JOHN WAIHEE
GOVERNOR

EDWARD Y. HIRATA
DIRECTOR

DEPUTY DIRECTORS
RONALD N. HIRANO
DAN T. KOCHI
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO:

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

April 12, 1990

HAR-EP 4875

To: Dr. Marvin T. Miura, Director
Office of Environmental Quality Control

From: Edward Y. Hirata, Director
Department of Transportation

Subject: NEGATIVE DECLARATION - CONTAINER YARD IMPROVEMENTS AT HONOLULU HARBOR

In accordance with Chapter 343-5(c), Hawaii Revised Statutes, we are notifying you that we will not require an Environmental Impact Statement for the subject project. We have enclosed (4) copies of the Negative Declaration on the proposal and a completed OEQC Form for publication in the OEQC Bulletin.

Should you have any question on the action, please contact Howard Miura of our Harbors Division at 548-2559.

Enc. (5)

OFC. OF ENVIRONMENTAL
QUALITY CONTROL

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1990-04-23-OA-FEA

MATSON CONTAINER YARD IMPROVEMENTS

ENVIRONMENTAL ASSESSMENT AND NEGATIVE DECLARATION

Prepared for:

MATSON TERMINALS INC.

Prepared by:

WILSON OKAMOTO & ASSOCIATES, INC.

APRIL 1990

ENVIRONMENTAL ASSESSMENT AND NEGATIVE DECLARATION FOR MATSON CONTAINER YARD IMPROVEMENTS

Prepared for
Matson Terminals, Inc.

Prepared by
Wilson Okamoto and Associates, Inc.

April 1990

ENVIRONMENTAL ASSESSMENT
AND NEGATIVE DECLARATION
FOR MATSON CONTAINER YARD IMPROVEMENTS
PIERS 51, 52 AND 53
AT HONOLULU HARBOR

APRIL 1990

APPLICANT:

Matson Terminals, Inc.

APPROVING AGENCY:

State of Hawaii Department of Transportation, Harbors Division

CONSULTED PARTIES:

U.S. Department of Transportation, Federal Aviation Administration

State of Hawaii Department of Transportation, Airports Division

State of Hawaii Department of Transportation, Harbors Division

City and County of Honolulu, Department of Land Utilization

PROJECT DESCRIPTION:

Location:

The container yard utilized by Matson is located along Piers 51, 52 and 53 on the northwestern portion of Sand Island. See Figure 1. It is accessible by Sand Island Access Road which intersects with Nimitz Highway. The project site will encompass 108 acres.

Objective:

The proposed improvements are intended to upgrade the container yard along Piers 51, 52 and 53 to better serve the public. The container handling facilities are an integral part of the shipping industry in Hawaii. Since approximately 80% of all products (energy, food, and goods) must be shipped from the mainland United States or other overseas areas, improvements to these facilities represent an essential upgrade. Central to the improvements is a new cargo container system which will accommodate larger container ships, an increasing proportion of larger containers, and a larger loading/unloading crane system. The new cargo container system is the standard which worldwide modernization of container shipping is moving towards.

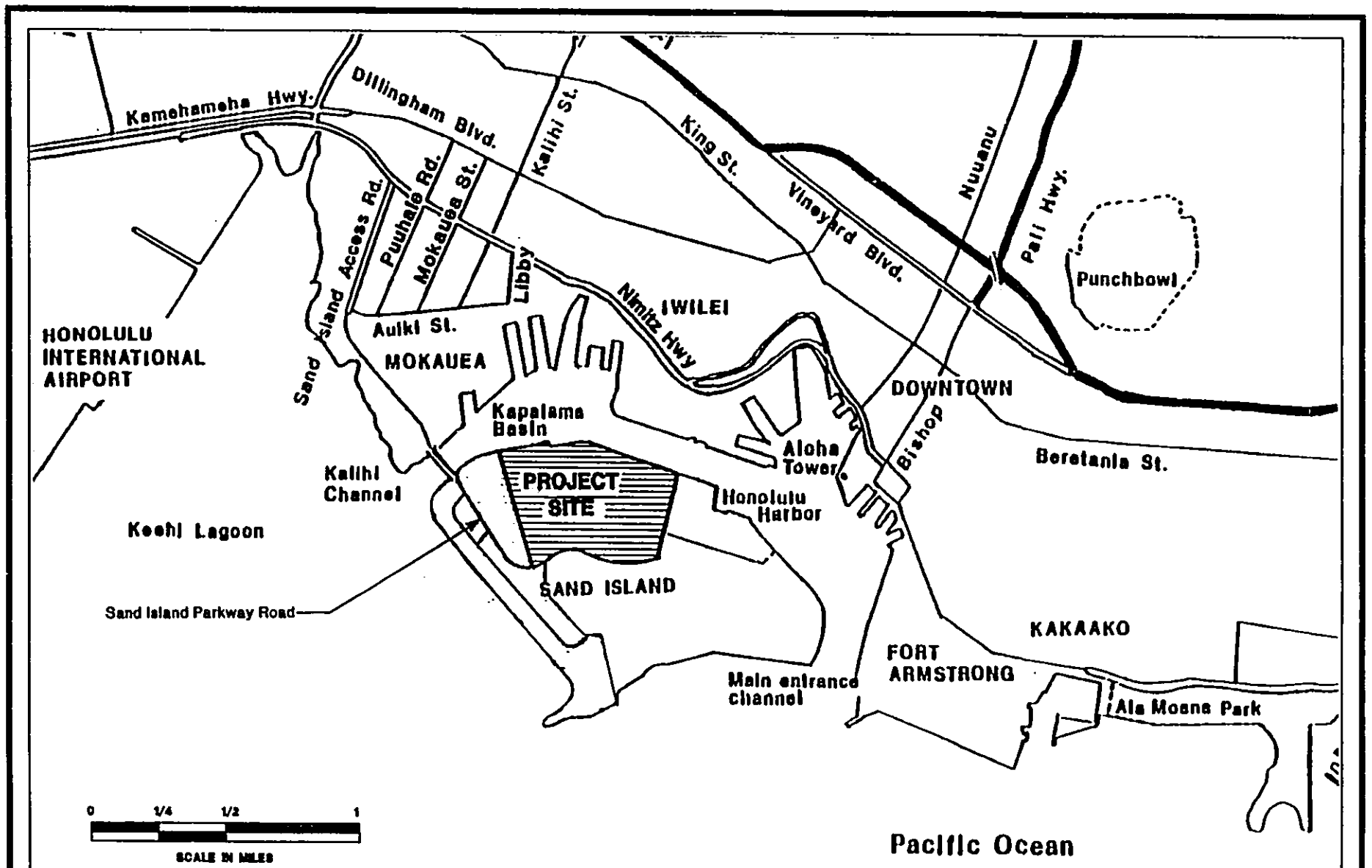
Other improvements will include changing the layout of the container storage yard to accommodate the new cargo system, particularly the new crane and the increasing proportion of larger cargo containers. Finally, some improvements are proposed to generally upgrade the container yard, including office expansion, a new tower for directing cargo handling, and modernization of the automobile shipment area.

Technical Characteristics:

The two figures on the following pages clarify the improvements being proposed. Figure 2 displays the existing facilities and proposed improvements at the container yard at Piers 51, 52 and 53. Figure 3 is a cross-sectional drawing which renders an overall perspective of these improvements.

1. New Crane Rail

   Matson is planning to construct a single new crane rail on the inland side of Sand Island, parallel to the alignment of the existing crane rails. This new rail is needed to accommodate the replacement of 3 of the 5 existing 32 foot gage cranes with 3 larger 100 foot gage cranes. The new 100 foot gage cranes will have an operating height of 210 feet, an extended storage position height of 300 feet, and an approximate length of 367 feet. A new electrical power connection to the existing bus bar will be provided to service the new crane. A new 3750



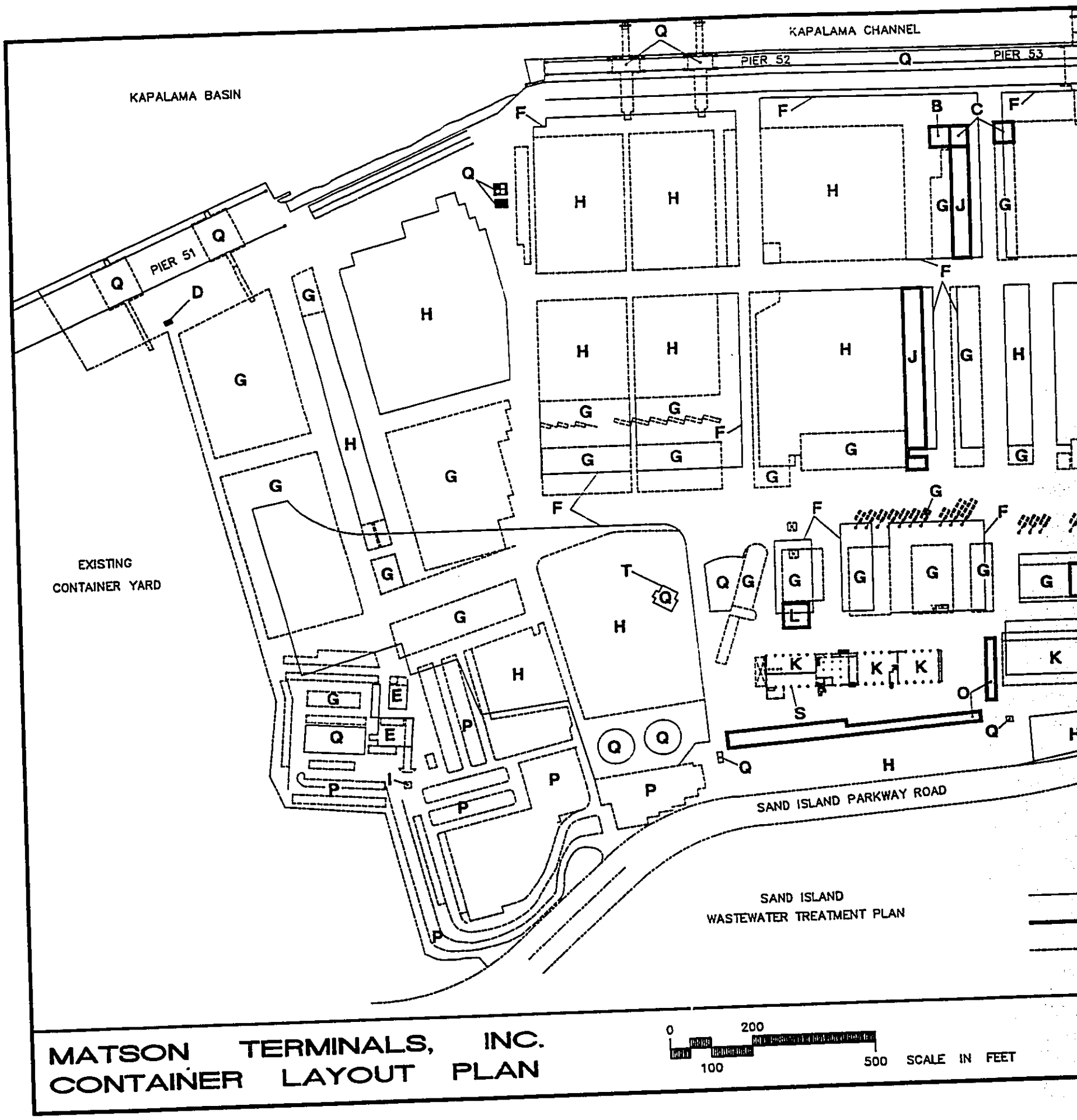
MATSON CONTAINER YARD IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT

LOCATION MAP

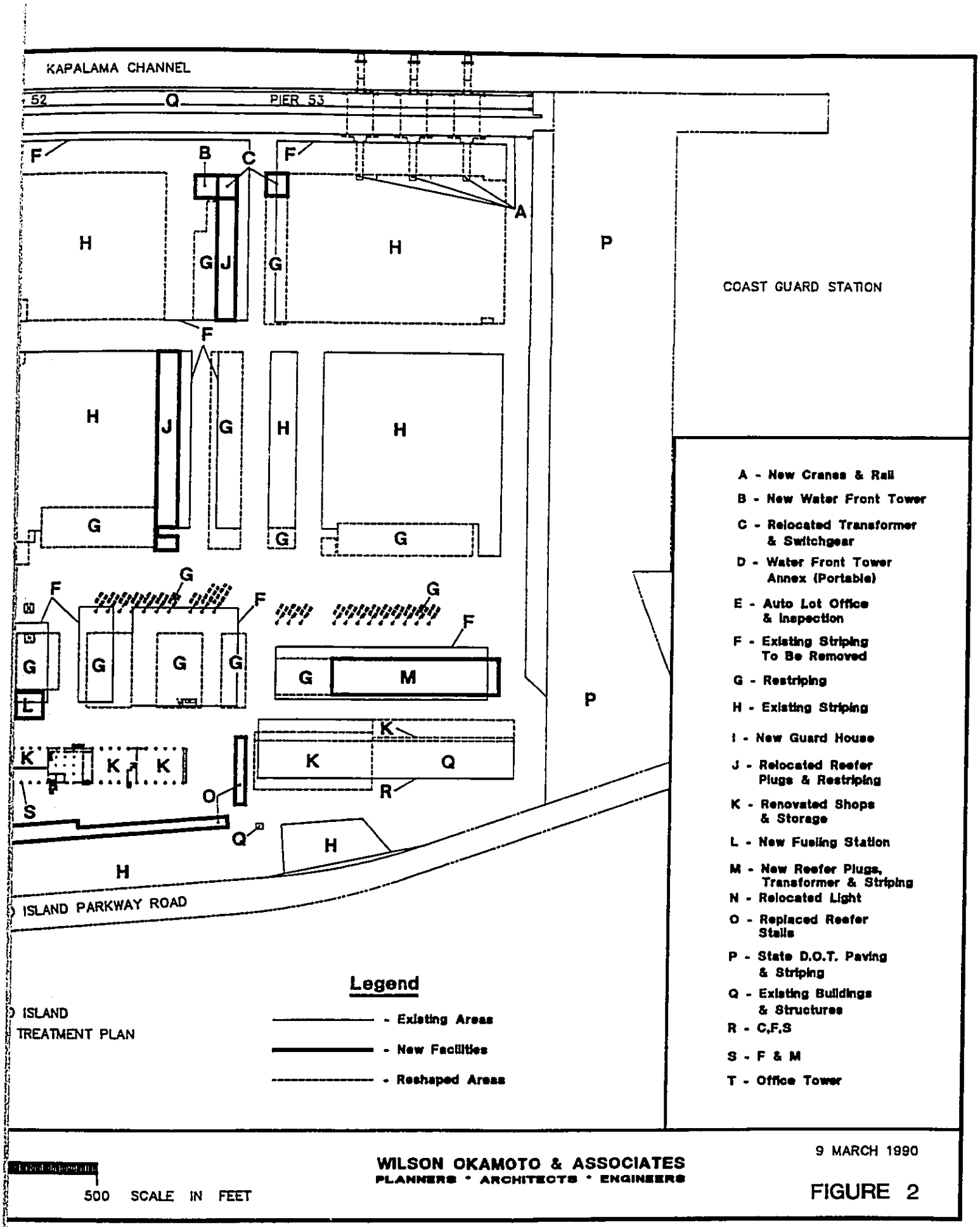
Prepared for:
MATSON TERMINAL INC.

Prepared by :
WILSON OKAMOTO & ASSOCIATES, INC.

FIGURE 1



MATSON TERMINALS, INC.
CONTAINER LAYOUT PLAN



WILSON OKAMOTO & ASSOCIATES
PLANNERS * ARCHITECTS * ENGINEERS

9 MARCH 1990

FIGURE 2

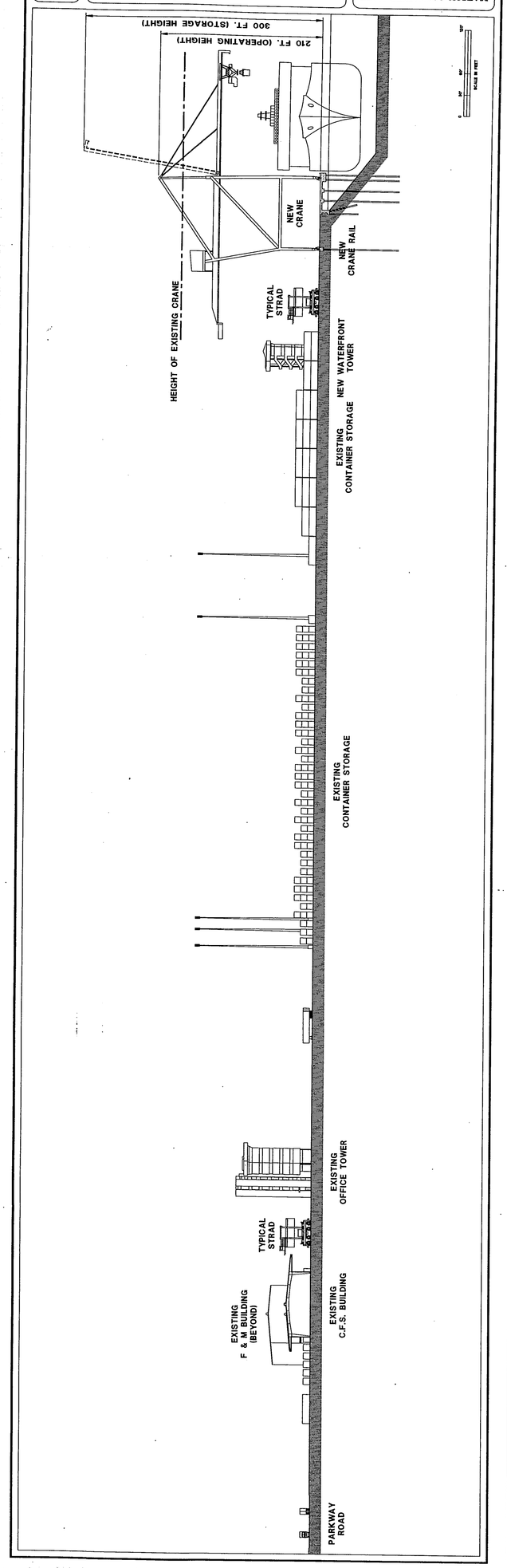
MATSON CONTAINER YARD
IMPROVEMENTS
ENVIRONMENTAL ASSESSMENT

CROSS-SECTION OF MATSON
CONTAINER YARD FACILITIES

Prepared for:
MATSON TERMINAL, INC.

Prepared by:
WILSON OKAMOTO
& ASSOCIATES, INC.

FIGURE
3



KVA crane transformer will replace the existing 2500 KVA crane transformer. The current underground 12 KV feeder from the existing Facilities and Maintenance (F&M) area switchgear will be relocated to serve the new transformer.

2. Container Yard Layout

Other on-site improvements will be needed to accommodate the new cranes. The existing paint striping for 24 foot long container stalls in various areas of the yard will be repainted to accommodate 40 foot long container stalls. The existing reefer plugs and pedestals within the new 115 foot crane rail clearance area will be removed and relocated for the necessary traffic aisle behind the new cranes. Two rows of reefer plugs will also be relocated to accommodate the length of 40 foot long containers. Likewise, switchgear at the waterfront end of the yard will be relocated as required to clear the new traffic aisle space.

A new 1000 KVA pad mounted transformer and switchgear will be installed adjacent to the existing lightpole base. Either the existing underground electrical ductline from F&M switchgear or the existing underground HECO feeder will need to be extended to this new transformer and switchgear at the Container Freight Station (CFS) reefer outlets. The area makai of the waterfront tower will be restriped to accommodate relocated straddler vehicle parking stalls. A new straddler fueling facility will be constructed at the mauka end of the F&M facilities where the existing straddler parking stalls are marked out. The fueling facility will be served by two new 10,000 gallon underground diesel storage tanks. Construction of the fueling facility will meet current EPA standards.

A new waterfront tower annex will be constructed with a new 8'x 8' covered observation platform. The approximate floor and roof elevations of the platform are 4' and 14' respectively.

3. Office Building Additions

To provide a new inspection facility, a new office building addition will be constructed for the existing auto lot function. In addition, a new open parking lot, new guardhouse, and relocated entry to the auto lot facility will also be built. The existing cesspool will be removed and will be replaced by a new sewerline connected to the City and County of Honolulu sewer system.

The existing F&M building will be renovated to accommodate new F&M requirements (repair and maintenance of the new and larger straddlers). Part of the existing CFS Building will be modified as required to accommodate new maintenance and storage requirements and to accommodate the interfacing

operation of the taller straddler vehicles. Part of the interior on the ewa-side of the CFS Building will be renovated to house repair and maintenance of containers and crane beams. The balance of the interior on the ewa-side of the building will be used to store parts and equipment, and to provide office, locker, shower and toilet space.

A new Waterfront Tower will need to be constructed at the mauka-ewa corner of the reefer stalls (approximately at the center of piers 52-53). The approximate building height will be 70 feet. The interior of the existing office tower will be renovated due to relocation of functions into the new Waterfront Tower.

4. Miscellaneous

Minor electrical and maintenance improvements will be made throughout the project site necessary for current and future operational requirements. These improvements will not have any impacts to the environment.

PROJECT SETTING

Physical Environment:

1. Surrounding Land Uses

Sand Island is a man-made island centrally located within the Honolulu Harbor complex on the southeast coast of Oahu. Sand Island shelters the harbor from the open sea and is connected to the Kapalama peninsula by a bridge at the island's western end. Matson's handling facilities occupy the island's northwestern portion. Located opposite Sand Island are port facilities at Fort Armstrong, the downtown waterfront area, Iwilei, Waiakamilo, and Mokauea. The harbor is fringed by an industrial belt extending from the Fort Armstrong Peninsula to the Kapalama Peninsula. Honolulu Harbor has one entrance channel. The Fort Armstrong entrance channel, lies to the east of Sand Island and extends to the main harbor basin. The Kalihi Channel lies to the west of Sand Island and extends to the Kapalama Basin. It is used as an auxiliary accessway to the Harbor for small boats since the bascule bridge has been in a fixed position for years. Land uses surrounding the project area include the U.S. Coast Guard station, light industrial activities such as auto wrecking and storage yards, the sewage treatment plant, and Sand Island State Park.

2. Geology/Soils

The Honolulu Harbor complex is located within the narrow coastal plain of Oahu's south central coast, geologically referred to as the Honolulu Plain.[1] This plain and much of the rest of Oahu's southern edge is underlain by a broad elevated coral reef, covered by alluvium carried down from the mountains. Prior to dredging and filling of Honolulu Harbor, the Sand Island area originally consisted of marginal lands; mainly submerged coral reefs, mudflats, and islands of varying sizes, shapes, and elevations. In 1926, Honolulu Harbor acquired its present day dual entrance and crescent shape configuration when the two channels were dredged by private interests. Sand Island was created by the incremental deposit of dredged material from Honolulu Harbor and Keehi Lagoon onto a shallow reef. The project site is relatively flat.

The surface and substrata soils of the project area consist mainly of fill material from past dredging operations. This material is characterized by silty sand and coral gravel which has a high porosity and permeability.[2] The Land type is classified as fill land, mixed (FL) and is used for urban development including airports, housing areas, and industrial facilities.[3] There is also a five acre portion within the project area that is classified as Jaucus sand (JaC).[4] Water erosion hazard is slight, but wind erosion is a severe hazard where vegetation has been removed. Approximately 93 acres of the 108 acre site is paved while the remainder is exposed coral fill.

3. Climate

The climate of Sand Island is typical of the leeward coastal lowlands of Oahu. The area is characterized by abundant sunshine, persistent tradewinds, relatively constant temperatures, moderate humidity, and infrequent severe storms.

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[1]MacDonald, Gordon A. & Abott, Agatin T.; Volcanoes in the sea; University of Hawaii Press; Honolulu, Hawaii; 1970; p.353.

[2]Aotani and Oka Architects, Inc.; Final Environmental Impact Statement for Sand Island State Park; Division of State Parks, Outdoor Recreation and Historic Sites; Honolulu, Hawaii; January 1975.

[3]Soil Conservation Service, U.S. Department of Agriculture, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, in cooperation with the University of Hawaii Agricultural Experiment Stations; Washington, D.C.; August 1972.

[4]Ibid.

Rainfall averages 20 to 25 inches a year, about 50% of which occurs from December through February, the three wettest months.

4. Hydrology

a. Groundwater

The hydrologic character of Sand Island and the surrounding Mamala Bay region was greatly influenced by the submergence and emergence of coastal areas on Oahu. The interface between upper sedimentary layers and the underlying basalt constitutes a zone of low permeability known as caprock. This caprock extends along the coastline about 800 to 900 feet below sea level, decreasing in thickness inland. In areas of relatively high permeability through which water percolates, this impervious zone of caprock prevents the downward flow of non-potable brackish water from reaching the basalt aquifers which contain Oahu's water supply. Conversely, the caprock also prevents the seaward movement of potable water out of the basaltic aquifers.

The great width and thickness of the caprock suggests that the basaltic potable water supply will be relatively unaffected by modifications along the coastline. This concept is supported by the fact that the filling of most of Honolulu's salt marshes and lowlands over the past 50 years with dredged marine deposits of high saline content has produced no deteriorations in the quality of the basal water recovered by the Board of Water Supply's wells.

b. Surface Water

Sand Island has a dry climate, flat terrain, and highly porous soils. Surface runoff conditions are not a serious problem. Even during heavy rains, no undue ponding occurs in the low areas. While there are no natural surface water features on Sand Island, two nearby streams discharge into Honolulu Harbor. The Kapalama Stream discharges into Kapalama Basin, and the Nuuanu Stream discharges into the main harbor basin.

There are no surface waters on the project site. Storm runoff flows into the site drainage system which deposits it into Honolulu Harbor.

5. Coastal

a. Tides

A general west current exists along the coast between Honolulu Harbor and Barbers Point. Except during strong kona winds, anchorages for deep draft vessels exist outside the harbor in Mamala Bay off Sand Island and west of the Fort Armstrong Channel.

The mean tidal range between mean lower low and mean higher high water is 1.9 feet. The usual extreme range is 2.3 feet. The lowest tide on record has been minus 1.15 feet, and the highest plus 3.1 feet.

b. Currents

Currents and circulation in Honolulu Harbor are influenced by wind, freshwater influx, tidal direction, and shoreline configuration. Tidal currents are generally weak and have no dominant direction.

Although circulation within the harbor has not been studied in detail, available information indicates that the double entry configuration of the harbor promotes circulation. Thermal studies conducted by the Hawaiian Electric Company estimated the harbor flushing time at about six hours.

c. Federal FIRM Zone and LUO Flood Hazard District

According to the Flood Insurance Rate Map (Community Panel Number 150001 0115 B revised September 4, 1987), a portion of the proposed project site is designated as Zone X, areas determined to be outside 500-year flood plain, and a portion Zone A, no base flood elevation determined.

6. Flora and Fauna

Vegetation in the Sand Island area is influenced by low rainfall, saline soil, the man-made origin of the area, and the high degree of development and human activity. Consequently, only a limited variety of plant life can be found; plants characterized as drought resistant, highly salt tolerant, and hardy in dry areas. No Federal or State listed or candidate threatened or endangered plant species are currently found on any areas of Sand Island.

The inland portions of Sand Island are dominated by haole koa shrubs (Leucocephala leucaena) and kiawe trees (Prosopis pallida). The seaward areas

have large sections of dry, brown desmanthus (Desmanthus virgatas) which grow several feet tall. Patches of sourbrush (Pluchea odorata) and Indian pluchea (Pluchea indica), opiuma (Pithecellobium dulce) and ironwood trees (Casuarina equisetifolia) are scattered throughout the area. Three species of grass exist; manila grass (Zoysia Metralla), star grass (Chloris divarcata), and swollen finger grass (Chloris inflata).

The project site is largely paved and exposed coral fill. No significant stands of vegetation are present.

Wildlife on Sand Island is limited to mammals and birds which have adapted to the urban environment. Mongooses, rats, mice, feral dogs and cats are common. Most of the existing wildlife can be found in the under utilized and more heavily vegetated areas of the island. A variety of migratory shore birds frequent Sand Island, especially the seaward shore areas. No Federal or State listed or candidate threatened or endangered bird species are known to inhabit Sand Island.

Due to extensive paved areas and exposed coral fill at the project site, habitats for wildlife are scarce.

7. Archaeological and Historic Sites

Most of Sand Island is composed of dredging material from past improvements to Honolulu Harbor in the early 1900's and the seaplane runway in the early 1940's. Because Sand Island is manmade, it is highly unlikely that there are areas of archaeological significance. There are no known archaeological sites on the container yard site. However, human burials have been discovered in the Keehi Lagoon area in the past.

There are no buildings, structures or other man made features of historical significance on the container yard site.

8. Recreation

Many recreational opportunities are available along the south shore area of Sand Island. Most recreation occurs at Sand Island Park, a developed park occupying 87 acres of land owned and managed by the State Department of Land and Natural Resources, Division of State Parks, Outdoor Recreation and Historic Sites. The nearshore waters around Sand Island offer recreational activities such as sailing and boating, water skiing, surfing, sunbathing, fishing, limu (seaweed) gathering, snorkeling and swimming.

Sand Island supports a large recreational fishery, consisting mainly of pole fishing and occasional spearfishing. Honolulu Harbor is used as a bait fishery (nehu) for the Skipjack tuna fleet.

There are no recreational resources in the harbor fronting the container yard as this is a staging area for ship loading and unloading.

Socio-Economic Environment:

1. Population

Since approximately 80% of all products (energy, food, and goods) must be shipped from the mainland United States or other overseas areas, state residents depend on Honolulu Harbor's container handling facilities. Hawaii's agricultural economy also depends on these facilities for the exportation of its local products (pineapple, sugar, etc.). The estimated defacto population of the State of Hawaii steadily increased from 796,500 in 1970 to 1,201,000 in 1987. It is projected that the defacto population will increase to 1,674,200 in 2010.

Immigration was the major factor in Hawaii's rapid population growth between 1970 and 1980, when 101,000 people moved to Hawaii. The resident population of Oahu in 1980 was 763,000, of which 365,000 lived in urban Honolulu. Sand Island and much of the Honolulu Harbor are included in the Kalihi-Palama District (Neighborhood Statistics Program Areas), which had an estimated resident population of 39,859 in July 1985.

Neighborhoods surrounding Sand Island are Downtown, Liliha-Kapalama, Kalihi-Palama and Kalihi Valley. Population information for these surrounding neighborhoods can be found in Table 1. According to the State of Hawaii Data Book, the Downtown neighborhood experienced a 13.1 percent increase in population between 1980 and 1985; Liliha-Kapalama experienced a 9.8 percent increase in the same period and Kalihi Valley experienced a 0.5 percent increase. The Kalihi-Palama neighborhood experienced a 0.7 percent decrease in population between 1980 and 1985. The overall population increase between 1980 and 1985 was about 3.4% in these neighborhoods.

Sand Island comprises Census Tract 57.99, a subclassification of Census Tract 57, which includes parts of Kalihi Kai. According to the Census of Population and Housing, 1980, the total population of Sand Island is 592, including 540 military personnel in group quarters. Most of the population on Sand Island are permanently stationed, enlisted personnel who make up the U.S. Department of Transportation Coast Guard. Matson presently employs a total of 386 personnel at their facility.

Table 1

POPULATION BY NEIGHBORHOOD BOARD AREAS

Neighborhood Area	Census Tracts	1985 Population Estimates
Downtown 13	40, 41, 42, 51	9,813
Liliha-Kapalama 14	46, 47, 49, 50, 60	23,126
Kalihi-Palama 15	51, 53, 56, 58, 60, 61, 62	39,859
Kalihi Valley 16	63, 64, 65	17,696
	TOTAL	90,494

The proposed improvements respond to the statewide growth in population and the additional and projected demands in goods resulting from this growth. The improvements, however, are not anticipated to impact the population of Sand Island's neighboring areas. The general vicinity shall remain in industrial use.

2. Public Services

There are seven fire stations within a two-mile radius of the Sand Island project area. However, access is limited to the Sand Island Access Road via the new two-lane bridge and the two-lane John H. Slattery Bascule Bridge. Within the immediate vicinity are the Kalihi-Kai Station (Pier 40) and the Waterfront Station (Pier 15). There is also an 110-foot long, 126-ton fireboat funded by the State and operated by the City and County of Honolulu Stationed at Pier 15.

The project site is within Police Beat 30 of the Honolulu Police Department which includes Sand Island and the Iwilei District. HPD provides 24-hour service and regularly patrols the Sand Island area. Patrol officers assigned to the beat are stationed at the Kalihi substation. Also, the State has a Harbor Police force stationed at Pier 10. They also provide 24-hour service and patrol the harbor area from Kewalo Basin to Pier 52 at Sand Island. The Honolulu Harbor Operations Control Center at the Aloha Tower coordinates all Harbor Police and fire activities. Matson also provides its own 24-hour security force for their container yard facilities.

Solid waste collection for Matson is handled by Oahu Scavengers, a commercial refuse firm. Pickup service is on an "on call" basis, and usually occurs about once a week.

POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Short-term Impacts:

Short-term impacts are those resulting from, and limited in duration to, the construction phase of the project.

1. Dust

Site preparation work may generate dust, particularly under dry and windy conditions. Appropriate mitigative measures such as spraying or sprinkling the soil with water will be implemented as warranted to minimize dust-related problems.

2. Noise

Noise will be generated on the construction site by equipment such as pile driving equipment, concrete trucks and material delivery vehicles. Because the area is heavily industrial, residences will not be affected. Some construction noise may be heard by users of Sand Island Park.

3. Traffic

Impacts of construction upon traffic are not anticipated to be significant. Construction equipment and vehicles will enter and exit the project area from Nimitz Highway, Sand Island Access Road, and Sand Island Parkway Road. Other than during peak traffic hours, this activity should not adversely impair traffic flow along these roadways. To minimize potential impacts, all movement of heavy construction vehicles will be scheduled to avoid peak traffic hours. If necessary, flagmen will be employed to ensure traffic safety.

4. Public Safety

Necessary measures to assure public safety will be implemented throughout all phases of construction. When construction is not on-going (nights, weekends, and holidays), construction areas will be secured by adequate safety signs, signals, and/or other safety devices as required by State and County regulations.

5. Archaeological and Historic Resources

Inasmuch as Sand Island was created by fill land in the early 1900's and 1940's when Honolulu Harbor and the seaplane runway were dredged, the uncovering of archaeological features or remains is not anticipated. In the event that any archaeological features or remains are uncovered during construction, work will be halted and the State Historic Preservation Office will be notified to determine and direct the proper course of action. These instructions will be included in the construction contract. There are no buildings, structures or other man-made features of historical significance on the project area that will be demolished during construction.

Long-term Impacts:

1. Air Navigation

The U.S. Department of Transportation, Federal Aviation Administration has conducted an aeronautical study to determine if the project would have any significant impact on the flight paths to and from Honolulu International Airport.

See Appendix A. The study concluded that "the proposed structures would not impact the minimum flight altitudes for existing or planned instrument enroute or terminal procedures."

2. Recreation

Inasmuch as the project site and the affronting harbor are not used for recreational purposes, no recreational impacts are anticipated. No impacts to Sand Island Park will be incurred since shipping operations will not change except for the use of larger ships.

2. Aesthetic/Visual Resources

The new crane will be approximately 125 feet higher than the existing cranes, but will be consistent with the existing type of uses presently at the site. No new significant night lights will be added at the project site except those required as safety beacons and for illuminating shadow areas caused by the new structures. The other improvements will not infringe on existing view planes.

ALTERNATIVES TO THE PROPOSED ACTION

Honolulu Harbor is the primary overseas and interisland cargo handling area for the State of Hawaii. Since the improvements would be made to an existing container handling facility, developing an alternative site is deemed unfeasible. Although alternative site development plans were considered, the proposed scheme was considered optimal from an operational perspective. No other facility or location has the built in features of the container yard at Piers 52 and 53 for container handling.

The new cranes are necessary to accommodate the new, larger ships and containers. The no alternative action would impede and hinder the shipping industries role in the State's growing economy.

MITIGATION MEASURES

Provisions will be made to minimize the short term impacts of construction.

DETERMINATION

No major adverse impacts are anticipated. A determination has been made that an Environmental Impact Statement is not required.

FINDINGS AND REASONS SUPPORTING THE DETERMINATION

Findings:

The effect of the project on the environment has been determined not to be significant. the construction of the proposed improvements to the container yard facilities will not:

* *Change the existing use(s) of the area;*
* *Displace any persons;*
* *Affect rare, threatened, or endangered species of animals, plants, or habitats;*
* *Involved an irrevocable commitment to or loss or destruction of any natural or cultural resources;*
* *Curtail beneficial use of the environment;*
* *Result in a conflict with the State's long-term environment goals, policies or guidelines; and*
* *Downgrade the environmental quality.*

Reasons:

This project will have a beneficial economic impact on the state. It is compatible with existing and planned land uses and activities in the area. It is compatible with the physical conditions and capabilities of the area. Any adverse impacts of the project have been determined to be insignificant. The applicant will comply with applicable statutes, ordinances and rules of the federal, state and county governments.

EDWARD Y. HIRATA
DIRECTOR OF TRANSPORTATION

6/12/90
DATE

APPENDIX A:

FEDERAL AVIATION ADMINISTRATION
AERONAUTICAL STUDY
NO. 89-AWP-457-OE

DOCUMENT CAPTURED AS RECEIVED

US Department of Transportation
Federal Aviation Administration

FAA, Airspace & Procedures, AWP-530
P.O. Box 92007, WWPC
Los Angeles, CA 90009

IN REPLY REFER TO
AERONAUTICAL STUDY
NO. 89-AWP-457-OE

DETERMINATION OF NO HAZARD TO AIR NAVIGATION

SPONSOR		CONSTRUCTION LOCATION	
	Matson Navigation Company 333 Market Street San Francisco, CA 94120	PLACE NAME Honolulu, HI	
		LATITUDE 21°18'54"	LONGITUDE 157°52'52"
CONSTRUCTION PROPOSED	DESCRIPTION Two Dockside Cranes	HEIGHT (IN FEET) ABOVE GROUND 300'	ABOVE MSL 309'

An aeronautical study of the proposed construction described above has been completed under the provisions of Part 77 of the Federal Aviation Regulations. Based on the study it is found that the construction would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the construction would not be a hazard to air navigation provided the following conditions are met:

Conditions:

See narrative.

Supplemental notice of construction is required any time the project is abandoned (use the enclosed FAA form), or

- ☐ At least 48 hours before the start of construction (use the enclosed FAA form).
- ☒ Within five days after the construction reaches its greatest height (use the enclosed FAA form).

This determination expires on May 14, 1991 unless:

(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

This determination is subject to review if an interested party files a petition on or before November 4, 1989. In the event a petition for review is filed, it should be submitted in triplicate to the Manager, Flight Information and Obstructions Branch, AAT-210, Federal Aviation Administration, Washington, D.C. 20591 and contain a full statement of the basis upon which it is made.

This determination becomes final on November 14, 1989 unless a petition for review is timely filed, in which case the determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

An account of the study findings, aeronautical objections, if any, registered with the FAA during the study, and the basis for the FAA's decision in this matter will be found on the following page(s).

If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

This determination, issued in accordance with FAA Part 77, concerns the effect of this proposal on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

- continued -

SIGNATURE Richard E. Mroczka TITLE Manager, System Management Branch

Jeffrey H. Thorstenson
Hawthorne, CA ON October 5, 1989

DOCUMENT CAPTURED AS RECEIVED

BACKGROUND

The proposal was filed on May 11, 1989, for two 300 foot above ground level (AGL)/309 foot above mean sea level (AMSL) container cranes which would be located on Sand Island at the Matson Terminal. The cranes will operate on a track which is approximately 1,750 feet long and will be located between 11,000 feet and 12,500 feet east of the approach end of Runway 26L of the Honolulu International Airport. The proposed structures are identified as obstructions by exceeding the standards of Federal Aviation Regulations (FAR) Part 77, Subpart C, as follows:

77.23(a)(2) by 96 feet, a height greater than 200 feet above airport elevation (13') within 3 nautical miles of the airport reference point of the Honolulu International Airport.

77.23(a)(5) by 136 feet, a height exceeding the conical surface of the Honolulu International Airport.

77.23(a)(5) by 41.5 to 79 feet, a height exceeding the 50:1/40:1 approach surface for Runway 26L at Honolulu International Airport depending upon the location of the cranes along the 1,750 foot track.

STUDY

A notice was issued on July 27, 1989, requesting comments to be received by the FAA on or before August 27, 1989. The following objections were received:

State of Hawaii Department of Transportation, Airports Division, objected to the proposal based on the fact that the proposed cranes are identified as obstructions and would not conform to the height limitations established by Hawaii Administrative Rules on Airport Zoning (Title 19, Subtitle 2, Chapter 12). These rules are based on the imaginary surfaces as defined in 14 CFR Part 77 and any penetrations are considered by the state as being in conflict with their attempt to protect the airspace surrounding airports.

Aloha Airlines objected to the proposal based on their calculations that the proposed structures would lower the effective payloads of B-737 freighter aircraft by 33% and the payload of B-737 passenger aircraft by 22%.

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The United States Air Force objected to the proposal based on the fact that the structures would penetrate the FAR Part 77 imaginary surfaces. In addition, objection was voiced in relation to the payload restrictions which would occur as a result of the proposal. In this objection, several references were made in regards to the obstacle clearance of the proposed cranes in respect to arrival and departure procedures for all runways at Honolulu International Airport.

FAA evaluation of the proposal shows the following:

IFR Impact

The study concludes that the proposed structures would not impact minimum flight altitudes for existing or planned instrument enroute or terminal procedures.

VFR Impact

The study concluded that the proposed structures would have no adverse impact on the VFR traffic pattern or other VFR operations and procedures including helicopter activity.

FAA Navigational Aid Impact

The FAA has determined through engineering analysis that there is no predicted electromagnetic interference to any FAA navigational aids.

State of Hawaii concerns:

The objections of the Department of Transportation, Airports Division, are based on the fact that the proposed cranes would violate local airport zoning rules. The height limits of this zoning rule is based on the Federal Aviation Regulations (FAR) Part 77 imaginary surfaces utilized to determine whether or not a structure is an obstruction. In the conduct of aeronautical studies the FAA is tasked to determine not only whether an object is an obstruction, but also to what extent it impacts the safe and efficient use of navigable airspace. The mere fact that an object penetrates an imaginary surface does not in itself constitute a hazard to air navigation. In order for an object to be determined a hazard, there must be proof of substantial adverse impact to aeronautical operations.

In this instance, the proposed cranes even though they penetrate the Part 77 imaginary surface would not raise any arrival minimums nor would they require an increase to any departure climb gradients and, therefore, is not considered to have a substantial adverse impact on aeronautical operations.

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Aloha Airlines concerns:

The concerns expressed by Aloha Airlines is based on departure procedures which would result in reduced payloads. The procedures to which they refer are the second segment engine out procedures established for the various types of aircraft in various climate conditions. These procedures are not established in FAR Part 77 as items to be considered in aeronautical studies. The departure procedures established in the TERPS handbook are utilized as the guideline for determining significant adverse impact. The procedure is based on a 40:1 slope commencing 35 feet above runway end elevation and provides for obstruction clearance of 48 feet per nautical mile based on a climb ratio of 200 feet per nautical mile. Utilizing this criteria, the proposed cranes would be below the 40:1 departure slope, thereby, having no impact on normal departure procedures.

U.S. Air Force concerns:

The U.S. Air Force objections are based on the penetration of FAR Part 77 imaginary surface and their conclusion that the proposed cranes would interfere with arrival and departure procedures. Their specific concerns involves Flight Tracks 04, 06, 27, and 29, the LDA/DME 26L approach, the missed approach to Runway 8L, and the ILS to Runway 04R. The flight tracks 04, 06, 27, and 29 are unpublished and unknown to Honolulu Air Traffic Control Tower personnel. Published arrival and departure procedures are utilized at Honolulu International Airport and are the criteria under which aeronautical studies are conducted. In regards to the Runway 8L missed approach, utilizing standard published missed approach procedures, the base of the airspace to the protected directly overhead the proposed cranes would be 792 feet AMSL this is 483 feet above the cranes, and would not be impacted. In the case of the ILS approach for Runway 4R, the base of the protected airspace would be 725 feet AMSL or 416 feet above the cranes. The departure procedures have been addressed earlier in this determination with a finding of no impact. No change of any procedures are anticipated as a result of the construction of the cranes.

CONCLUSION

The conclusion of this aeronautical study is based on the fact that neither of the cranes shall be placed west of a point defined as latitude 21°18'54"/longitude 157°52'52" raised to a height greater than 235 feet AMSL. Anytime the cranes are to be placed in the stowed position 309

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feet AMSL, they must be west of that position. Based on this condition, the FAA study has concluded that the proposed cranes would have no adverse effect on visual flight operations, nor would it impact existing or planned minimum instrument flight altitudes. FAA study also found there would be no adverse effect to the FAA air navigational aids.

Although the structure has been identified as an obstruction, the study results conclude the proposal would not adversely affect the safe and efficient use of navigable airspace and would not be a hazard to air navigation.

The cranes should be obstruction marked and lighted in accordance with FAA Advisory Circular 70/7460-1G, Chapters 3, 4, 5, and 9.