfers of these particular submerged public lands?

Should you wish to discuss our comments and questions, please call Ben Henderson of our Planning Office at 586-3838.

HLD:BH:jc/2665L.2

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

REX D. JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO

AMT		WES	
DK		KTS	
RYK		[illegible]	

REC'D APR 6 1993 AMT

RDE			
GSY			
DKH			

April 2, 1993 HAR-PM 8457.93

To: Hoaliku L. Drake, Chairman
Hawaiian Homes Commission

From: Rex D. Johnson
Director of Transportation

Subject: DRAFT ENVIRONMENTAL ASSESSMENT FOR ACQUISITION OF SUBMERGED LANDS FOR COMMERCIAL HARBOR PURPOSES, JOB NO. H.C. 9061

Thank you for your comments of February 18, 1993 on the subject draft environmental assessment. Your concerns are addressed as follows:

1. We anticipate no negative socio-economic impacts with the jurisdictional transfer of submerged lands from the Department of Land and Natural Resources (DLNR) to the Department of Transportation (DOT). The transfer, we believe, is consistent with Chapter 266, Hawaii Revised Statutes relating to harbors, and practical in that such areas have been managed by DOT since, at least, the time of territorial government. Although maritime operations will have priority with the commercial harbors, we foresee no curtailment of access or the current activities of adjacent landowners and the local community unless their safety and welfare are jeopardized.

2. The existing activities you mentioned will be allowed to continue as "grandfathered" uses unless dictated by safety and health concerns. Compensation for extinguished rights will be evaluated as instances occur. Input from other agencies and special interest groups are expected to ascertain the locations for such recreational, religious, cultural and subsistence practices, including Konohiki rights.

3. The Department of Transportation, as any agency of the State of Hawaii, is required to uphold the Constitution of the State of Hawaii and of the United States.

4. OHA's entitlement to revenue generated by activities within the submerged lands currently managed by DLNR shall be in accordance with the agreement reached between the State and OHA.

We appreciate your time and interest and look forward to more contributions in this regard from the Commission and Department of Hawaiian Home Lands.

c: OEQC
RM Towill Corp. (C. Sakoda)

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

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REC'D APR 6 1993

REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA
IN REPLY REFER TO

RDE		
GSY		
DKM		

April 2, 1993 HAR-PM 8457.93

To. Hoaliku L. Drake, Chairman
Hawaiian Homes Commission

From: Rex D. Johnson
Director of Transportation

Subject: DRAFT ENVIRONMENTAL ASSESSMENT FOR ACQUISITION OF SUBMERGED LANDS FOR COMMERCIAL HARBOR PURPOSES, JOB NO. H.C. 9061

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SECTION 7
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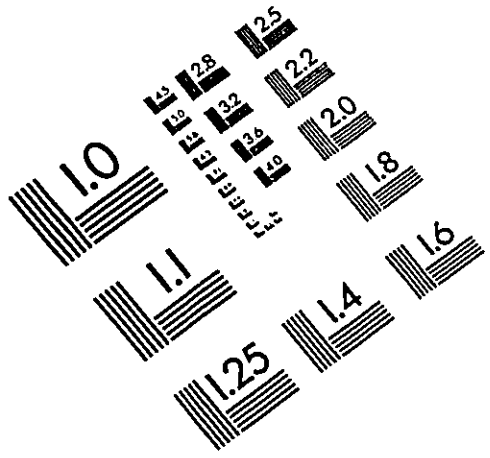
CERTIFICATION

I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.

2004
DATE

Julie Kaai
SIGNATURE OF OPERATOR



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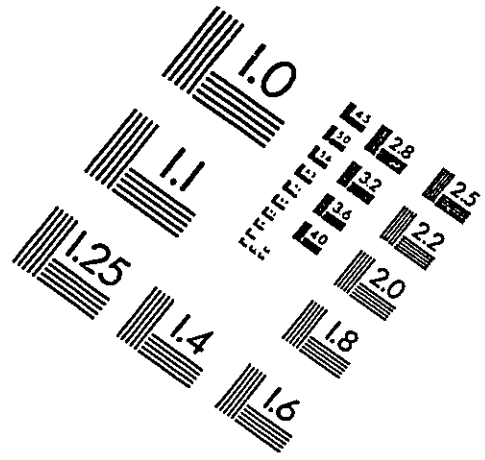

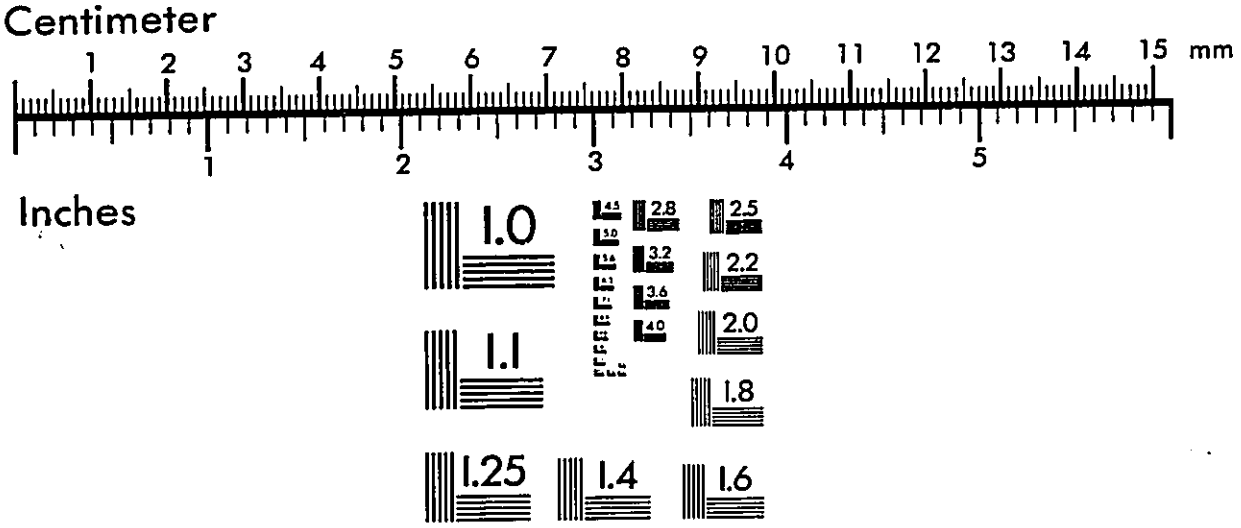

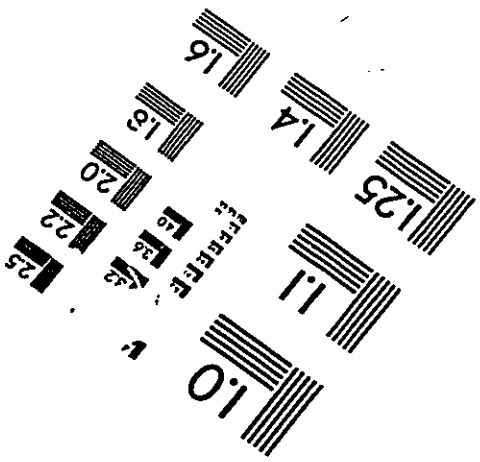

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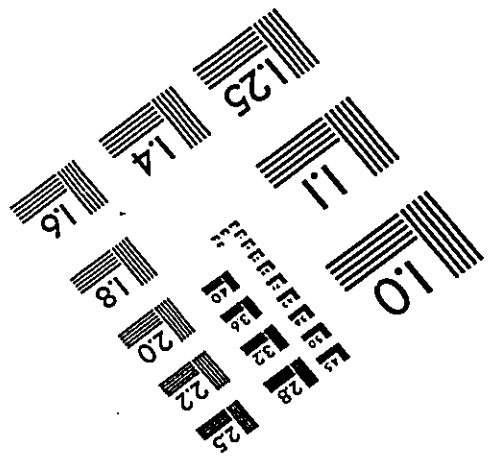

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