US ARMY CORPS
OF ENGINEERS
HONOLULU DISTRICT

DECISION DOCUMENT
ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT
AUGUST 2002

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS

Kahului, Island of Maui, Hawaii

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

Decision Document
for
Kahului Light Draft Navigation Improvements Project
Kahului, Maui, Hawaii

August 2002

EXECUTIVE SUMMARY

Kahului Light Draft Navigation Improvements Project, Kahului, Maui, Hawaii

1. **Study Authority.** Section 107 of Public Law 86-645, as amended.

2. **Project Sponsor.** The project sponsor is the State of Hawaii, Department of Land and Natural Resources (DLNR).

3. **Background.** A Detailed Project Report and Environmental Impact Statement (DPR/EIS) was completed in July 1989 and approved by the Chief, Planning Division, Directorate of Civil Works, Headquarters U.S. Army Corps of Engineers (HQ USACE) on June 5, 1989. Shortly after completion of the 1989 DPR/EIS, the project sponsor (State of Hawaii, Department of Land and Natural Resources) undertook certain construction activities at the project site and indicated that they would prefer to build a three-lane boat ramp in lieu of the two-lane boat ramp described in the DPR and construct two additional docks as part of the local service facilities. The subsequent federal project plans and specifications and Environmental Assessment (EA) took into consideration these State constructed modifications as well as the project sponsor's desire to construct a three-lane ramp and two additional docks.

4. **Study Purpose.** This decision document was prepared to determine whether continued Federal interest in harbor modifications is warranted based on a current economic and environmental evaluation of the plan recommended in the 1989 DPR/EIS with expanded local service facilities.

5. **Study Location**. The Kahului Light Draft Harbor site is located within Kahului Deep Draft Harbor on the northern coast of the island of Maui. The Kahului Light Draft Harbor site is located at an existing single-lane boat launch ramp adjacent to an area of coral fill adjoining the west breakwater.

6. **Problem Identification.** The lack of a protected turning basin, inadequate water depths in the entrance channel and turning basin, and numerous coral and rock outcroppings make use of the existing light draft navigation facility at Kahului hazardous. In addition, launching and retrieval operations are difficult due to the steepness of the existing ramp.

7. **Recommended Plan.** Based on the economic, social, and environmental impacts and needs and desires of the boating community and local sponsor, Plan A1 was selected as the recommended plan of improvement. Plan A1 is the National Economic Development (NED) Plan, which maximizes net benefits and is the original authorized plan. The recommended plan of improvements includes constructing a new breakwater and dredging an entrance channel and turning basin.

8. **Environmental Impacts.** Minimal environmental impacts associated with the project are anticipated. Dredging operations are expected to cause a temporary increase in turbidity, however, use of appropriate and effective silt containment devices have been incorporated into the construction documents as recommended by the National Marine Fisheries Service (NMFS).

The Corps acknowledges that some stony and soft corals may be destroyed at the mouth of the channel where new dredging will occur but the loss of significant amounts of these corals is not expected. In response to the NMFS's concern on the effects of blasting during project construction, the construction documents were modified to specify that blasting cannot be used by the contractor.

9. **Physical Data.**

Entrance channel: 1,030-ft-long, 9.5 feet deep by 50 feet wide
Turning basin: 100 feet by 100 feet, 8.5 feet deep
Breakwater: 130-ft-long with a crest elevation of +9.0 feet mean lower low water

10. **Benefit to Cost Ratio.**

Average Annual Benefits	$568,000
Average Annual Costs	$239,000
Benefit/Cost Ratio	2.38
Net NED Benefits	$329,000

Note: Benefits and costs based on October 2000 price level. Total project costs amortized over a 50-year economic life at an interest rate of 6-1/8 percent.

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Decision Document
for
Kahului Light Draft Navigation Improvements Project
Kahului, Maui, Hawaii
August 28, 2002

1. Authority.

This study was accomplished under the authority of Section 107 of the River and Harbor Act of 1960, as amended.

2. Background.

A Detailed Project Report and Environmental Impact Statement (DPR/EIS) was completed in July 1989 and approved by the Chief, Planning Division, Directorate of Civil Works, Headquarters U.S. Army Corps of Engineers (HQ USACE) on June 5, 1989. Following this approval the Honolulu Engineer District (District) commenced preparation of plans and specifications for the project. During preparation of these, the project sponsor (State of Hawaii, Department of Land and Natural Resources) indicated that it would prefer to build a three-lane boat ramp in lieu of the two-lane boat ramp described in the DPR. The project sponsor also indicated it would like to construct two additional docks as part of the local service facilities.

Shortly after completion of the 1989 DPR/EIS, the State of Hawaii undertook certain construction activities at the project site at the request of the harbor users. These improvements included dredging a turning basin (100' by 120' to -6.0' Mean Lower Low Water (MLLW) datum); dredging an entrance channel (700' by 60' wide to -6.0' MLLW); extending the existing boat ramp 12 feet to attain a -5.0-foot toe elevation at MLLW; constructing a new boat wash down area; and installing various water and electrical utility lines. The subsequent federal project plans and specifications and Environmental Assessment (EA) took into consideration these State constructed modifications as well as the project sponsor's desire to construct a three-lane ramp and two additional docks.

3. Purpose.

This Decision Document was prepared to determine whether continued Federal interest in harbor modifications is warranted based on current economic and environmental evaluations of the 1989 recommended plan with expanded boat launch ramp and docks.

4. Project Sponsor.

The project sponsor is the State of Hawaii, Department of Land and Natural Resources (DLNR).

5. Study Location.

The Kahului Light Draft Harbor site is located within Kahului Deep Draft Harbor on the northern coast of the island of Maui (Figure 1). Kahului Deep Draft Harbor is Maui's only deep water port and is protected by an east and west breakwater. The Kahului Light Draft Harbor site is located at an existing single-lane boat launch ramp adjacent to an area of coral fill adjoining the west breakwater.

6. Problem Identification.

The lack of a protected turning basin, inadequate water depths in the existing entrance channel and turning basin, and numerous coral and rock outcroppings make use of the existing light draft navigation facility at Kahului hazardous. In addition, launching and retrieval operations are difficult due to the steepness of the existing ramp.

7. Plan Formulation.

7.1 Alternatives.

The 1989 Final DPR/EIS assessed the impacts of the proposed action on three alternative sites as well as the "no action" alternative and evaluated various structural measures to provide safe and efficient light draft navigation facilities for the growing demands of the commercial fishing industry. Plans A and B are located near the shoreward portion of the fill area in the vicinity of the existing launch ramp at Site 1 (Figure 2). Plan C is located at the seaward portion of the fill area near the deeper waters of the deep draft harbor basin at Site 2 (Figure 2). The basic plans (Plans A1, B1, and C1) included a two-lane launch ramp, protected turning basin, and dredged entrance channel (Figures 3-5). These are the basic plans upon which all economic benefits and evaluations were based. The optional mooring plans for 10 to 15 vessels (Plans A2, B2, and C2) were developed for the benefit of the project sponsor.

Since formulation of the various alternative plans, only Plan A remains a viable option. Plan B was found to be uneconomical in the 1989 DPR/EIS and was not evaluated further in this analysis. Plan C is no longer viable because of plans to develop the site into a cruise ship terminal. The no action plan would not propose any improvements and does not meet the planning criteria and objectives. Thus, economic and environmental updates were focused on Plan A1 with expanded boat launch ramp and docks.

Two alternatives for dredged material disposal have been coordinated with the local sponsor. The first option for disposal is to give the dredged material to the State of Hawaii, Department of Transportation (DOT) for use on their beach restoration project along Kahului Beach Road. The dredged material will initially be dewatered at the existing coral fill area adjacent to the west breakwater and transported by the DOT to their site. The DOT will perform testing, obtain permits, and transport the material from the dewatering site at no cost to the federal project. If the DOT fails to transport the material within a reasonable period of time, not to exceed the period of construction, the Government will dispose of the material at the Ameron Hawaii facility located at Puunene, Maui.

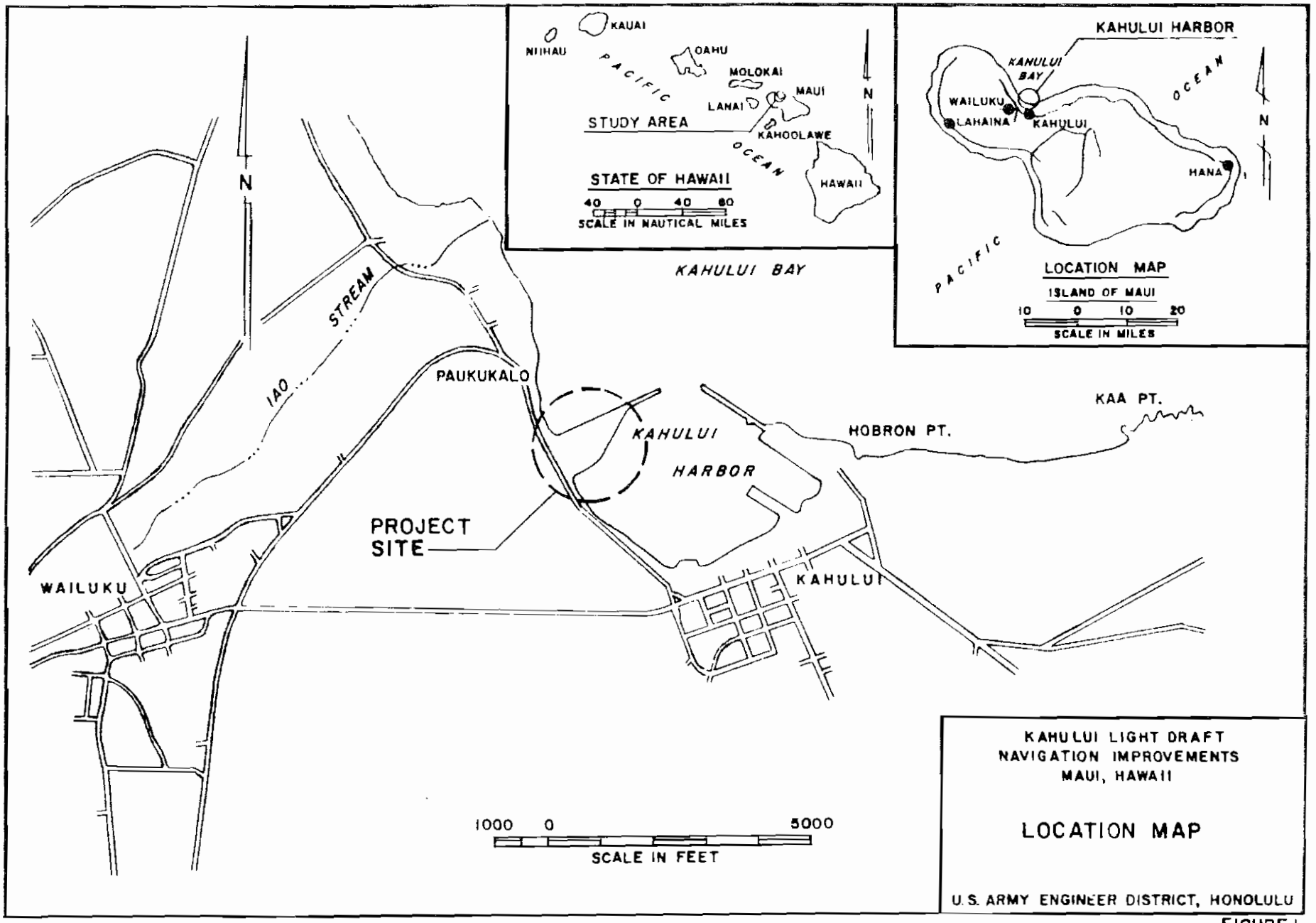

KAUAI
NIIHAU
OAHU
MOLOKAI
MAUI
LANAI
KAHOOLAWE
HAWAII
PACIFIC
OCEAN
STUDY AREA
STATE OF HAWAII
40 0 40 80
SCALE IN NAUTICAL MILES
N
KAHULUI HARBOR
KAHULUI BAY
WAILUKU
LAHAINA
KAHULUI
HANA
LOCATION MAP
ISLAND OF MAUI
10 0 10 20
SCALE IN MILES
KAHULUI BAY
N
STREAM
IAO
PAUKUKALO
KAHULUI
HARBOR
KAA PT.
HOBRON PT.
PROJECT
SITE
WAILUKU
KAHULUI
1000 0 5000
SCALE IN FEET
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII
LOCATION MAP
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 1

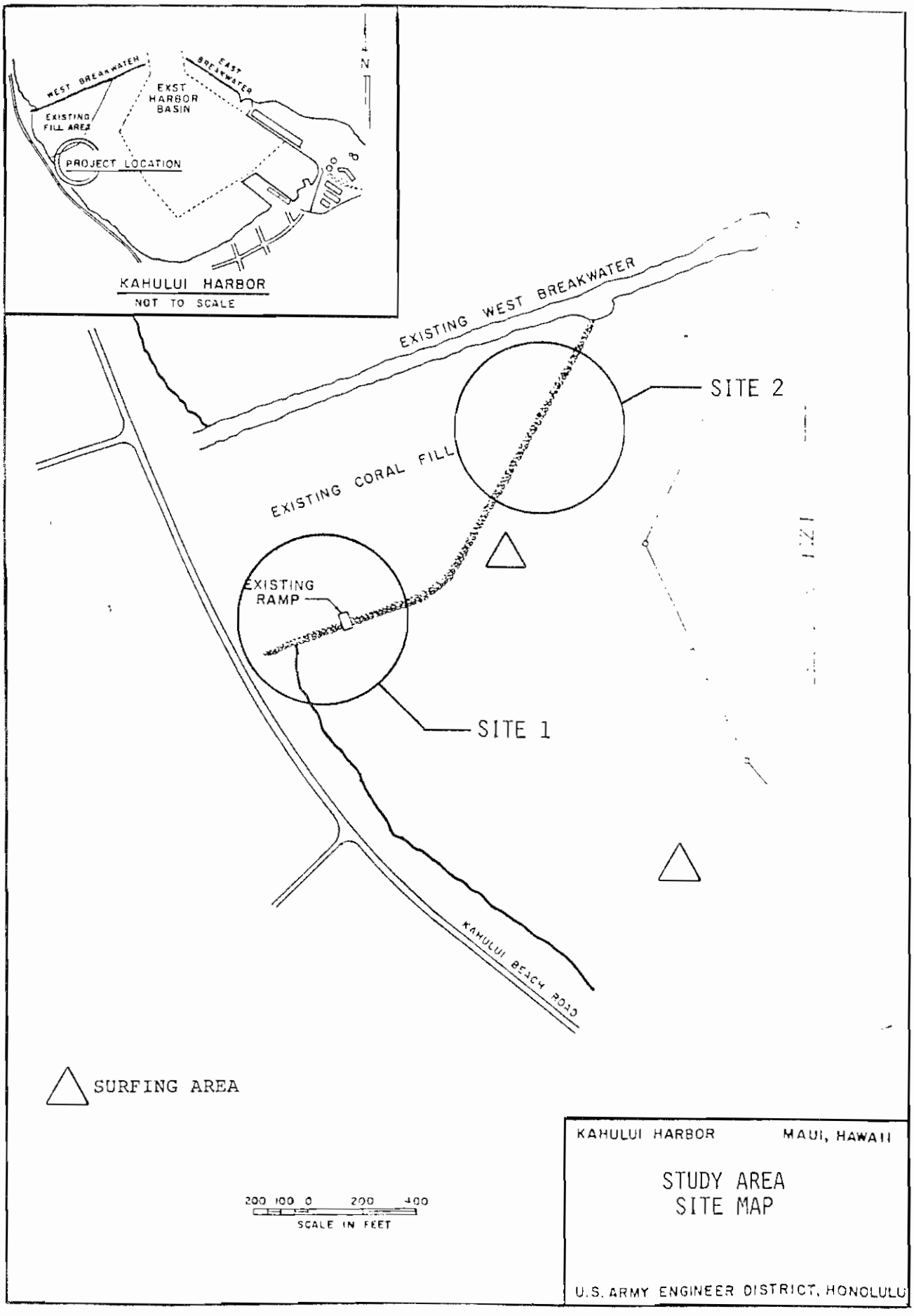

WEST BREAKWATER
EAST BREAKWATER
EXST HARBOR BASIN
EXISTING FILL AREA
PROJECT LOCATION
N
KAHULUI HARBOR
NOT TO SCALE
EXISTING WEST BREAKWATER
SITE 2
EXISTING CORAL FILL
EXISTING RAMP
SITE 1
KAHULUI BEACH ROAD
SURFING AREA
200 100 0 200 400
SCALE IN FEET
KAHULUI HARBOR MAUI, HAWAII
STUDY AREA
SITE MAP
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 2

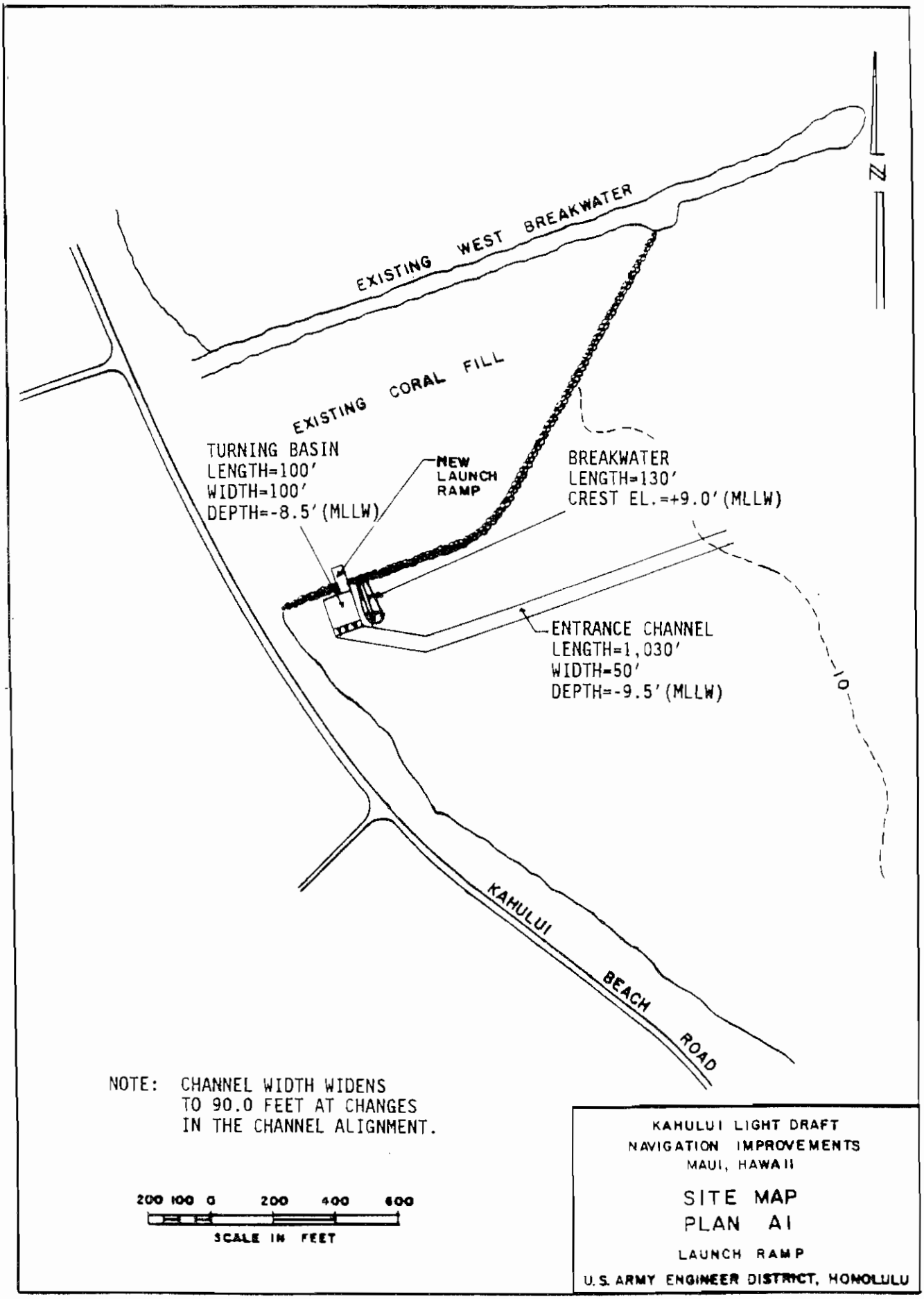

EXISTING WEST BREAKWATER
N
EXISTING CORAL FILL
TURNING BASIN
LENGTH=100'
WIDTH=100'
DEPTH=-8.5'(MLLW)
NEW
LAUNCH
RAMP
BREAKWATER
LENGTH=130'
CREST EL.=+9.0'(MLLW)
ENTRANCE CHANNEL
LENGTH=1,030'
WIDTH=50'
DEPTH=-9.5'(MLLW)
10
KAHULUI
BEACH
ROAD
NOTE: CHANNEL WIDTH WIDENS
TO 90.0 FEET AT CHANGES
IN THE CHANNEL ALIGNMENT.
200 100 0 200 400 600
SCALE IN FEET
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII
SITE MAP
PLAN A1
LAUNCH RAMP
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 3

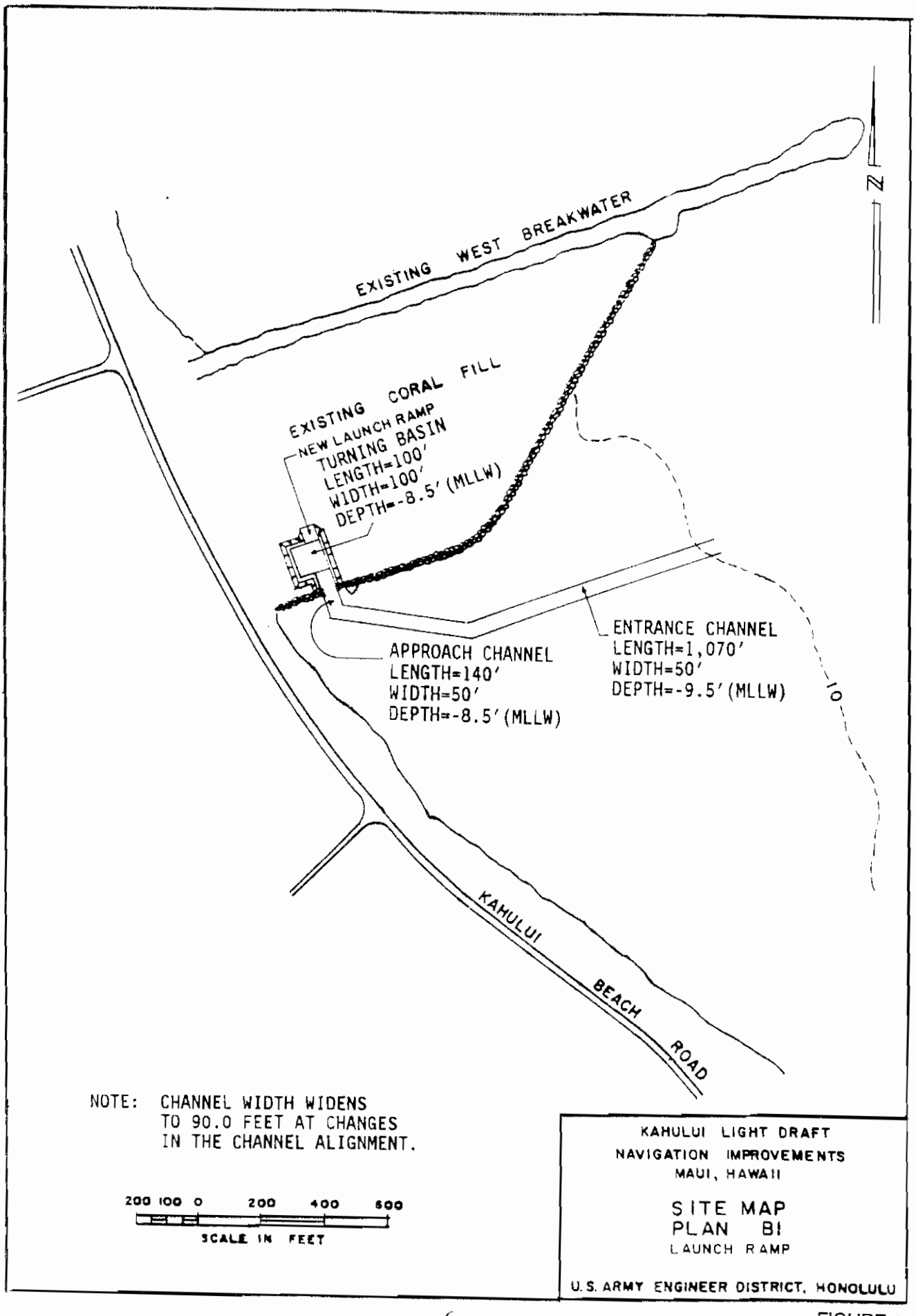

EXISTING WEST BREAKWATER
N
EXISTING CORAL FILL
NEW LAUNCH RAMP
TURNING BASIN
LENGTH=100'
WIDTH=100'
DEPTH=-8.5' (MLLW)
APPROACH CHANNEL
LENGTH=140'
WIDTH=50'
DEPTH=-8.5' (MLLW)
ENTRANCE CHANNEL
LENGTH=1,070'
WIDTH=50'
DEPTH=-9.5' (MLLW)
10
KAHULUI BEACH ROAD
NOTE: CHANNEL WIDTH WIDENS TO 90.0 FEET AT CHANGES IN THE CHANNEL ALIGNMENT.
200 100 0 200 400 600
SCALE IN FEET
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII
SITE MAP
PLAN B1
LAUNCH RAMP
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 4

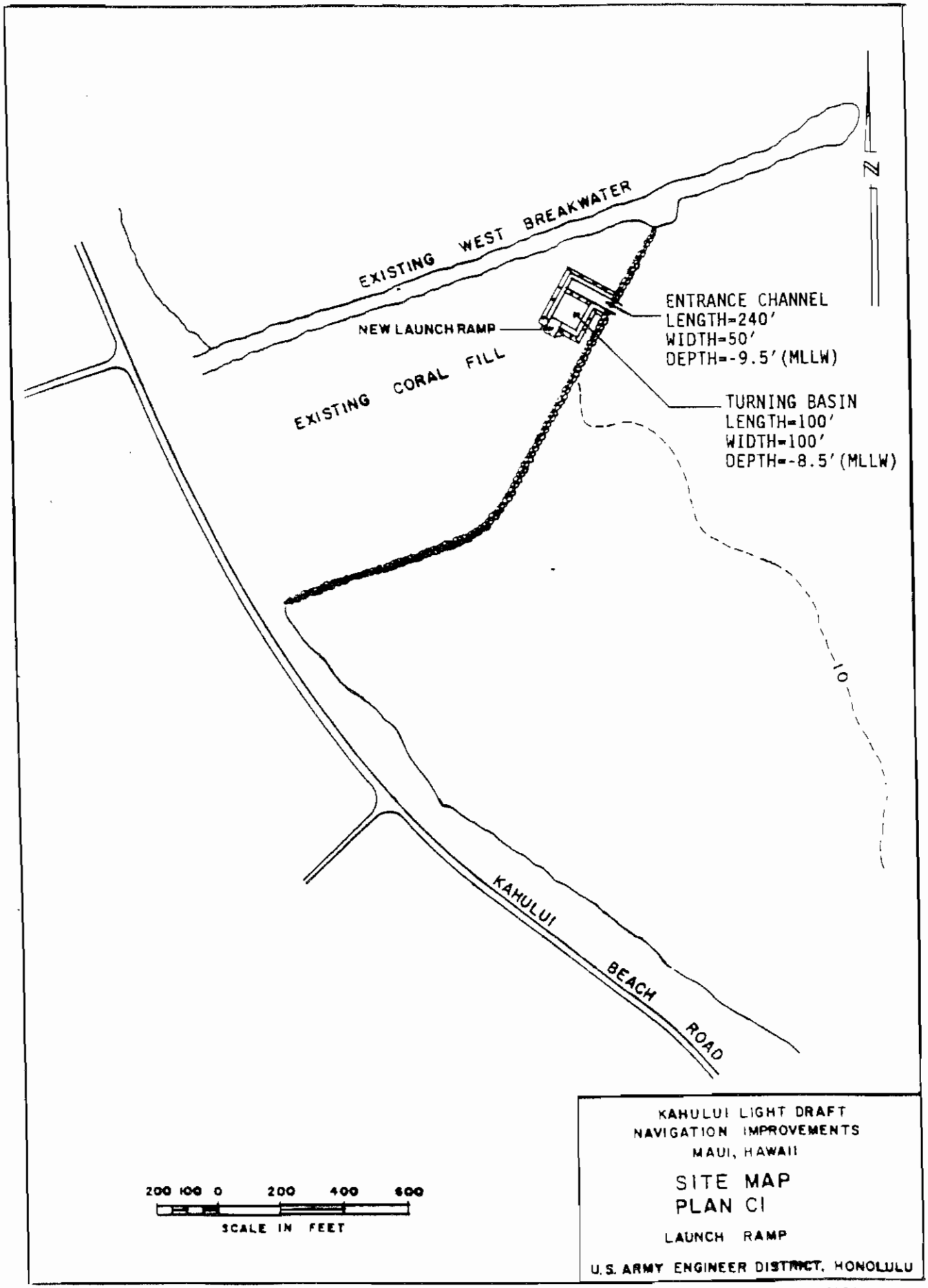

EXISTING WEST BREAKWATER
NEW LAUNCH RAMP
EXISTING CORAL FILL
ENTRANCE CHANNEL
LENGTH=240'
WIDTH=50'
DEPTH=-9.5'(MLLW)
TURNING BASIN
LENGTH=100'
WIDTH=100'
DEPTH=-8.5'(MLLW)
10
KAHULUI BEACH ROAD
N
200 100 0 200 400 600
SCALE IN FEET
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII
SITE MAP
PLAN C1
LAUNCH RAMP
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 5

7.2 Environmental Concerns.

An Environmental Assessment and Finding of No Significant Impact (EA/FONSI) were prepared in 1996 (Appendix A) to assess the impacts of proposed changes to the local service facilities in Plan A1 that were desired by the project sponsor, and to update the coordination and consultation with the resource agencies having jurisdiction by law or special expertise since the completion of the Final DPR/EIS in 1989. The EA contained an evaluation of the effects of discharge of dredged or fill material into waters of the United States using the Section 404(b)(1) guidelines, dated August 6, 1996. The Section 404(b)(1) analysis was updated on January 23, 2000 (Appendix B).

A search of the project file indicated that no Record of Decision (ROD) was signed after filing the Final Detailed Project Report and Environmental Impact Statement with the Environmental Protection Agency on September 8, 1989 (Appendix C). Therefore, the District prepared and filed a ROD in August 2001 to complete the 1989 EIS process (Appendix C).

The public has had numerous opportunities to comment on the project throughout the National Environmental Policy Act (NEPA) process and the processing and issuance of the Conservation District Use Application from the State of Hawaii (issued September 22, 2000), Special Management Area Use Permit and Shoreline Setback Variance from the County of Maui (approved April 28, 1998, 1st extension May 23, 2000, 2nd extension March 6, 2001), Water Quality Certification from the State of Hawaii (issued January 26, 2001), U.S. Army Corps of Engineers Honolulu District Public Notice 200000171 (June 2, 2000), and Department of Army Permit No. 200000171 (issued April 19, 2001). Copies of these permits can be found in Appendix C.

In 2000 - 2001, the District regulatory office processed a Department of Army (DA) permit application for those portions of the project being constructed by the sponsor. The DA permit notice described the scope and potential impacts of both the state and the federal features. During this process, the State Historic Preservation Office found that "there will be 'no significant historic sites affected' by the proposed undertaking", the Office of Planning re-affirmed its previous Coastal Zone Management consistency determination, the U.S. Fish and Wildlife Service stated that "...we believe the requirements of section 7 of the Endangered Species Act (ESA) have been satisfied", and the National Marine Fisheries Service (NMFS) stated that comments on the 1996 EA regarding candidate, proposed or listed endangered or threatened species remain valid. The letters from these resource agencies can be found in Appendix C.

Clean Air Act requirements were updated telephonically between the Corps of Engineers and Department of Health Clean Air Branch staff on December 28, 2001. A copy of the conversation record can be found in Appendix C. The Clean Air Branch does not regulate the type of moveable construction equipment that will be utilized for the Kahului Light Draft Harbor project. Therefore, they will not become involved in the project unless they receive complaints of fugitive dust during construction.

Dredged material testing sampling was performed on November 29, 2000, and summarized in a report dated January 10, 2001 (Appendix D). The State of Hawaii, Department of Health, Solid and Hazardous Waste Branch reviewed the test report and concurred on February 28, 2001, with the District's findings that the dredged material is acceptable for potential upland stockpile on a site adjacent to the west breakwater at Kahului Deep Draft Harbor and disposal at a site owned by Ameron Hawaii in Puunene (Appendix C).

The NMFS's recommendation to use appropriate and effective silt containment devices have been incorporated into the construction documents and as requested, the NMFS will be asked to review and comment on the contractor's Best Management Practices plan. The Corps acknowledges that some stony and soft corals may be destroyed at the mouth of the channel where new dredging will occur but the loss of significant amounts of these corals is not expected. In response to the NMFS's concern on the effects of blasting during project construction, the construction documents were modified to specify that blasting cannot be used by the contractor.

The Section 401 Water Quality Certification issued by the State of Hawaii Department of Health on January 26, 2001, shall become valid only when a complete environmental protection plan has been submitted to the Department of Health Clean Water Branch for review and comment and all related concerns and comments have been properly addressed to the Director of the Department of Health's satisfaction. The construction contractor must comply with this condition before in-water construction can be initiated.

Table 1 contains a summary of environmental compliance requirements and the dates these requirements were satisfied.

TABLE 1 - SUMMARY OF ENVIRONMENTAL STATUTES REQUIREMENTS

Environmental Impact Statement (EIS)	Filed September 8, 1989
Record of Decision (ROD)	August 29, 2001
Finding of No Significant Impact (FONSI)	October 23, 1996
ESA Section 7	August 28, 1995; updated July 6, 2000
Coastal Zone Management (CZM) Consistency Determination	February 25, 1997; updated June 7, 2000
401 Water Quality Certification (WQC)	Conditional WQC issued January 26, 2001
404(b)(1) Analysis	August 6, 1996; updated January 23, 2000
Section 103 MPRSA Evaluation	Not applicable
Section 106 National Historic Preservation Act	September 26, 1995; updated August 3, 2000
U.S. Fish and Wildlife Service Coordination Act Report	June 9, 1989; updated July 6, 2000
Clean Air Act	October 23, 1996; updated December 28, 2001

8. Economic Summary.

The District completed an economic analysis in November 2000, which was revised in August 2002 (Appendix E) based on the current MCACES cost estimate (Appendix F). This analysis updated and verified the findings of the economics analysis in the 1989 DPR/EIS. The update was based on a limited evaluation of the changes that took place since that report was completed. The intent of the analysis was to adjust the benefit-cost ratio and net benefits using recent data to update existing information and not conduct another feasibility level economic analysis.

The benefits and costs associated with the recommended plan were updated using a combination of information in the 1989 DPR/EIS, the current MCACES cost estimate, recent data gathered from individuals familiar with commercial fishing at Kahului Harbor, and a review performed by the National Marine Fisheries Service. Data on the number of fishermen, the number of trips taken, and the average catch per trip obtained from the original report were discussed and reconfirmed with current users of the existing navigation facility. Fishermen that use the launch ramp provided information on the operating costs involved in commercial fishing out of Kahului Harbor. The NMFS did a cursory update of the condition of the Maui fishery. Together, the information from all these sources was combined to reassess the findings from the original 1989 report.

Benefits were derived by combining fish catch, revenue, and vessel cost to calculate net revenue. The benefits derived are from increased usage of the harbor brought on by efficiency and safety gains under with-project condition. Vessel counts and trips increase, while operating costs increase but at a lower rate than net revenues. The result is a gain in net revenue under with-project condition. Benefits were based on an October 2000 price level. Average annual benefits for the recommended plan are $568,000. Project benefits are annualized over the 50-year life of the project using the federal discount rate of 6-1/8 percent.

The MCACES cost estimate was based on a July 2002 price level and adjusted to an October 2000 price level using the quarterly cost indices in Engineer Manual 1110-2-1304, revised 31 March 2002. The first cost of the federal features, including estimates for the cost of plans and specifications, engineering during construction, and construction supervision and administration, was $2,193,000. Interest during construction based on the first cost of the federal project features, a 12-month construction period, and a discount rate of 6-1/8 percent was $66,000. Total project costs of the federal features were amortized over a 50-year economic life at an interest rate of 6-1/8 percent using a capital recovery factor of 0.06455. An annual operation and maintenance cost of $39,000 was added to the amortized investment cost of $146,000 to get an average annual cost estimate of $185,000 for the federal features. The associated cost of non-federal features of $831,000 was also amortized to get an average annual cost estimate of $54,000. The total average annual cost estimate of the federal features and associated costs for the non-federal features was $239,000.

The revised benefit-cost ratio for the recommended alternative is $568,000/$239,000 = 2.38. The benefit-cost ratio in the 1989 DPR/EIS was $339,000/$207,000 = 1.6. The net benefits generated by this project have increased from $132,000 to $329,000. The project economics are summarized in Table 2.

TABLE 2 - ECONOMIC SUMMARY	
Average Annual Benefits	$568,000
Average Annual Costs	$239,000
Benefit/Cost Ratio	2.38
Net NED Benefits	$329,000

9. Real Estate.

The necessary project lands, easements, rights-of-way, relocations, and disposal areas (LERRDS) are located adjacent to the west breakwater at Kahului Deep Draft Harbor. This land was created during implementation of a Federal navigation project in 1961 - 1962, one of a series of Federal projects at Kahului Harbor. Dredged material from the project was placed in an enclosed dredged material disposal area sited in navigable waters within the Kahului Harbor. The non-Federal sponsor funded and constructed the retaining wall enclosing the disposal site as an item of cooperation during the 1961-2 project. Engineer Regulation (ER) 405-1-12 (1 May 1998), paragraph 12-38(a), provides that a non-Federal sponsor shall not receive credit for the value of any lands, easements, and rights-of-way, including incidental costs, that have previously been provided as an item of cooperation for another Federal project. As an item of cooperation, the dredged material disposal site has continuously served the Federal interest in commerce. For these reasons, the District has reevaluated earlier estimations and has determined that the project area remains subject to the dominant federal navigation servitude, and the District will not credit the sponsor for the value of the LERRDS required for the current project. For information, LERRDS are not required for a dredged material disposal site for the current project. Further, the value of the LERRDS is nominal based on current valuation guidelines in ER 405-1-12.

10. Cost Apportionment.

The apportionment of costs is based on Section 101 of the Water Resources Development Act of 1986 (WRDA 86), PL 99-662, which requires the non-federal sponsor to initially cost share 10 percent of the construction of the general navigation features during the period of construction of the project and an additional 10 percent payment over 30 years for commercial navigation projects where depths are modified up to 20 feet. Costs not associated with the general navigation features are 100 percent the responsibility of the non-Federal sponsor. Apportionment of the costs for the recommended plan, based on a September 2003 price level which is the estimated mid-point of construction, is shown on Table 3.

11. Operation, Maintenance, Repair, Replacement and Rehabilitation Plan (OMRR&R).

Upon completion of construction of this project, the harbor facility will be turned over to the project sponsor. As the project sponsor, the State of Hawaii, DLNR, Division of Boating and Ocean Recreation, will be responsible for the daily administration and operation of the Kahului Light Draft Harbor including the maintenance of the launch ramps, docks, and associated shoreside facilities.

TABLE 3. ESTIMATED COST APPORTIONMENT FOR RECOMMENDED PLAN
($1,000's, September 2003 Price Level) [1]

ITEM	TOTAL PROJECT COST	FEDERAL	NON-FEDERAL
FEDERAL PROJECT			
General Navigation Features (GNF)			
Mob/Demob	$126	$114	$12
Breakwaters	$449	$404	$45
Dredging	$896	$806	$90
Preconstruction Engineering and Design [2]	$667	$600	$67
Construction Management	$148	$133	$15
TOTAL GNF	**$2,286**	**(90%) $2,057**	**(10%) $229**
Lands, Easements, Rights of Way, Relocations (LERR)	$0	$0	$0
Navigation Aids	$0	$0	$0
TOTAL FEDERAL PROJECT	**$2,286**	**$2,057**	**$229**
Local Service Facilities (LSF)			
Site Work	$52	$0	$52
Boat Ramp	$269	$0	$269
Loading Docks	$370	$0	$370
Revetment	$92	$0	$92
Construction Management Services	$98	$0	$98
TOTAL LOCAL SERVICE FACILITIES	**$881**	**$0**	**$881**
TOTAL FIRST COST - FED PROJECT & LSF	**$3,167**	**$2,057**	**$1,110**
Post Construction Contribution (Additional 10% over 30 years)			[3] $229
Federal Cost Share Adjustment		-$229	
ADJUSTED COST - FED PROJECT & LSF	**$3,167**	**$1,828**	**$1,339**
Other Sunk Costs:			
Reconnaissance		$68	$0
Feasibility Cost		$198	$0
SUBTOTAL		**$2,094**	**$1,339**
Federal Per Project Limit (Section 107)		$4,000	
Federal Limit Overrun		$0	
Additional Non-Federal Cost			$0
FINAL FEDERAL/NON-FEDERAL COSTS	**$3,433**	**$2,094**	**$1,339**

[1] September 2003 price level (estimated midpoint of construction)
[2] Includes estimated engineering during construction (EDC) cost of $20,000.
[3] (10% of Total GNF) less LERR.

The Corps of Engineers will be responsible for the periodic inspection and maintenance of the general navigation features of this project. The general navigation features for this project include the entrance channel, turning basin, and breakwater structure. The breakwater structure will be inspected annually by the Corps. The Corps will also conduct periodic hydrographic surveys to determine if and when maintenance dredging is required.

Operation and maintenance of aids to navigation at federal navigation projects is generally a function executed by the U.S. Coast Guard (USCG) in accordance with federal law. The USCG may defer providing federally maintained aids to navigation to the State when there is no compelling federal interest in navigation, such as substantial intrastate or international commerce.

The local sponsor currently owns, operates, and maintains the existing aids to navigation (ten existing buoys and two range markers) at the Kahului Light Draft Harbor. The USCG has reviewed the proposed Federal project and has advised District staff and the local sponsor that the channel is adequately marked by these existing aids and the USCG does not foresee the need for any federally maintained aids to navigation. Therefore, the local sponsor will need to continue to operate and maintain the existing aids to navigation. The USCG may need to reposition one of its existing buoys at the Kahului Deep Draft Harbor to match the alignment of the new light draft entrance channel.

The parties also recognize the possibility that at some future date, changes in harbor usage and aids to navigation technology may permit the USCG to assume responsibility for operating and maintaining the project's aids to navigation system. Coordination between the local sponsor and Coast Guard will continue to ensure the adequacy of the aids to navigation system and responsibilities of each party.

TABLE 4. ESTIMATED AVERAGE ANNUAL OMRR&R COST FOR GENERAL NAVIGATION FEATURES

Item	Interval (Years)	Average Annual Cost
Breakwater Repairs	15	$11,000
Maintenance Dredging (Turning Basin & Entrance Channel)	10	$24,000
Hydrographic Surveys	2 for first 6 yrs, 4 thereafter	$4,000
TOTAL OMRR&R COST		**$39,000**

- Removal of Existing Structures. The project will include the removal of an existing rock groin.

- Breakwater. The new breakwater will have a crest elevation of plus 9.0 feet above mean lower low water (MLLW), a crest width of 12.0 feet, and a length of 130 feet. The side slopes will be 1 vertical on 1.5 horizontal.

- Turning Basin and Entrance Channel. The turning basin will measure 100 feet by 100 feet and will be dredged to a depth of minus 8.5 feet MLLW. The entrance channel will be 1,030 feet long, 50 feet wide, and dredged to a depth of minus 9.5 feet MLLW.

- New three-lane launch ramp and two docks to be provided by the local sponsor. Each lane of the launch ramp will be approximately 15 feet wide. Dock A will be 125 feet long by 7 feet 2 inches wide and Dock B will be 50 feet long by 3 feet 7 inches wide.

13. Local Cooperation.

A draft Project Cooperation Agreement (PCA) has been developed and coordinated with the project sponsor. The draft PCA was based on the Model Project Cooperation Agreement For Commercial Navigation Harbor Projects And Separable Elements For Which A Dredged Or Excavated Material Disposal Facility Must Be Constructed, Draft January 2000. The project sponsor and State Attorney General's office have reviewed the draft PCA and have provided letters stating that it appears acceptable for signature (Appendix C). Under State law, the Attorney General must seek written approval from the Governor to execute an agreement with an indemnification clause. The project sponsor has asked that HQ approve the final draft PCA before the sponsor staffs the indemnification request, in order not to have to repeat the process should language in the draft PCA change. This request was generated after we incorporated certain changes to the draft PCA regarding Davis-Bacon application to in-kind work. The project sponsor had previously obtained approval from the Governor to sign the agreement, but these changes in the draft PCA will require the project sponsor to obtain a new approval, which it will do at or near the time of execution of the agreement.

14. District Assessment of Project Sponsor's Financing Capability

The PCA for the Kahului Light Draft Navigation Improvements is scheduled for execution in December 2002. The project sponsor, State of Hawaii, DLNR has submitted a letter of intent to provide the local assurances and financial support to participate in the implementation of the recommended plan (Appendix C). The local contribution will be provided through State of Hawaii budget appropriations, which were appropriated in State Fiscal Year 1999 and released on June 12, 1998.

The State of Hawaii, DLNR will provide the non-Federal share of funds for this project in accordance with the draft PCA between the Department of the Army and State of Hawaii, DLNR.

The initial Non-Federal share is 10 percent of the construction cost for General Navigation Features or $229,000. This initial payment for construction will be made using State appropriated funds. An additional 10 percent or $229,000, will be paid over a period not to exceed 30 years. The local sponsor understands that due the determination on navigation servitude which was completed after the sponsor prepared their letter of support for the project, the District will not credit them for the value of the LERRDS required for the current project. The sponsor still supports implementation of the recommended plan.

Subsequent operation and maintenance costs for the breakwater, entrance channel, and turning basin will be entirely funded by the Federal Government. The local sponsor will fund the operation and maintenance of the launch ramps, docks, and appropriate shoreside facilities.

The financial capability statement provided by the State of Hawaii, DLNR provides adequate intent and justification of funding capability for this project. Therefore, based on the District's assessment of the project sponsor's intent and prior financial history it was determined that the project sponsor has the capability to finance its portion of the project costs.

15. Conclusions and Recommendations.

15.1 Conclusions.

The analyses documented in this decision document indicate that construction of the Kahului Light Draft Navigation Improvements project, as described in the recommended plan, is technically feasible, economically justifiable, and environmentally and socially acceptable. Plan A1 with expanded launch ramp was found to be the only viable alternative from those initially considered in the 1989 DPR/EIS; thus it was designated as the recommended plan.

The State of Hawaii, Department of Land and Natural Resources, has indicated its willingness to act as the project sponsor and fulfill all the necessary local cooperation requirements (Appendix C). The project sponsor has the ability to provide the required non-federal portion of the cost of the general navigation features. Thus, it is concluded that the Federal government should proceed with the light draft navigation improvements at Kahului, Maui, Hawaii.

15.2 Recommendations.

I recommend that the Kahului Light Draft Navigation Improvements project be approved for construction generally in accordance with the plan herein. The ultimate cost-shared total for general navigation features (GNF) is estimated at $2,286,000. This cost would be cost shared at $1,828,000 for Federal and $458,000 for non-Federal interests. The estimated overall total project cost, which includes the GNF, launch ramps and loading docks is $3,167,000. Of this total the Federal share will be $1,828,000 and the non-Federal share will be $1,339,000. Other related costs to be incurred as a result of these proposed improvements would be the average annual operation and maintenance costs for dredging and breakwater maintenance at $39,000 to be borne by Federal interests. Annual net benefits accruing from this plan of improvements are estimated at $329,000 with a benefit cost ratio of 2.38 to 1.

The foregoing recommendation is subject to the condition that prior to construction the project sponsor agrees, in writing, to:

a. Provide, during the period of construction, a cash contribution equal to 10 percent of the total cost of construction of the general navigation features (which include the construction of land-based and aquatic dredged material disposal facilities that are necessary for the disposal of dredged material required for project construction, operation, or maintenance and for which a contract for the facility's construction or improvement was not awarded on or before October 12, 1996);

b. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, up to an additional 10 percent of the total cost of construction of general navigation features;

c. Provide all lands, easements, and rights-of-way, and perform or ensure the performance of all relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features (including all lands, easements, and rights-of-way, and relocations necessary for dredged material disposal facilities);

d. Prevent future encroachments on project lands, easements, and rights-of-way, which might interfere with the proper functioning of the project;

e. Provide, operate, maintain, repair, replace, and rehabilitate, at its own expense, the local service facilities, which includes the necessary launch ramp facilities, appropriate onshore structures, access roadways and parking areas to insure a complete and adequate project; in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

f. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;

g. Grant the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the general navigation features for the purpose of inspection, and, if necessary, for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;

h. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;

i. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;

j. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

k. Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features;

l. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

m. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

n. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42

U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army;"

o. Provide a cash contribution equal to the non-Federal cost share of the project's total historic preservation mitigation and data recovery costs attributable to commercial navigation that are in excess of 1 percent of the total amount authorized to be appropriated for commercial navigation;

p. Not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute;

q. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 101 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provide that the Secretary of the Army shall not commence construction on any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

r. Assume all project costs in excess of the $4 million statutory Federal limitation in accordance with Section 107 of Public Law 86-645, as amended; and

s. Assume all costs for operation and maintenance of the project in excess of the greater of $4.5 million or 2.25 times the federal costs of the project, including costs for the planning, design, and construction phases, and for operation and maintenance of the general navigation features.

The recommendations for implementation of harbor improvements at Kahului, Hawaii, reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect the program and budgeting priorities inherent in the local and State program or the formulation of a national civil works water resources program. Consequently, the recommendations may be changed at higher review levels of the executive branch outside Hawaii before they are used to support funding.

Date 1 AUG 02

David C. Press
Lieutenant Colonel, U.S. Army
District Engineer

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX A - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT

KAHULUI LIGHT-DRAFT NAVIGATION IMPROVEMENTS

KAHULUI, MAUI, HAWAII

1. **PROJECT PROPONENT:** U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440

2. **PROJECT DOCUMENTS:** Project documents include the Final Detailed Project Report (DPR) and Environmental Impact Statement (FEIS) prepared by the Corps and circulated to the public in July 1989 and the Environmental Assessment (EA) for the Kahului Light-Draft Navigation Improvements, dated September 1996. These documents are incorporated by reference.

3. **DESCRIPTION OF PROJECT:** See attached EA.

4. **BASIS FOR FINDING:** The following factors were considered in the EA in making a determination that an environmental impact statement is not required for the action.

4.1 A FEIS for the Kahului Light-Draft Navigation Improvements Study was published in 1989. The FEIS included the results of all the required interagency and public coordination. No significant environmental impacts were identified.

4.2 There have been no substantial changes in the proposed project or the affected area since the FEIS was circulated.

4.3 Much of the project area and environment has been disturbed previously by human activities. The effects of further construction at the proposed project site will represent only an incremental change in the present conditions within Kahului Harbor.

4.4 The discharge of fill material into waters of the U.S. that will occur as a result of the proposed action has been

evaluated and found to be in compliance with the U.S. Environmental Protection Agency Section 404(b)(1) Guidelines.

4.5 The project will not adversely affect threatened or endangered species, nor their critical habitat.

4.6 The project will not adversely affect human health and welfare.

4.7 The project will not affect any historic or cultural sites.

4.8 The Corps of Engineers has determined that the project is in compliance with the State of Hawaii's Coastal Zone Management program.

5. **FINDING OF NO SIGNIFICANT IMPACT:** I find that neither the proposed project nor the environmental conditions in the project area have changed substantially since the FEIS was circulated. All required coordination has been completed. There are no significant adverse impacts likely to result from construction or operation and maintenance of the project. The construction documents shall contain provisions for pertinent environmental controls and mitigation measures to insure compliance with Federal, State and local environmental requirements by the contractor. Therefore, the Kahului Light-Draft Navigation Improvements Project is not considered a major action having significant effects on the quality of the human environment. A Supplemental Environmental Impact Statement is not required.

RALPH H. GRAVES
Lieutenant Colonel, U.S. Army
District Engineer

23 Oct 96
DATE

COVER SHEET

Lead Agency:	U.S. Army Corps of Engineers, Honolulu Engineer District
Proposed Action:	Provide Light-Draft Navigation Improvements at Kahului Harbor, Maui, Hawaii
Project Location:	Kahului, Maui, Hawaii
Type of Report:	Environmental Assessment, September 1996

Abstract: The U.S. Army Corps of Engineers, Honolulu Engineer District, and the State of Hawaii, Department of Land and Natural Resources - Division of Boating and Ocean Recreation (DLNR) plan to construct commercial light-draft navigation improvements within the Kahului deep-draft harbor located on the north coast of the island of Maui, Hawaii. The project will consist of: deepening the existing turning basin; deepening and lengthening the existing entrance channel; modifying the existing one-lane concrete launch ramp into a three-lane concrete launch ramp, including 180 feet of new concrete catwalks; constructing a new 130-foot-long breakwater structure; and removing an existing rock groin.

The initial study was initiated following a letter, dated May 3, 1983, from the State of Hawaii, Department of Transportation - Harbors Division (DOT), requesting that the U.S. Army Corps of Engineers, Pacific Ocean Division, Honolulu District (HED), conduct a study for a commercial fishing facility within the existing Kahului deep-draft harbor. The study request was made after the need for light-draft navigation facilities at Kahului Harbor were identified and reviewed in a working document for the "Review of the Coasts of Hawaiian Islands Study" prepared by HED in March 1983. An initial appraisal report was completed in October 1983 and a reconnaissance report was completed in September 1984. In July 1992, the DLNR assumed jurisdiction over all State of Hawaii light-draft navigation facilities.

The Corps completed the Final Detailed Project Report and Environmental Impact Statement (FEIS) which was circulated to the public in July 1989. The study was accomplished under the authority of Section 107 of the River and Harbor Act of 1960, as amended.

The FEIS concluded that: the proposed project would have no significant adverse effect on human health and welfare, no effect on any endangered or threatened species, and no significant effect on other biological resources; there are no surface archaeological sites or other historic features in the project area; and no prime agricultural lands will be affected by the project.

The purpose of this Environmental Assessment is to address the currently proposed light-draft navigation improvements at Kahului Harbor and to update and supplement the findings of the 1989 FEIS.

There have been no substantial changes in the proposed project and the environmental conditions in the project area have not changed substantially since the FEIS was circulated in 1989. There are no significant adverse impacts likely to result from construction or operation and maintenance of the project. The construction documents contain provisions for full compliance of environmental controls and mitigation measures by the contractor. In accordance with 33 CFR 230 and following, a supplemental EIS is not required. Instead, an updated Environmental Assessment and draft Finding of No Significant Impact have been prepared.

TABLE OF CONTENTS

APPENDICES

CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 **PROJECT SITE.** Maui is a part of the Hawaiian Archipelago which is located in the North Pacific Ocean and extends northwest to southeast from about 155 to 179 degrees west longitude to around 19 to 28 degrees north latitude. The Kahului deep-draft harbor is located on the north coast of the island of Maui, Hawaii. The project site (Figure 1), situated within Kahului deep-draft harbor, is located on the west side of the harbor adjacent to an area of coral fill. This fill area, has been designated for the development of a park (Kahului Harbor Park). To date, this park has been partially developed by the County of Maui, Department of Parks and Recreation. An existing boat ramp is located on the southwest corner of the fill area.

1.2 **PURPOSE AND NEED OF THE PROJECT.** The purpose of the project is to provide commercial light-draft navigation improvements for the north side of the island of Maui.

The north coast of Maui and the Kahului-Wailuku area have several navigational problems: 1) inadequate light-draft navigation facilities, 2) excess demand for existing light-draft navigation facilities due to a rapidly growing commercial fishing industry, and 3) windward exposure to trade winds.

The island of Maui presently has only two small boat harbors, one at Lahaina and one at Maalaea. Both harbors are located on the south coast of Maui. In the Kahului-Wailuku area there are only two single-lane launch ramps, one at Kahului Harbor and one at Maliko Bay. Maliko Bay is located approximately 10 road miles east-northeast of the Kahului deep-draft harbor. The narrow, steep-sided bay is almost directly exposed to the north and large waves from winter storms make use of the launch ramp marginal. Surge is also experienced at the ramp. Access to the single-lane launch ramp is via a narrow dirt road, and the site is somewhat distant from the population center at Kahului. The next nearest facilities on the north coast of Maui are single-lane launch

ramps located at Keanae, 33 miles from Kahului, and at Hana, 59 miles from Kahului (Figure 1).

The need for commercial light-draft navigation facilities in the Kahului-Wailuku area was indicated in the early 1960's under the Corps' Coast of Hawaiian Islands Survey. To meet the early need, the State of Hawaii constructed a 14-foot-wide single-lane launch ramp in 1963 within the Kahului deep-draft harbor. The requirement for improved light-draft navigation facilities was identified in Maui County's report to the Statewide Boating Task Force in early 1982. At a public workshop held at the Maalaea Boat and Fishing Club on May 13, 1982, sponsored by the Corps' Review of the Coasts of Hawaiian Islands Study, Maui boaters expressed their desire for light-draft commercial fishing facilities on the north coast of the island. The boaters suggested that the site be located within the Kahului deep-draft harbor because the harbor's proximity to the prime fishing grounds and because the market for the catch is located in Kahului.

After review of the working document for the "Coasts of Hawaiian Islands Study," the State of Hawaii, Department of Transportation, Harbors Division (DOT), requested that the Corps conduct studies for light-draft navigation improvements within the Kahului deep-draft harbor. Upon completion of the initial appraisal report in October 1983, a public workshop was held on February 15, 1984. At this workshop, the attendees again expressed and supported the need for commercial light-draft navigation facilities on the north side of Maui to help the growing fishing industry and to develop the productive northern fishing grounds. The local boaters strongly supported the development of navigational facilities within Kahului deep-draft harbor. During subsequent public workshops held on December 4, 1984, June 13, 1985, August 7, 1987, and a public meeting held on May 10, 1989, the boaters reaffirmed their support for light-draft navigation facilities improvements within the Kahului deep-draft harbor.

Boaters using the existing launch ramp at the Kahului deep-draft harbor indicated that launching and retrieval of their vessels was difficult due to the steepness of the ramp. In addition, the lack of an entrance channel and protected turning basin made use of the existing facility hazardous because of numerous coral and rock outcroppings and inadequate water depths, especially during low tides. Boaters had reported scraping the bottom of their

vessels, damaging propellers, and running into the submerged coral outcroppings.

1.3 **SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT.** This Environmental Assessment addresses the currently proposed Kahului Light-Draft Navigation Improvements Project. It supplements the Final Detailed Project Report and Environmental Impact Statement for the Kahului Light-Draft Navigation Improvements, Maui, Hawaii, dated July 1989. It is prepared to ensure public disclosure of environmental information related to the current project, in compliance with the National Environmental Policy Act.

CHAPTER 2

PROPOSED ACTION

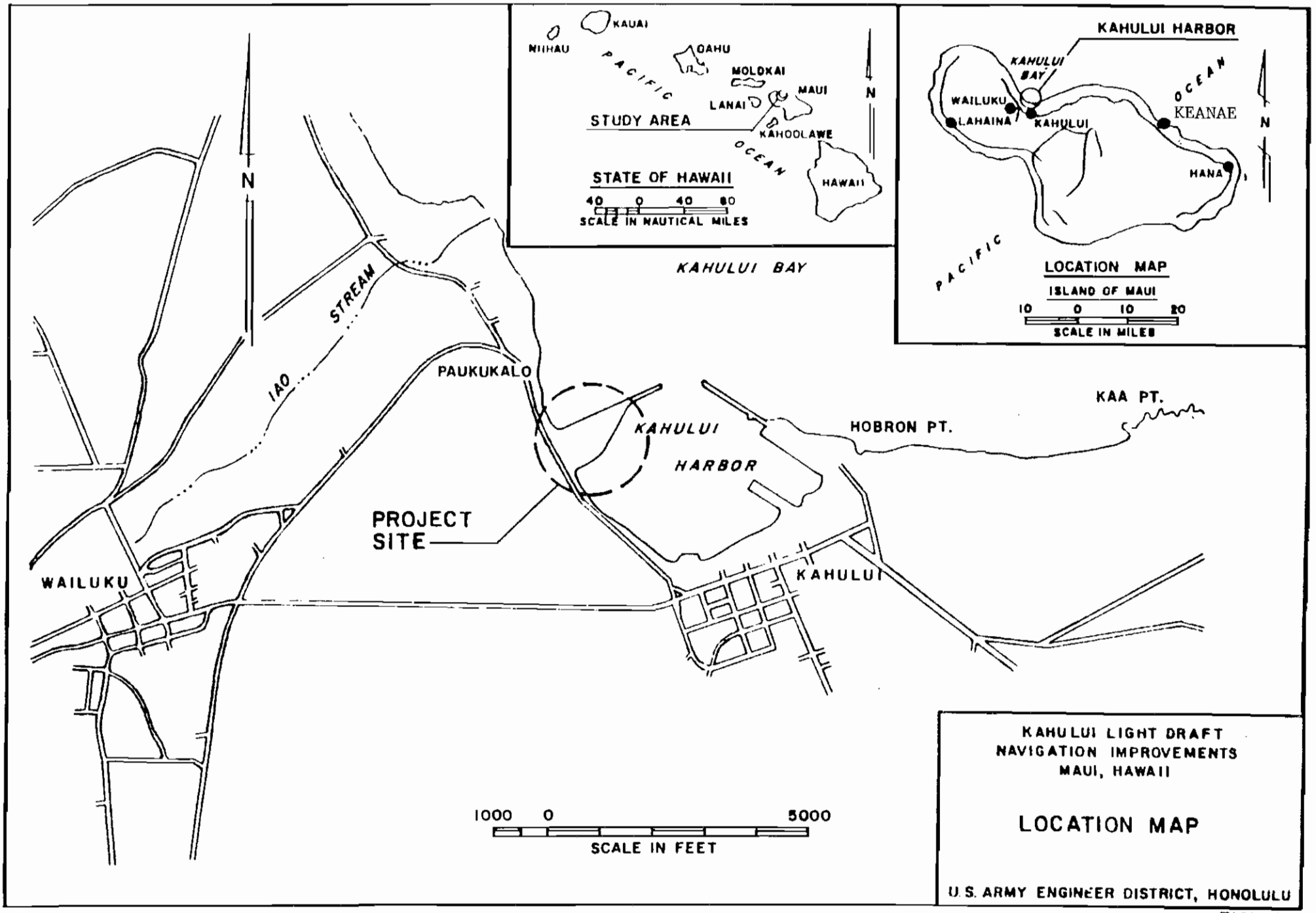
In the interim, the State DOT provided improvements to the boat launching facilities at the boat ramp in 1989, at the request of the users. The improvements consisted of: dredging a turning basin 100 feet by 120 feet to (-)6.0 feet Mean Lower Low Water (MLLW) datum; dredging an entrance channel 700 feet long by 60 feet wide to (-)6.0 feet MLLW; extending the existing boat ramp 12 feet to attain a (-)5.0-foot toe elevation at MLLW; constructing a new boat wash down area; and installing various water and electrical utility lines.

The proposed Federal general navigation improvements in the 1989 Final Detailed Project Report and EIS was Plan A1 which consisted of: a turning basin 100 feet by 100 feet to (-)8.5 feet MLLW; a 50-foot-wide entrance channel, 1,030 feet long to (-)9.5 feet MLLW; and a 130-foot-long rubblemound breakwater structure with a crest elevation at (+)9.0 feet MLLW. At the request of the State DOT, non-Federal improvements consisting of a three-lane launch ramp and a 180-foot-long concrete catwalk have been incorporated in the current proposed project.

The construction of the new three-lane concrete launch ramp and the deepening of the turning basin and entrance channel will allow larger-sized boats to utilize the boat launching facility; the entrance channel will provide two-way boat traffic. The breakwater structure acts to dissipate wave energy and will provide a calm area within the turning basin area allowing the safe launching and retrieval of boats at the boat ramp.

Although the existing entrance channel will be extended 130 feet at the seaward end, the remaining portion of the proposed dredging of the turning basin and entrance channel has been designed to remain within the present "footprint" of the existing entrance channel and turning basin areas. The proposed catwalks will be within the footprint of the proposed concrete launch ramp. The dredged material will be disposed of on-land on top of the existing west breakwater fill area (see Figure 2). The

County of Maui, Department of Parks and Recreation has requested use of the dredged material to create landscaped berms as part of the County of Maui, Department of Park and Recreation's Master Plan for the Kahului Harbor Park development.



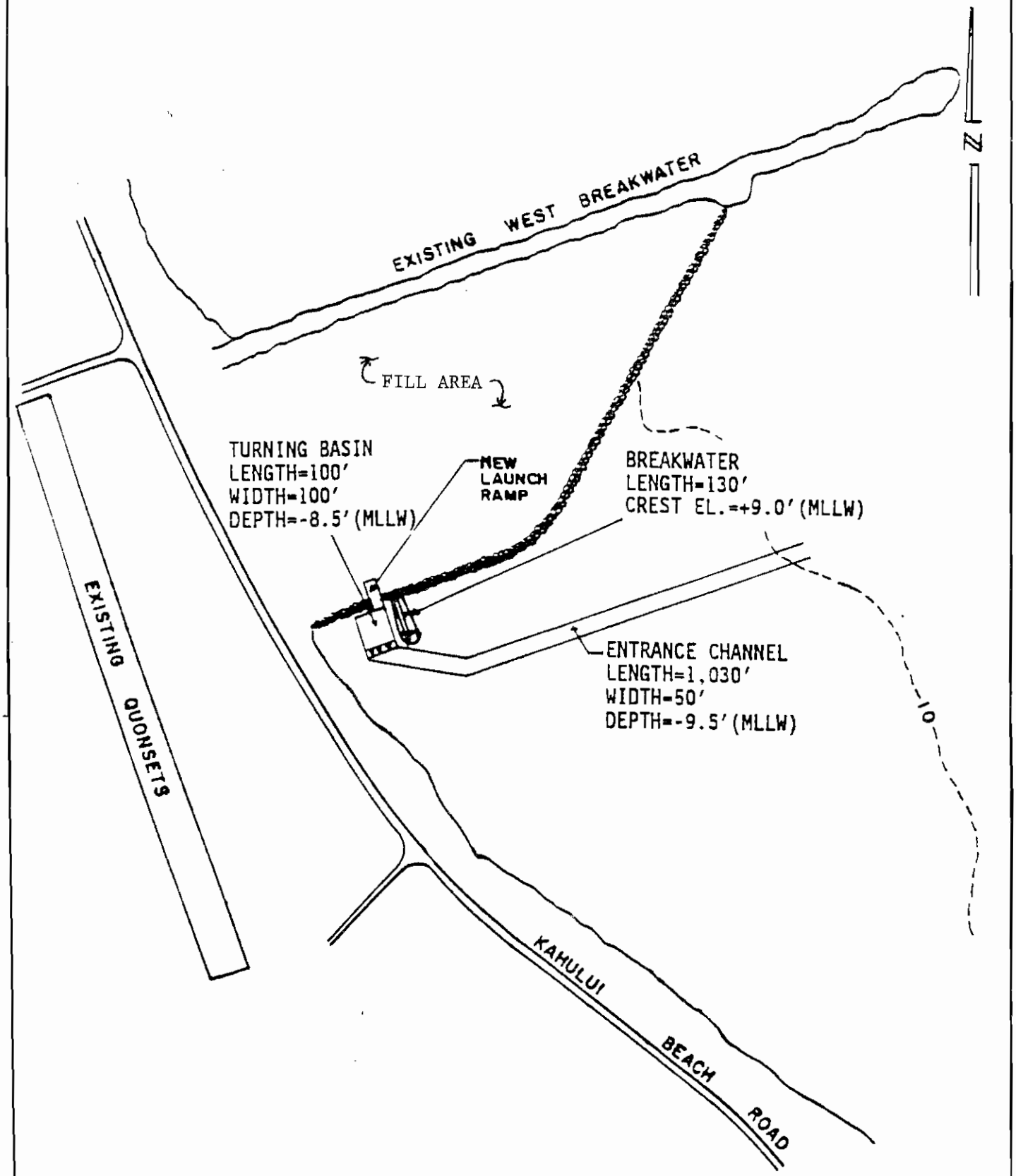
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII

LOCATION MAP

U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 1

FIGURE 1



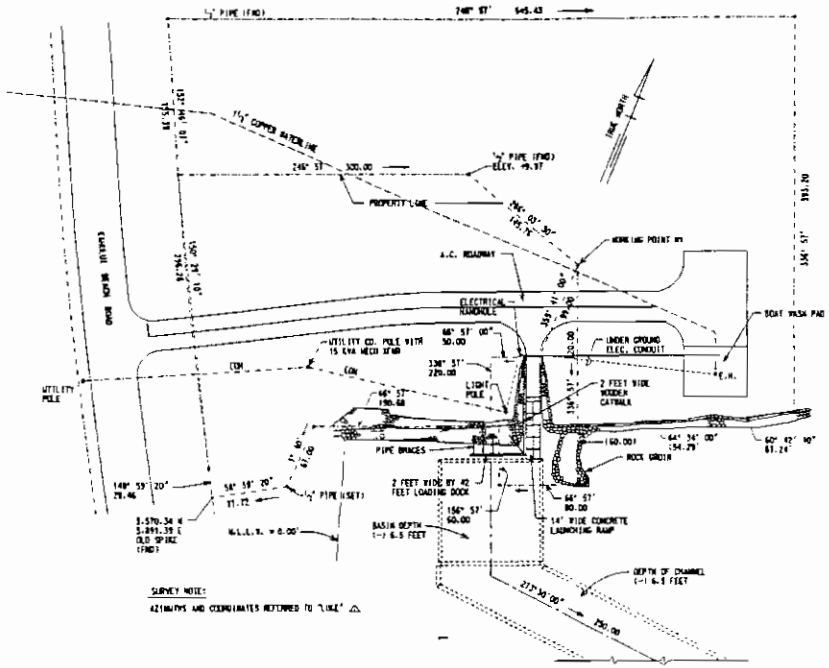
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII

SITE MAP

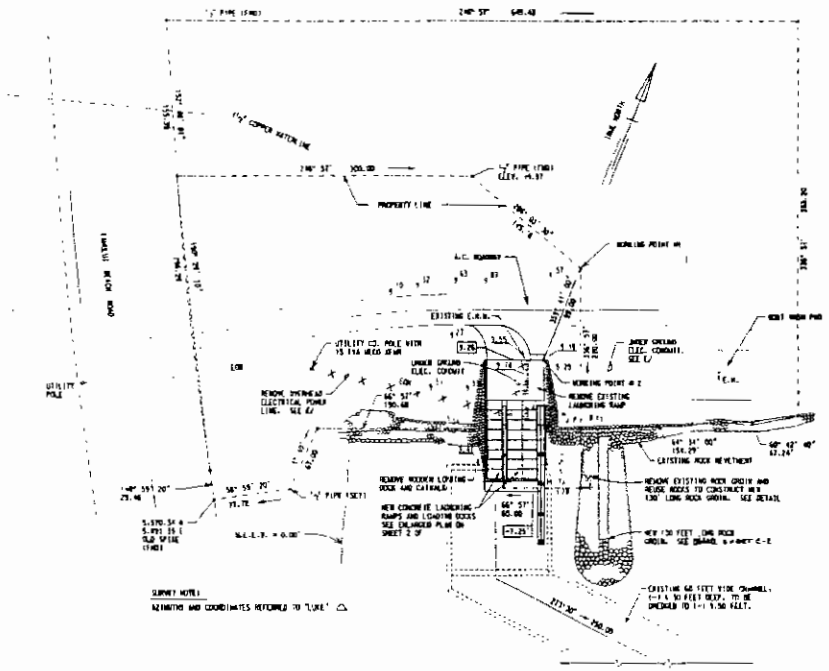
(PLAN OF IMPROVEMENTS)

U.S. ARMY ENGINEER DISTRICT, HONOLULU

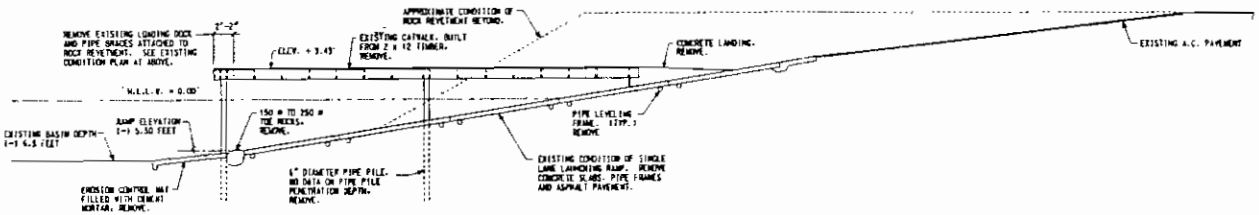
FIGURE



EXISTING CONDITION - LAUNCHING RAMP PLAN
SCALE : 1" = 50'



NEW CONDITION - LAUNCHING RAMP PLAN
SCALE : 1" = 50'



EXISTING CONDITION AT RAMP SECTION AND ELEVATION OF CATWALK
SCALE : 1/4" = 1'-0"

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGN DIVISION
U.S. ARMY ENGINEER DIVISION, PACIFIC OCEAN
HONOLULU DISTRICT
HONOLULU, HAWAII

KAHULUI LIGHT DRAFT NAVIGATIONAL IMPROVEMENTS, MAUI

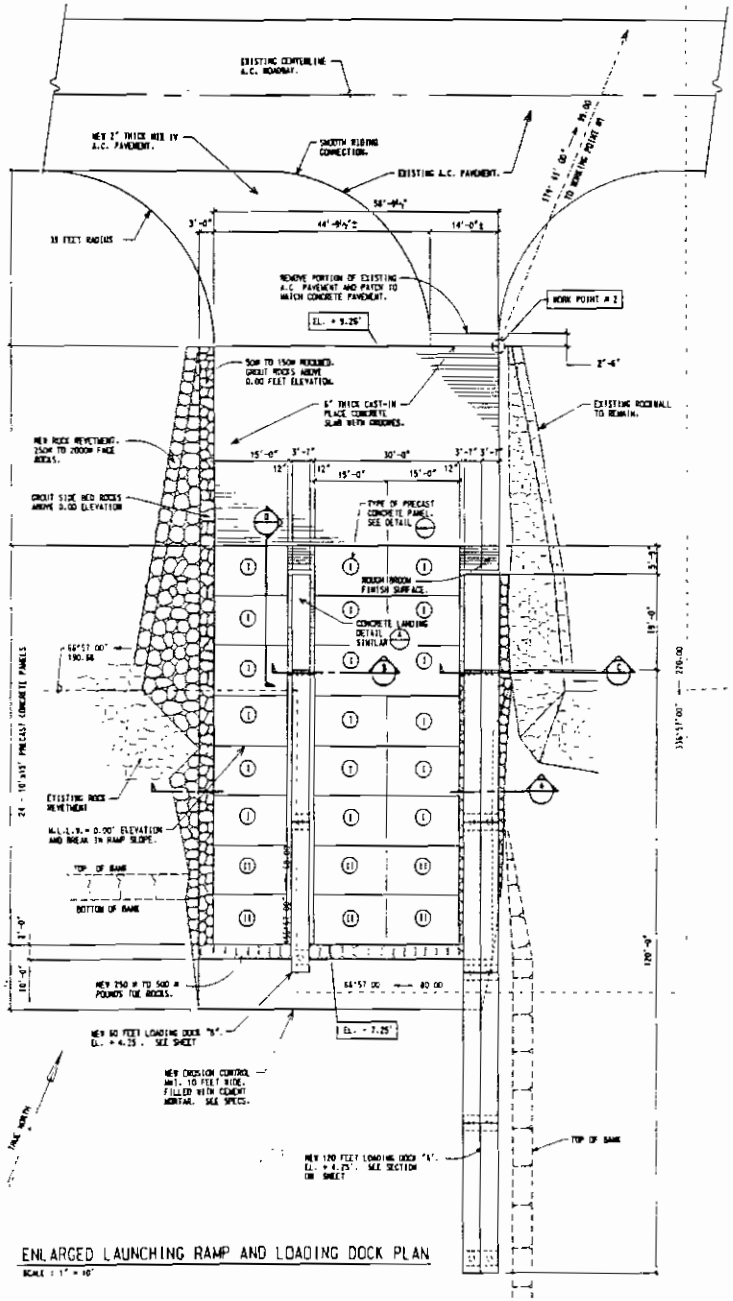
NEW AND EXISTING PLANS, EXISTING SECT. AND ELEV.

US ARMY CORPS OF ENGINEERS

DRAWING NUMBER C-5

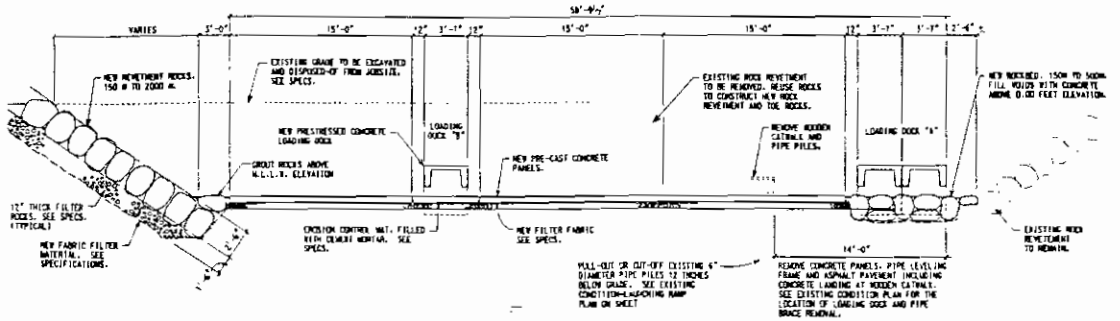
FIGURE 3

FIGURE 3



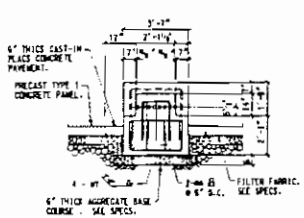
ENLARGED LAUNCHING RAMP AND LOADING DOCK PLAN

SCALE : 1" = 10'



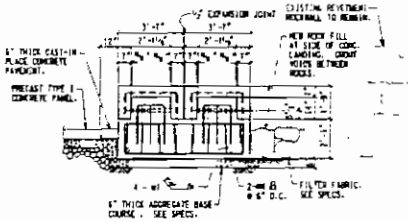
A CROSS-SECTION THRU LAUNCHING RAMPS

SCALE : 1/4" = 1'-0"



B CROSS SECTION THRU CONCRETE CHANNEL SEAT

SCALE : 1/2" = 1'-0"



C CROSS SECTION THRU CONCRETE CHANNEL SEAT

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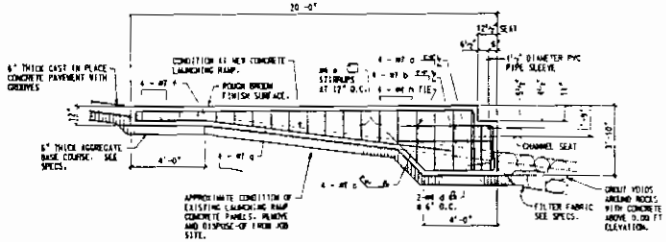


D LONGITUDINAL SECTION THRU CONCRETE LANDING

SCALE : 1/2" = 1'-0"

REVISIONS					
NO.	ZONE	DESIGN SYMBOL	DATE	BY	CHK'D APVD
DESIGN DIVISION	U.S. ARMY ENGINEER DIVISION, PACIFIC OCEAN HONOLULU DISTRICT HONOLULU, HAWAII				
PREPARED	CHECKED	KAHULUI LIGHT DRAFT NAVIGATIONAL IMPROVEMENTS, MAUI, HAWAII			
US ARMY CORPS OF ENGINEERS		PLAN AND SECTIONS OF LAUNCHING RAMP AND LOADING DOCK			
DATE	LOCATION				
DWG NAME	DRAWING NUMBER				
	HELP ID	CLASS	TYPE	SEQUENCE	SHEET C-6

FIGURE 4

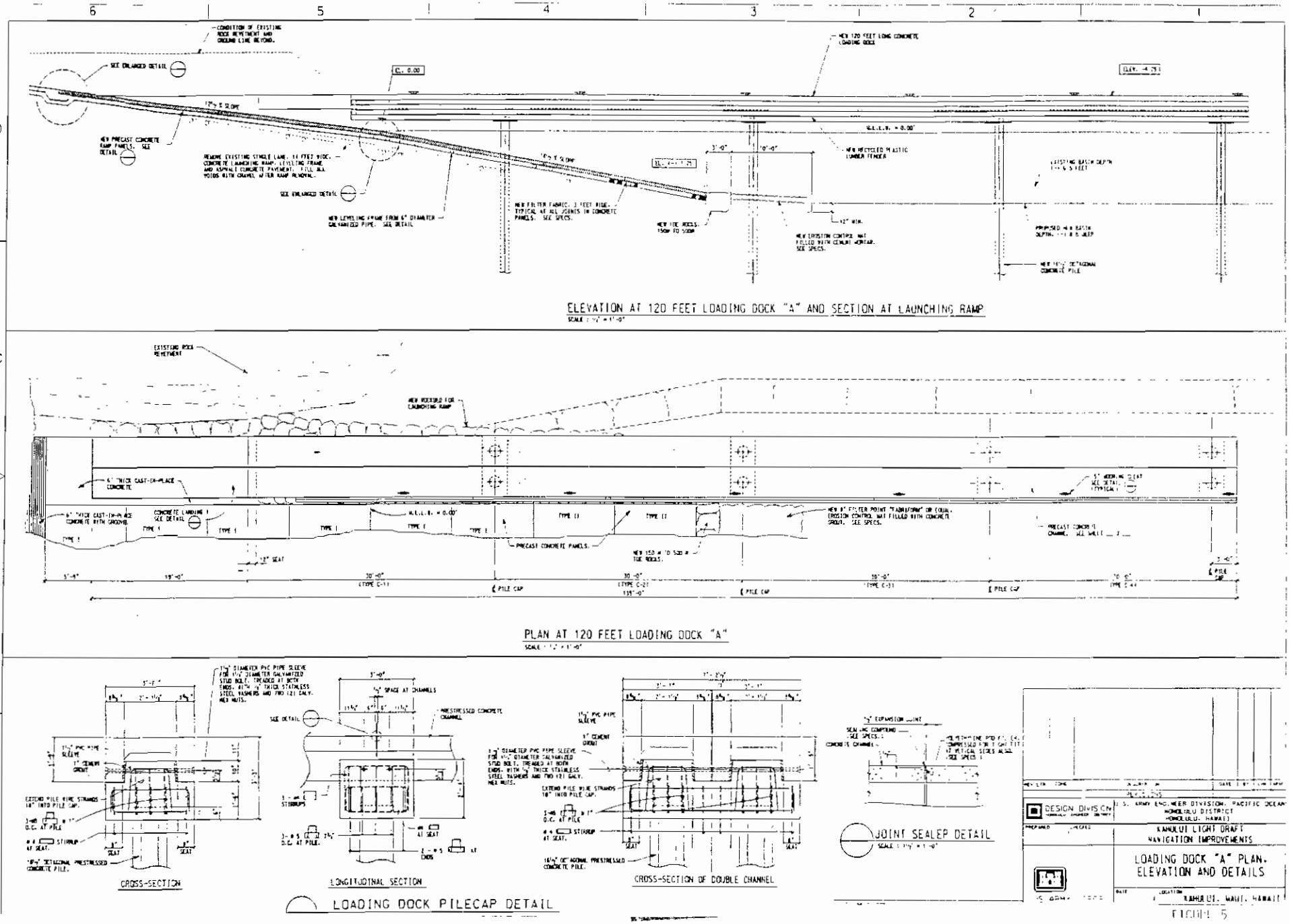
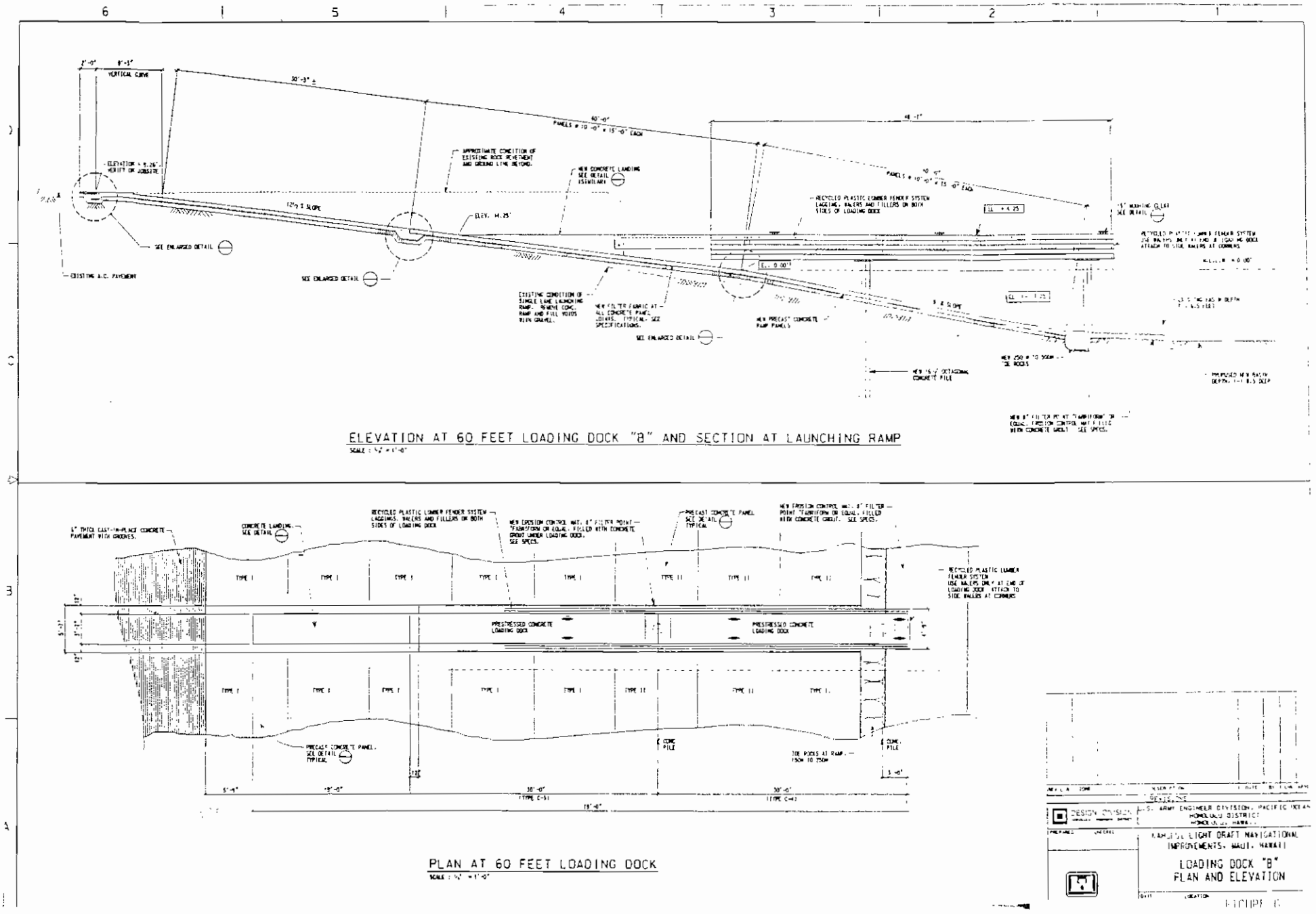

ELEVATION AT 120 FEET LOADING DOCK "A" AND SECTION AT LAUNCHING RAMP
PLAN AT 120 FEET LOADING DOCK "A"
LOADING DOCK PILECAP DETAIL
CROSS-SECTION
LONGITUDINAL SECTION
CROSS-SECTION OF DOUBLE CHANNEL
JOINT SEALEP DETAIL
DESIGN DIVISION
U. S. ARMY ENGINEER DIVISION, PACIFIC OCEAN
HONOLULU DISTRICT
HONOLULU, HAWAII
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
LOADING DOCK "A" PLAN, ELEVATION AND DETAILS
KAHULUI, MAUI, HAWAII
FIGURE 5

FIGURE 5



ELEVATION AT 60 FEET LOADING DOCK "B" AND SECTION AT LAUNCHING RAMP

SCALE : ¼" = 1'-0"

PLAN AT 60 FEET LOADING DOCK

SCALE : ¼" = 1'-0"

DESIGN DIVISION

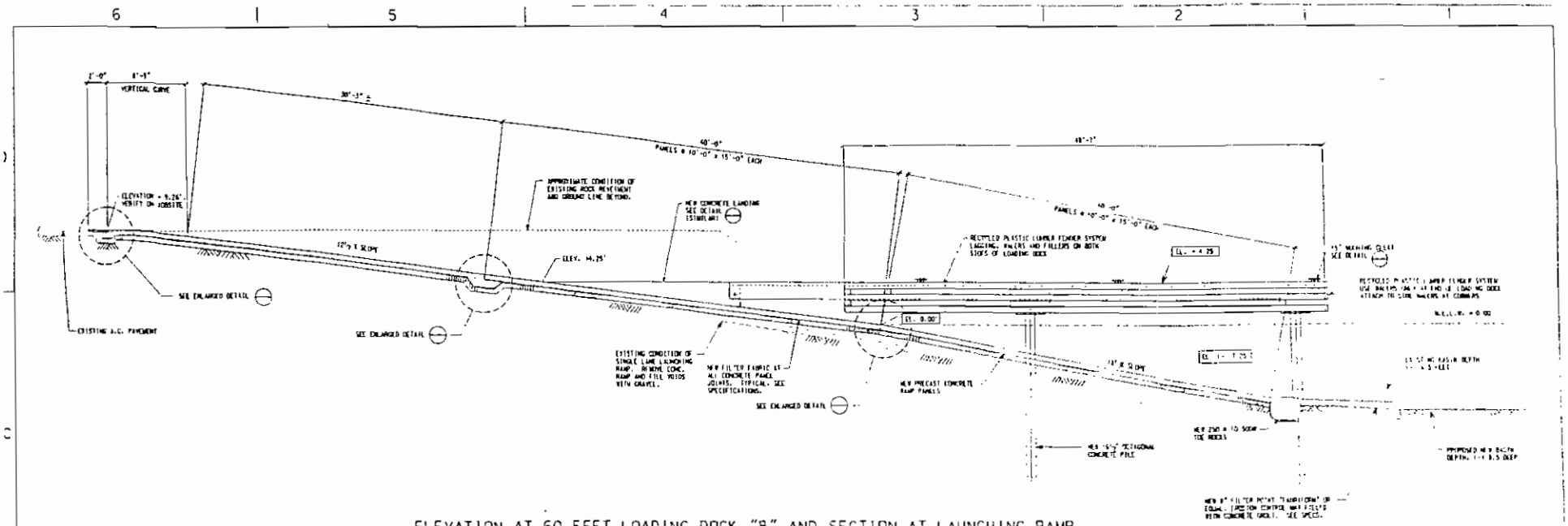
U.S. ARMY ENGINEER DIVISION, PACIFIC OCEAN
HONOLULU DISTRICT
HONOLULU, HAWAII

KAHULUI LIGHT DRAFT NAVIGATIONAL IMPROVEMENTS, MAUI, HAWAII

LOADING DOCK "B" PLAN AND ELEVATION

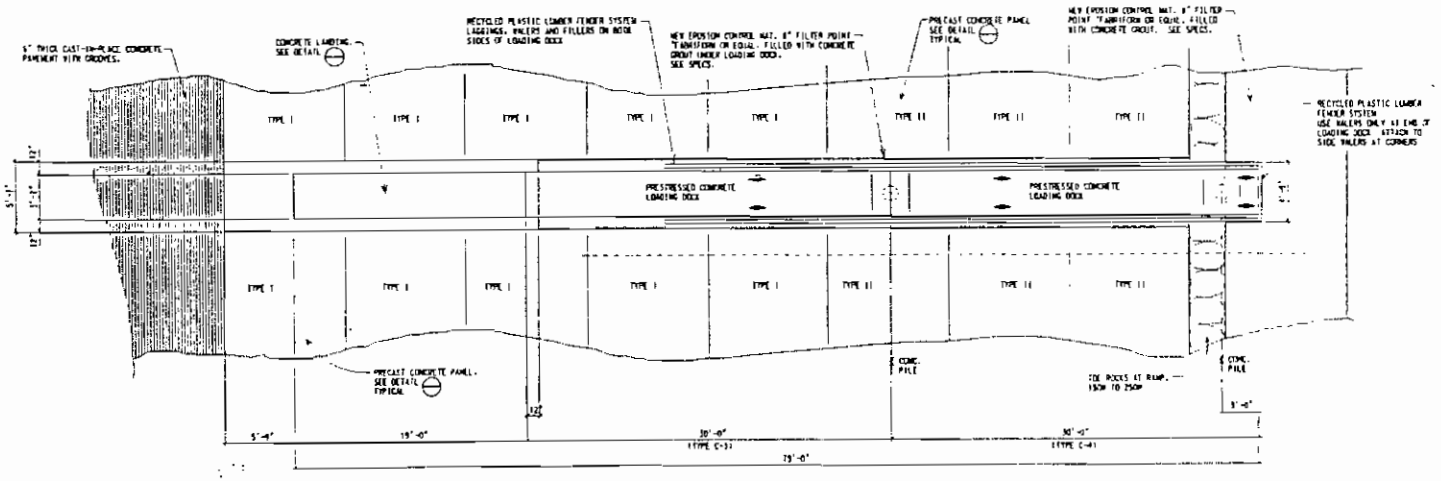
FIGURE 6

FIGURE 6



ELEVATION AT 60 FEET LOADING DOCK "B" AND SECTION AT LAUNCHING RAMP

SCALE 1/4" = 1'-0"



PLAN AT 60 FEET LOADING DOCK

SCALE 1/4" = 1'-0"

DESIGN DIVISION

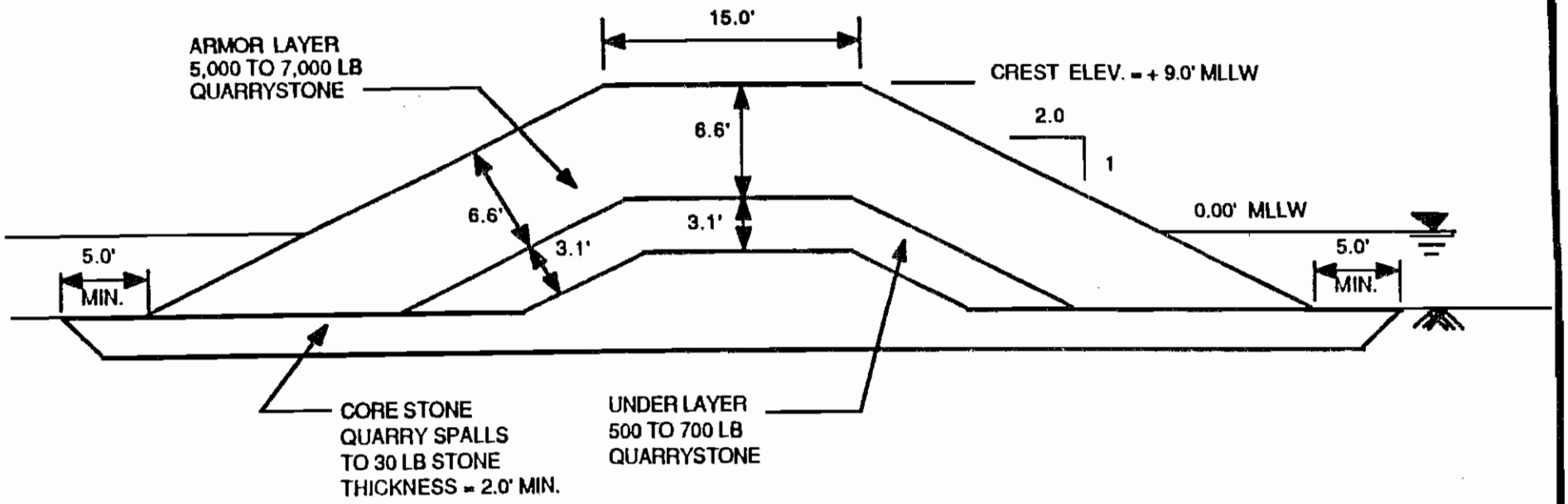
U.S. ARMY ENGINEER DIVISION, PACIFIC OCEAN
HONOLULU DISTRICT
HONOLULU, HAWAII

KAHULUI LIGHT DRAFT NAVIGATIONAL IMPROVEMENTS, MAUI, HAWAII

LOADING DOCK "B"
PLAN AND ELEVATION

FIGURE 6

FIGURE 6



TYPICAL BREAKWATER SECTION

SCALE: 1' = 10.0'

KAHULUI LIGHT DRAFT NAVIGATION
IMPROVEMENTS
MAUI, HAWAII

(TYPICAL BREAKWATER SECTION)

US ARMY ENGINEERING DISTRICT, HONOLULU

FIGURE 7

FIGURE 7

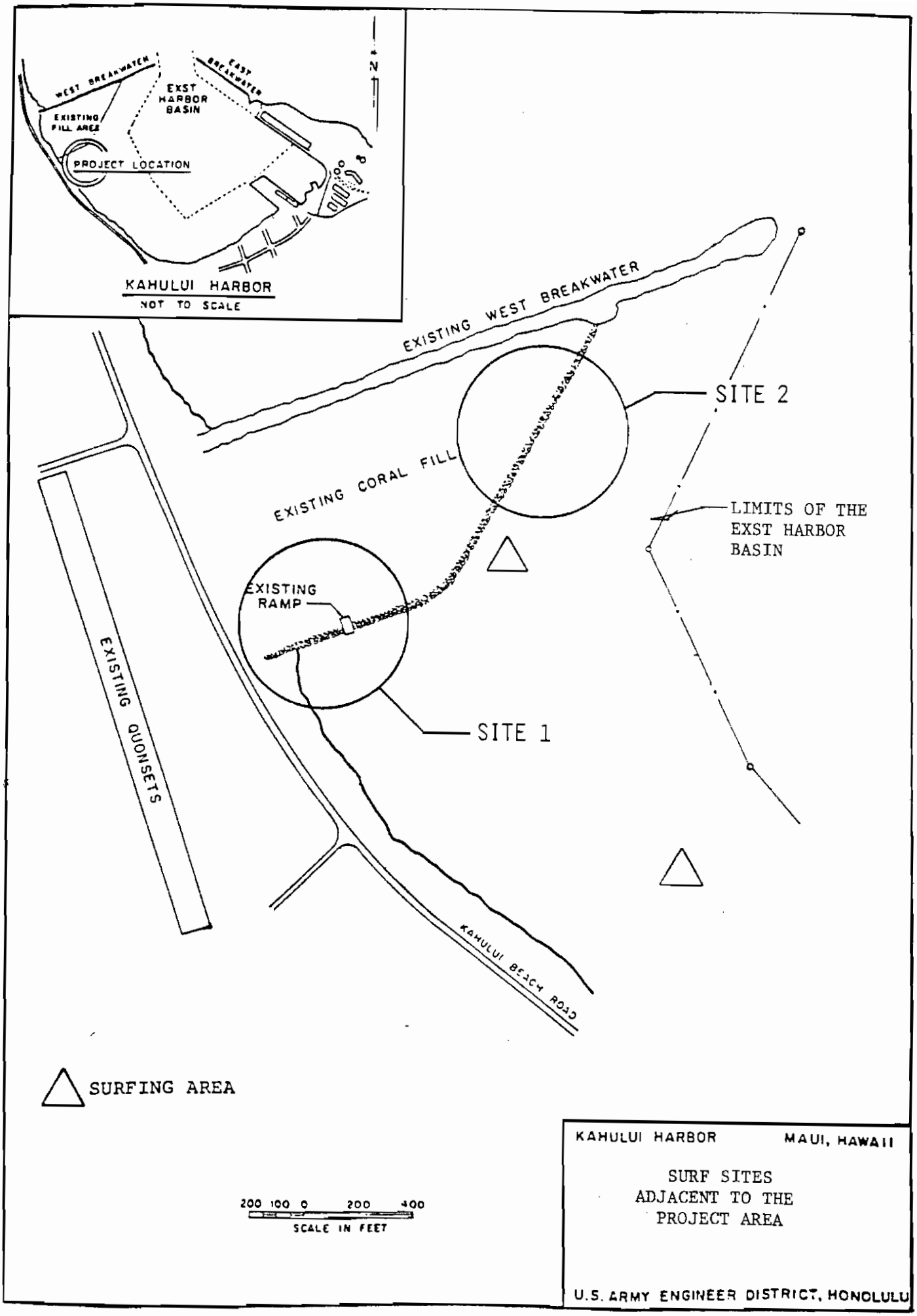

WEST BREAKWATER
EAST BREAKWATER
EXST HARBOR BASIN
EXISTING FILL AREA
PROJECT LOCATION
N
KAHULUI HARBOR
NOT TO SCALE
EXISTING WEST BREAKWATER
SITE 2
EXISTING CORAL FILL
LIMITS OF THE EXST HARBOR BASIN
EXISTING RAMP
SITE 1
EXISTING QUONSETS
KAHULUI BEACH ROAD
SURFING AREA
200 100 0 200 400
SCALE IN FEET
KAHULUI HARBOR MAUI, HAWAII
SURF SITES ADJACENT TO THE PROJECT AREA
U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 8

CHAPTER 3

ALTERNATIVES TO THE PROPOSED ACTION

3.0 **INTRODUCTION.** The 1989 Final Detailed Project Report and FEIS for the Kahului Light-Draft Navigation Improvements, Maui, Hawaii, documents the alternatives analysis process, including plan formulation, preliminary evaluation and screening, detailed analysis of six alternative plans, and finally, the selection of the proposed action. Chapter 3 summarizes the alternatives to the proposed action and briefly describes their impacts. It also discusses the reasons these alternatives were rejected in favor of the proposed action. No changes have been made to the recommended plan other than the inclusion of the State DOT's three-lane launch ramp and concrete catwalks.

3.1 **NO ACTION ALTERNATIVE.** The No Action Alternative would constrain the full potential use of this boating facility and the full use of the ocean's resources in the northern waters off of Maui for commercial fishing. The lack of a full-use boating facility at this site would restrict larger-sized fishing vessels from operating within this facility and would impose constraints on potential local economic growth and employment opportunities in Maui.

3.2 **FEIS Alternative Plan 2A:** Launch Ramp With Moorings. Plan 2A consists of a turning basin 100 feet by 100 feet in area and 8.5 feet deep; a 50-foot-wide entrance channel, 1,030 feet long and 9.5 feet deep; a mooring basin 105 feet by 105 feet in area and 6.5 feet in depth; a revetted mole 50 feet by 120 feet in area, to protect the mooring basin; a 130-foot breakwater structure and a new two-lane boat launch ramp.

3.3 **FEIS Alternative Plan B1:** Launch Ramp. Plan B1 consists of a turning basin 100 feet by 100 feet, 8.5 feet deep excavated into the fill area near the existing ramp; a 50-foot-wide entrance channel, approximately 1,030 feet long and 9.5 feet deep; a 140-foot-long approach channel, 50-foot wide, and 8.5 feet deep; and a rock revetment surrounding the excavated turning basin.

3.4 **FEIS Alternative Plan B2:** Launch Ramp With Moorings. Plan B2 consists of the same features as plan B1 with the addition of a mooring basin 105 feet by 105 feet in area and 6.5 feet deep, excavated into the existing fill area, adjacent to the turning basin.

3.5 **FEIS Alternative Plan C1:** Launch Ramp. Plan C1 consists of a turning basin 100 feet by 100 feet and 8.5 feet deep and a 240-foot-long entrance channel, 50 feet wide and 9.5 feet deep excavated into the west breakwater fill area; a revetment surrounding the excavated entrance channel and turning basin; and a new two-lane boat launch ramp. This plan is located on the fill area close to the harbor entrance.

3.6 **FEIS Alternative Plan C2:** Launch Ramp With Moorings. Plan C2 consists of the same features as plan C1 with the addition of a mooring basin 105 feet by 105 feet in area and 6.5 feet deep, excavated into the existing fill area, adjacent to the turning basin.

3.7 **SELECTION OF THE RECOMMENDED PLAN.** Plans B2 and C2 were not selected because the mooring basins could not be economically or incrementally justified. Plan A1 was selected as the recommended plan over Plans B1 and C1 because this alternative maximized the net national economical development (NED) benefits and was determined to be the most economically feasible alternative.

CHAPTER 4

AFFECTED ENVIRONMENT

4.1 **INTRODUCTION.** The following discussion briefly summarizes the more detailed description of the affected environment contained in the FEIS for Kahului Light-Draft Navigation Improvements.

4.2 **LOCATION.** The proposed Light-Draft navigation improvements within the Kahului deep-draft harbor are located on the northwest side of the harbor at the coral fill area (also known as Kahului Harbor Park) and existing boat launch ramp. The main breakwaters for the deep-draft harbor serves to protect the boat launch facility. The large fill area is available for shoreside facilities development and parking.

4.3 **PHYSICAL CONDITIONS:**

4.3.1 Climate. Kahului has an equable temperature regime, marked seasonal variation of rainfall, persistent surface winds from the northeast quadrant and the rarity of severe storm. The monthly average temperature is 75 degrees between the warmest month, August, and the coldest month, February. Rainfall averages below 20 inches annually with June being the driest month. Hurricanes with winds greater than 75 miles per hour rarely affect the Kahului area; however, tropical storms may pass through close enough to produce heavy rain and strong winds. Humidity at Kahului is moderate to high, with wet season humidities averaging slightly higher than those in the dry season. The natural ventilation of the prevailing winds, however, provide a pleasant climate even during the warmer months.

4.3.2 Natural Hazards. The project area is subject to the infrequent effects of hurricanes, earthquakes and tsunamis.

4.3.3 Air Quality. Normal tradewind patterns in the Kahului area minimize the potential for air quality problems.

During periods of agricultural burning, levels of airborne particulate matter are increased. In addition, the coral fill area adjacent to the project site is a source of dust.

4.3.4 Noise. The Kahului study area is adjacent to the most industrialized portions of Kahului. The deep-draft harbor facilities and activities contribute to a generally high level of ambient noise. Numerous trucks, loaders, cranes, powered ramps and other pieces of mechanical equipment work throughout the day and often during the night when loading or off-loading ships.

4.3.5 Water Quality. Kahului Harbor is classified as Class II waters under the State of Hawaii Department of Health regulations, Title II, Chapter 54 - Water Quality Standards. Kahului is not a true estuary. The harbor is part of the Kahului Bay and is protected by breakwaters. No fresh water streams or significant springs enter the harbor, although there must be some fresh water seepage into the harbor from the basal groundwater body inland. Some storm drains enter the harbor, but the sanitary sewage of the nearby population center enters Kahului Bay outside the harbor.

4.4 BIOLOGICAL RESOURCES

4.4.1 Terrestrial Resources. The existing boat launching facility is situated on an arid, parched coral fill. A few clumps of bunchgrass, stunted pluchea shrubs and exotic weed species are present on either sides of the ramp. No birds or other coastal terrestrial animals occur in the immediate area.

4.4.2 Aquatic Resources. The bottom in the proposed project area is relatively flat consisting of reef hardpan, coral cobbles, shell fragments, gravel and sand. Within and adjacent to the turning basin and entrance channel two species of benthic algae dominate the reef flat community. Thick clumps of *Ulva fasciata* and *Hypnea musciformis* cover most of the bottom. Soft corals are present but do not dominate as they did prior to excavation of the basin and channel in 1989. Other invertebrates include feather duster worms, sea urchins, sea cucumbers, grapsid crabs, nerite snails, limpets and stony corals. The snails, limpets and crabs are associated with the existing basalt boulder groin and revetment. At least fifteen species of common reef fishes occur in the project area, most of which inhabit the groin or are associated with a few large boulders and slabs found along the southern margin of the turning basin.

4.4.3 Threatened and Endangered Species. Two species protected under the Endangered Species Act of 1973, as amended, may be present in or near the project area. The humpback whale (Megaptera novaeangliae) is listed as endangered and is found seasonally within the 100 fathom isobath around all the main Hawaiian Islands from December through May during their seasonal migrations through Hawaiian waters. Although no concentrations of humpback whales have been observed in the waters off Kahului, their presence has been noted during past whale seasons.

Feeding and resting areas, where adult green turtles, Chelonia midas, live the greater portion of their lives during non-breeding periods, are located in coastal waters of both the main islands and the North West Hawaiian Islands (NWHI). Resting and foraging habitats for Chelonia have been documented near the proposed project area fronting the Maui Electric Company powerplant, outside and to the east of Kahului Harbor.

Critical habitat for listed species under the jurisdiction of the National Marine Fisheries Service has not been proposed or designated within or near the project site.

4.5 **ARCHAEOLOGICAL RESOURCES.** An archaeological reconnaissance survey was conducted on July 28-29, 1988 and no cultural resources of significance were reported. There are no known archaeological or historical sites listed on the Hawaii and National Register of Historic Places within the project area. The project area consists of dredged fill material which is unlikely to contain any archaeological structures or remains.

4.6 **RECREATIONAL RESOURCES.** Pole fishing for common reef fish takes place along the entire harbor side of the western breakwater. Mullet, aholehole, manini, kumu and other species are caught by throw and lay net. Pole fishing for ulua and papio is common along the seaward side of the breakwater. The shallow reef flat along the southwest perimeter of the harbor is a popular octopus spearing ground. The area fronting the boat ramp is closed to net fishing except for crab and opai. Swimming, snorkeling, and canoe paddling along the south shore are also popular activities within the protected harbor. According to the 1971 Statewide Surfing Site Survey, there are four surfing sites within the harbor area. The two surfing sites within the study area are shown on Figure 8. Occasionally, during the winter months, large north swells generate small to medium waves,

suitable for surfing at the two sites noted above. A launch ramp facility along the south eastern boundary of the park provides access for trailored recreational boats to the harbor and to fishing grounds along the northern coast of Maui.

4.7 **WATER RESOURCES.** The project area is served by the Central Maui water system. The system pulls water from the Iao Aquifer from which the state Commission on Water Resource Management has set a maximum safe yield of 20 million gallons-per-day (MGD). The rolling annual average pumpage now exceeds 19 MGD. In both the Haiku and North Waihee Aquifers, development efforts are underway.

4.8 **LAND USE.** The State Land Use Plan classifies the project site as urban. All of the filled land on the west side of the Harbor is owned by the State. The General Plan designates the area as park use and Maui County Department of Parks and Recreation is presently developing it according to their park master plan for the area.

CHAPTER 5

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED PROJECT

5.1 EFFECTS ON PHYSICAL CONDITIONS:

5.1.1 Climate. The project as proposed will not have an effect on the climate of the area.

5.1.2 Natural Hazards. The proposed project will have no effect on the natural hazards of the area, but the increased number of boats and ancillary facilities resulting from this project has the potential to increase the dollar value of damages resulting from natural disasters if they occur in this area.

5.1.3 Air Quality. Construction activities will increase dust and vehicle exhaust emissions in the project area; however, these effects will be temporary and only affect the near vicinity of the project. The contractor will be required to conform with State air quality standards prescribed in chapter 11-60.1, Hawaii Administrative Rules, Section # 11-60.1-33, during construction. There is also a potential odor problem from the smell of drying and decaying algae within the dredged material stockpiles. To minimize the potential for a persistent odor problem, stockpiles will be attenuated. Note: The area from the road to boat launch ramp has been paved with asphalt.

5.1.4 Noise. Noise levels will be temporarily increased during construction of the project by the operation of heavy construction equipment. Some blasting may be required at the mouth of the entrance channel, and would contribute intermittent loud noise for the duration of the blasting work. There may be a slight increase in noise after project completion due to the increase in number of boats which will use the launch facility.

5.1.5 Water Quality. Several components of the proposed plan of improvement would affect water quality in the project area during construction of the project. These include dredging to deepen the turning basin and entrance channel, placement of

fill material and armor stone for the breakwater, placement of reinforced concrete piles to support the catwalks and placement of bedding material, precast slabs and toe for the three-lane launch ramp where they extend below the surface to (-) 8.5 feet MLLW. Temporary nearshore turbidity would result due to these activities. Dredging would result in the most significant contribution, while the increase in turbidity from the other construction activities would be relatively minor. The discharge of basalt rock, precast-concrete piles and slabs would not significantly degrade water quality or the aquatic environment. Evaluation of the proposed discharge of basalt rock and aggregate bedding material using Clean Water Act Section 404(b)(1) guidelines (Appendix C) has determined that the proposed action would not likely violate any applicable state water quality criteria, with the exception of turbidity. Temporary nearshore turbidity would result primarily from resuspension of existing on-site sediments during dredging and is not avoidable; however, the deployment of silt containment devices and inclusion of other appropriate and practicable conditions to control turbidity will minimize adverse effects to the affected aquatic ecosystem. The proposed discharge of clean basalt rock and precast-concrete piles and slabs would not have any significant effect on water chemistry, salinity, odor, taste, dissolved gas levels, temperature, nutrients, or eutrophication. None of the materials to be discharged are suspected of containing any contaminants. No adverse long-term effects on water quality or human use of the aquatic environment are expected to result from implementation of the proposed action.

To evaluate the adequacy of the pollution control measures and to document compliance with state water quality criteria, the Corps will monitor water quality. Monitoring will be conducted prior to construction, during construction, and following construction. Construction activity will be temporarily suspended if monitoring indicates that adverse impacts to receiving waters are occurring as a result of construction. The construction contractor will be required to suspend the operation or operations causing the excessive turbidity levels until the condition is corrected. Additional control measures will be instituted should the existing measures prove insufficient.

5.2 BIOLOGICAL RESOURCES

5.2.1 Terrestrial Resources. The project is located at an existing launch ramp facility on land created with dredged

material from the deep-draft harbor. No adverse impacts to the barren terrestrial area are anticipated. Dredged material from the project will be deposited at the adjacent Kahului Harbor Park and incorporated in the park landscaping plan.

5.2.2 Marine Resources. Deepening of the existing turning basin and entrance channel would destroy most of the slow moving and sessile benthic biota in the short term. Long term effects are expected to be moderate to slight based on the anticipated re-establishment of the benthic community on the bottom of the channel and basin, which is presently dominated by two species of algae. Analysis of subsurface borings taken along the turning basin and channel alignments indicates that the material to be excavated is moderately hard cemented limestone and calcareous sandstone, material amenable to conventional dredging techniques. However, based on recent information from the contractor that performed the dredging of the State DOT improvements in 1989, the reef material along the seaward 100-meter segment of the entrance channel is quite dense and hard, possibly requiring blasting. If blasting does become necessary, the construction contractor would be required to submit a blasting plan which must be approved by the Corps of Engineers Contracting Officer. The blasting plan must contain the details of the blasting operation, including but not limited to type of explosive, charge size and method of detonation. Blasting would destroy benthic organisms in the immediate vicinity of the blast and fishes possibly as far as 30 to 50 meters distant. Organisms within the footprint of the 130-foot-long breakwater will be destroyed or displaced during construction. Over the long term the breakwater will provide substrate and shelter for a variety of algae, invertebrates and fishes, which will compensate for the initial adverse effects on marine resources. Similarly, the four precast concrete piles supporting the 180-foot-long catwalk would have minor impact on the bottom community, while providing new surface area for establishment of a piling community.

5.2.3 Endangered and Threatened Species. Construction activities anticipated to implement the proposed plan of improvement would have no effect on endangered species. However, the possibility that limited blasting at the mouth of the entrance channel may become necessary does exist. Shock waves generated by underwater explosive detonations can injure or kill a variety of marine organisms occurring within close proximity of the blast. For this reason, the Corps approved blasting plan will require that the contractor sand bag each explosive charge to

reduce the propagation of shock waves. In addition, the contractor will be required to conduct a visual survey of the harbor prior to blasting to ascertain that no humpback whales are present within the breakwater structure and that no green sea turtles are within a 300-meter radius of the blast site. Blasting will be postponed until these conditions are met.

5.3 **ARCHAEOLOGICAL RESOURCES.** The State Historic Preservation Officer, in a letter dated September 26, 1995, expressed concurrence with the Corps' determination, that there are no known archaeological or historical sites within the project area and that the proposed project, therefore, would have "no effect" on archaeological or historic resources.

5.4 **RECREATIONAL RESOURCES.** Some disruption of recreational activities will occur during construction of the project. The existing boat launching ramp will be closed during part of the construction period. Shoreline fishing in the immediate vicinity of construction activity will be affected. The seasonal "runs" of two important recreational fisheries, oama (Mulloides flavolineatus) and hahalalu (Selar crumenopthalmus), occur throughout the harbor. Recreational fishing for those species, likewise, takes place in many locations along the periphery of the harbor. Temporary closure of a small segment of the harbor shoreline would not have a significant adverse impact on recreational fishing. The periods during which these two species occur within the harbor are not concurrent. Moreover, the timing of these runs varies considerably from year to year. Consequently, scheduling construction activities such as dredging to avoid the seasonal fish runs would be impractical if not infeasible. The completed project would accommodate large boats up to 30 feet in length and allow twice the number of launches and retrievals, as well as increase protection and safety during launching and recovery operations.

5.5 **WATER RESOURCES.** Based on information obtained from the State Department of Transportation, Harbors Division, current water usage at the facility averages 1,100 gallons per day. The project does not include any additional improvements such as restrooms and landscaping that would require the use of additional water. The existing 1-1/2 inch lateral which services the washdown facility is considered more than adequate for the present and projected future use of the facility, hence no improvements to the existing water system are presently anticipated.

5.6 **LAND USE.** The project would have no effect on land use. The existing boat facility is part of the State DLNR Division of Boating and Recreation system. No changes in zoning or use of adjacent lands are expected to result from the proposed improvements to the boat launching facility.

5.7 **MITIGATION.** During construction, the construction contractor will be required to adhere to applicable Federal, State of Hawaii and Maui County laws and regulations. This is a standard requirement in all Corps and State of Hawaii construction contract specifications. The contractor will be required to develop an environmental protection plan which will detail the measures to be used, based on the construction methods to be used, to comply with the regulations. This requirement for an environmental protection plan is standard in Corps construction contracts. The plan must be approved by the Corps Contracting Officer, who is responsible for insuring that the contract specifications and the contractor's required environmental protection plan will incorporate the following mitigative measures:

5.7.1 In order to prevent excessive sediment transport into areas of significant living corals and other reef resources, construction-related turbidity will be confined to the immediate vicinity of construction through the use of effective silt containment devices.

5.7.2 In-water construction will be curtailed during adverse sea conditions.

5.7.3 All necessary temporary storage of construction-related materials will be above the influence of the tides.

5.7.4 The dredged material will be disposed of on land and contained behind berms above the influence of the tides. Only clean runoff will be allowed to return to the ocean.

5.7.5 All construction-related materials will be free of pollutants.

5.7.6 Construction wastes, petroleum products, human wastes, and debris will not be permitted to fall, flow or leach into the ocean.

5.7.7 If blasting is necessary, the charges will be sand-bagged to minimize incidental fish kills. No blasting will be conducted if humpback whales are observed within the breakwater structures of the Kahului Deep-Draft Harbor. No blasting will be conducted if green sea turtles are observed within 300 meters of the blast site.

5.7.8 Dredged material stockpiles will be attenuated to facilitate exposure of algae and other biogenic materials to the sun and air to allow rapid drying, thus minimizing anaerobic decomposition and the unpleasant odoriferous biproducts associated with it.

CHAPTER 6

CONCLUSIONS

Neither the proposed project nor the environmental conditions in the project area have changed substantially since the FEIS was circulated. All required coordination has been completed. There are no significant adverse impacts likely to result from construction or operation and maintenance of the project. The construction documents shall contain provisions for pertinent environmental controls and mitigation measures to insure compliance with Federal, State and local environmental requirements by the contractor. Therefore, the proposed Kahului Light-Draft Navigation Improvements Project is not considered a major action having significant effects on the quality of the human environment. A supplemental Environmental Impact Statement is not required.

CHAPTER 7

REQUIRED COORDINATION

PUBLIC REVIEW:

8.1 The Draft EA and FONSI were circulated for review to concerned agencies, organizations and interested public in July 1995. At the close of the 30-day comment period five responses had been received. Comment letters are provided in Appendix A.

8.2 A list of Agencies and Organizations receiving copies of the DEA/FONSI is provided in Appendix B.

8.3 The following paragraphs list the status of coordination with relevant resources agencies. Coordination letters are provided in Appendix A.

8.3.1 Department of Commerce, National Marine Fisheries Service. Coordination letters (the most recent dated 14 May 1996) have established that there are no project impacts on protected species.

8.3.2 Department of Interior, Fish and Wildlife Service. A Fish and Wildlife Coordination Act (FWCA) report was completed for the proposed project in July 1989. Neither the proposed project nor conditions at the project site have changed since that time. The Fish and Wildlife Service letter dated August 28, 1995, recommends that we coordinate construction activities with the State of Hawaii Division of Aquatic Resources (DAR) to avoid seasonal runs of two recreationally important fishes. Consultation with DAR staff established that the timing of the runs varies considerably from year to year and that they do not take place concurrently, making it extremely difficult to schedule construction activities to avoid these events. It was the opinion of the DAR staff on Maui that construction activities would not significantly restrict recreational fishing within the harbor.

8.3.3 Hawaii Coastal Zone Management (CZM) Program. A CZM Federal consistency determination for the original project was

submitted in 1988 by the State Department of Transportation. The office of State Planning concurred with their findings of consistency by letter dated December 7, 1988. Because the proposed project and project site remain substantially unchanged, the Corps requested in a letter, dated May 2, 1996, that the original determination be considered as fulfilling the CZM consistency review requirements. That request is presently under consideration pending review of the final EA.

8.3.4 Department of Land and Natural Resources, State Historic Preservation Division. In their letter dated September 26, 1995, the State Historic Preservation Division stated that the proposed undertakings would have "no effect" on significant historic sites. This finding fulfills Federal requirements under Section 106 of the National Historic Preservation Act.

8.3.5 State of Hawaii Department of Health, Clean Water Branch. Public Notice of Compliance with Section 404 of the Clean Water Act was published in December 1995. An updated Evaluation of the Effects of the Discharge of Dredged or Fill Material into Waters of the United States using 404(b)(1) Guidelines has been completed (Appendix C). A Section 401 Water Quality Certification application with accompanying documents including project plans and specifications, scope of work for water quality monitoring, Best Management Practices Plan and Section 404(b)(1) Evaluation will be submitted to DOH for their action in September 1996. Receipt of Water Quality Certification from DOH will complete Federal and State Clean Water Act requirements.

APPENDIX A

CORRESPONDENCE

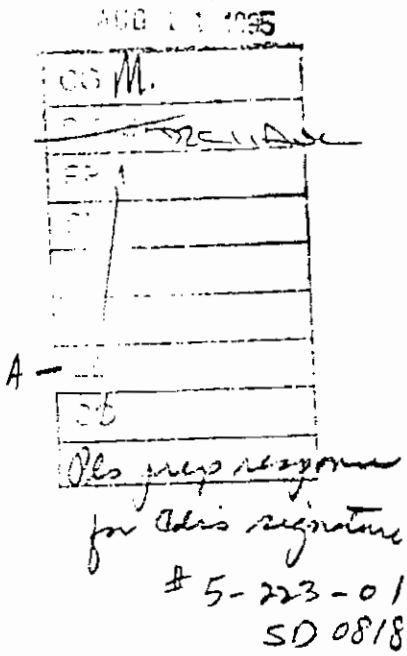
PATSY T. MINK
SECOND DISTRICT, HAWAII

WASHINGTON OFFICE:
2135 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–1102
(202) 225–4906
FAX: (202) 225–4987

DISTRICT OFFICE:
5104 PRINCE KUHIO FEDERAL BUILDING
P.O. BOX 50124
HONOLULU, HI 96850–4977
(808) 541–1986
FAX: (808) 538–0233

Congress of the United States
House of Representatives
Washington, DC 20515–1102

COMMITTEE ON STEERING AND POLICY
COMMITTEE ON BUDGET
COMMITTEE ON EDUCATION AND ECONOMIC OPPORTUNITY
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT
(on leave)



August 9, 1995

Ray H. Jyo
Director Of Engineering
Department Of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858

Dear Mr. Jyo:

RE: Kahului Light-Draft Navigation Improvements
Environmental Assessment

Thank you for the copy of the Environmental Assessment performed on the Kahului Light-Draft Navigation Improvements project. I am writing to inquire how, if at all, this EA addressed impact on canoes or canoe access of the proposed navigation facilities.

Will canoe use of the new three-lane concrete launch ramp be allowed? Will the project hinder at all canoe activities from Kahului Harbor?

Your immediate attention to my inquiry is deeply appreciated.

Very truly yours,

PATSY T. MINK
Member of Congress

2/ 9N

3

August 22, 1995

Planning Division

Honorable Patsy T. Mink
House of Representatives
2135 Rayburn House Office Building
Washington, DC 20515

Dear Ms. Mink:

I am responding to your letter of August 9, 1995 addressed to Mr. Ray Jyo. The U.S. Army Corps of Engineers completed a Detailed Project Report (DPR) and Environmental Impact Statement (EIS) for Light-Draft Navigation Improvements at Kahului Harbor which was circulated to the public in July 1989. The study was accomplished under the authority of Section 107 of the River and Harbor Act of 1960, as amended.

The EIS did identify canoeing as one of several recreational activities taking place within the harbor. Although kayaks and one-man outrigger canoes do use the harbor, the majority of activity centers around the six-man Hawaiian outrigger canoe competition. The present staging area for Hawaiian outrigger canoe club activities at Kahului is from a site located at the end of Puunene Avenue, at the opposite side of the harbor from the proposed project. Canoe crews practice throughout most of the harbor but usually confine their activities to the south eastern side of the bay. Construction and operation of the proposed harbor improvements on the west side of the harbor are not expected to disrupt canoe club or other recreational canoe and kayak activities taking place in the harbor.

Canoes as well as trailored boats and other watercraft will be allowed to use the new three-lane launch ramp. However, Hawaiian outrigger canoes are not normally launched from trailers. They are transported to a racing or practice site on trailers,

off-loaded and rigged. The canoes are then carried into the water by crew members, usually across a beach. This could be accomplished using a boat launching ramp, but because of its steep slope and often slippery condition, a ramp could present hazards and would not be a preferred option.

The environmental assessment which you recently reviewed concluded that there have been no substantial changes in the proposed project and that the environmental conditions in the project area(including recreational canoeing activities) have not changed substantially since the EIS was circulated in 1989.

I hope the information provided satisfies your concerns about the possible project impacts on recreational canoeing within Kahului Harbor.

Sincerely,

Ralph H. Graves
Lieutenant Colonel, U.S. Army
District Engineer

Copy Furnished:

Honorable Patsy T. Mink
Representative in Congress
Prince Kuhio Federal Building, Box 50124
Honolulu, Hawaii 96850

LINDA CROCKETT LINGLE
Mayor

RICHARD H. HAAKE
Managing Director
Telephone: 243-7855

OFFICE OF THE MANAGING DIRECTOR
COUNTY OF MAUI
WAILUKU, MAUI, HAWAII 96793

August 10, 1995

District Engineer
U.S. Army Corps of Engineers, Honolulu District
Attention: CEPOD-ED-PV/Mr. Moncrief
Building 230
Fort Shafter, Hawaii 96858-5440

Re: Draft Finding of No Significant Impact (FONSI)
Draft Environmental Assessment (EA) for
Kahului Light-Draft Navigation Improvements Project

District Engineer:

We have reviewed the draft FONSI and draft EA, and conclude that there will be no significant adverse impact occurring as a result of construction, or operation and maintenance of the project. We have no comments at this time.

Thank you for this opportunity to comment on this matter. Please call George Kaya, Executive Assistant to the Mayor, at 243-7855, if you should have any questions.

Sincerely,

RICHARD H. HAAKE
Managing Director, County of Maui

cc: David Blane, Director, Department of Planning
Charmaine Tavares, Director, Department of Parks and Recreation

C:\letter\1338.rhh

BOARD OF WATER SUPPLY
COUNTY OF MAUI
P.O. BOX 1109
WAILUKU, MAUI, HAWAII 96793-7109

16 August 1995

District Engineer
U.S. Army Corp Engineer, Honolulu District
Attention: CEPOD-ED-PV/ Mr. Moncrief
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Mr. Moncrief:

Subject: Proposed Kahului Light-Draft Navigation Improvements at TMK:3-7-01:23, Kahului Harbor; Comments by 8/28/95 on Draft FONSI and Draft EA per request

Mahalo for providing the Board of Water Supply with the opportunity and the materials to review the subject finding and assessment. We provide information as follows:

a. The launch site is served by one existing 5/8" meter (Service No. 904-62028). The service holder is the Department of Transportation. The meter was installed under the Agreement For Water Service Not in Compliance with Standards, Doc No. 94-159280, entered on 20 September 1994 by BWS and DLNR.

b. Certified domestic, irrigation calculations, or both are required at the time of building permit. The Board requires an upgraded water meter if the calculations demonstrate a demand which is greater than what the existing meter acceptably serves. No guarantee of additional water, however, is granted or implied as a result of these comments, the subject finding, or the acceptance of the EA. Water availability is determined at the time of application for service.

c. The aquifer closes in on its maximum safe yield. The project area is served by the Central Maui water system. The system pulls water from the Iao Aquifer from which the state Commission on Water Resource Management has set a maximum safe yield of 20 million gallons-per-day (gpd). The rolling annual average pumpage now exceeds 19 million gpd. In both the Haiku and North Waihee Aquifers, development efforts are underway. Nevertheless, the completion dates are uncertain.

In addition, we suggest that discussions of the following topics be included in the document:

1. Plans, if any, for additional structures or facilities involving the use of water, such as restrooms, boat wash facilities, landscape, etc.

2. Current water use in gpd of the existing facility

3. Anticipated impacts on and estimates of water use related to the anticipated increases in launch traffic, boating washing, accessory uses, etc.

You may contact the Water Resources Planning Division at tel:808-243-7835 or fax:808-243-7833, if you have comments or further questions.

Sincerely,

MAUI COUNTY BOARD OF WATER SUPPLY

for David R. Craddick, Director

DDS
bws wrp c:\dds\kah'light.boat
project file

BENJAMIN CAYETANO
GOVERNOR

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
[redacted]
GLENN M. OKIMOTO
JERRY MATSUDA

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
79 SO. NIMITZ HWY • HONOLULU, HAWAII 96813-4898

IN REPLY REFER TO:

September 28, 1995

TO: Pat Tom
Project Engineer
U.S. Army Corps of Engineers

FROM: Nap Agraan

SUBJECT: Kahului Light-Draft Navigational Improvements, Maui
Job H. C. 4171

In response to the comments/inquiry from the Board of Water Supply, Maui, regarding the Draft Environmental Assessment, we provide the following:

1. The subject project does not include any additional improvements such as restroom or landscaping which will require the use of additional water. No improvements will be done for the existing water system. The existing 1-1/2" lateral which service the washdown facility, is more than adequate for the present and future users of the facility.

2. This being a State project, we will request an exemption for a building permit from the County of Maui in accordance with the Maui County Code 16.26.301 B, attached.

3. Current water usage at the facility average at 1,100 gallons per day. This data was based from a meter reading taken from June 21, 1995 to August 24, 1995 with a total water consumption of 72,000 gallons for that period..

Any questions, please call me at 587-1955.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS OFFICE
500 ALA MOANA BLVD, SUITE 3-580
HONOLULU, HI 96813
tel:(808) 541-3441 fax:(808) 541-3470

TAKE PRIDE IN AMERICA

29 AUG 1995
HED
DHED
SECY
CLR-TYP
1/2-D
LAUG 29 1995

In Reply Refer To: MEM

AUG 28 1995

Lt. Colonel Ralph H. Graves
District Engineer
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440

Re: Draft Supplemental Environmental Assessment and Draft Finding of No Significant Impact for Kahului Light-Draft Navigation Improvements at Kahului, Maui, Hawaii

Dear Lieutenant Colonel Graves:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for light-draft navigation improvements at Kahului Deep-Draft Harbor on the island of Maui. The proposed project is sponsored by the U.S. Army Corps of Engineers (Corps) and the Division of Boating and Ocean Recreation (DOBOR) of the Hawaii Department of Land and Natural Resources. This letter has been prepared under the authority of and in accordance with provisions of the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat. 852], as amended, the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 *et seq.*; 48 Stat. 401], as amended (FWCA), the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended, and other authorities mandating Service concern for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

The project sponsors propose to construct improvements at the existing small-boat facility within Kahului Deep-Draft Harbor. The Proposed Action presented in the Draft SEA includes constructing (1) a turning basin 0.1 hectare (ha) [0.2 acre (ac)] large and 2.6 meters (m) [8.5 feet (ft)] deep; (2) an entrance channel 0.5 ha (1.2 ac) large and 2.9 m (9.5 ft) deep; (3) a rubble-mound breakwater 39.6 m (130.0 ft) long and with a crest elevation of 2.7 m (9.0 ft); and (4) a three-lane concrete launch ramp with 54.9 m (180.0 ft) of new concrete catwalk. The project purpose is to provide improved boating facilities within the Kahului-Wailuku area where the demand for commercial light-draft facilities is currently the greatest. The project is meant to solve specific problems at the existing small-boat facility where the current launch ramp is too small and steep, the entrance channel and turning basin are too shallow and hazardous, and the facility is unprotected from tradewind exposure.

Draft SEA and FONSI
Kahului Light-Draft Navigation Improvements
Kahului, Maui, Hawaii

Prior coordination with the Corps on the proposed project has included Service submission of a Planning Aid Letter on August 3, 1984; a FWCA report on August 23, 1985; a Revised FWCA report on August 25, 1988; and a Final Revised FWCA report on June 9, 1989. Also, the Service has reviewed and commented on the July 1989 Final Detailed Project Report and Environmental Impact Statement (EIS) for the proposed project.

The Proposed Action presented in the Draft SEA is identical to the one that was presented in the Final EIS with the exception that the two-lane launch ramp has been expanded to a three-lane ramp with a catwalk. The Service does not object to this modification. With one exception, the Service's project-related mitigation recommendations have been incorporated into the project and are identified in the Draft SEA. We continue to recommend that project dredging and blasting be scheduled in coordination with the Hawaii Division of Aquatic Resources to avoid the seasonal runs of juvenile yellow-stripe goatfish (oama), *Mulloides flavolineatus*, and juvenile big-eyed scad (hahalalu), *Selar crumenopthalmus*.

The Service appreciates the opportunity to comment on the Draft SEA for the proposed project. If you have any questions regarding these comments, please contact Fish and Wildlife Biologist Michael Molina at 808/541-3441.

Sincerely,

Brooks Harper

Brooks Harper
Field Supervisor
Ecological Services

cc: NMFS-PAO, Honolulu
EPA-Region IX, San Francisco
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii

BENJAMIN J. CAYETANO
Governor of Hawaii

Chairperson
MICHAEL D. WILSON
Board of Land and Natural Resources

Deputy Director
GILBERT COLOMA-AGARAN

Aquaculture Development
Aquatic Resources
Boating and Ocean Recreation
Bureau of Conveyances
Conservation and Environmental Affairs
Conservation and Resources Enforcement
Forestry and Wildlife
Historic Preservation
Land Management
State Parks
Water and Land Development

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. Box 621
Honolulu, Hawaii 96809

REF:OCEA:SKK

FILE NO.: 96-043
DOC. NO.: 5455

13 SEP 1995

CCC-TYP

District Engineer
U.S. Army Corps of Engineers, Honolulu District
Building 230
Fort Shafter, Hawaii 96858-5440

Attn: CEPOD-ED-PV/Mr. Moncrief

SEP 12 1995

Dear Mr. Moncrief:

SUBJECT: Federal Section 404 Public Notice and Draft Environmental Assessment for Kahului Light-Draft Navigation Improvements Project, Kahului, Maui

We have reviewed the draft environmental assessment for the Kahului Light-Draft navigation improvements project and have the following comments.

The Division of Boating and Ocean Recreation indicates that this project is a joint project undertaken with DOBOR. The Division indicates that they have been working with the Corps of Engineers on this since the initial planning phase, and their concerns have already been addressed in this Draft EA. DOBOR concurs with this document as written.

The Division of Aquatic Resources comments that the applicant should employ appropriate mitigative measures to minimize adverse impacts to the nearshore marine environment to the extent possible.

If you have any questions regarding this response, please call Roy Schaefer of our Office of Conservation and Environmental Affairs at 587-0377.

Aloha,

Gilbert S. Coloma-Agaran
for MICHAEL D. WILSON

PATSY T. MINK
SECOND DISTRICT, HAWAII

WASHINGTON OFFICE:
2135 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–1102
(202) 225–4906
FAX: (202) 225–4987

DISTRICT OFFICE:
5104 PRINCE KUHIO FEDERAL BUILDING
P.O. BOX 50124
HONOLULU, HI 96850–4977
(808) 541–1986
FAX: (808) 538–0233

Congress of the United States
House of Representatives
Washington, DC 20515–1102

COMMITTEE ON STEERING AND POLICY
COMMITTEE ON BUDGET
COMMITTEE ON EDUCATION AND ECONOMIC OPPORTUNITY
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT
(on leave)

March 8, 1996

Col. Robin R. Cababa
Acting Commander
U.S. Army Corps Of Engineers
Pacific Ocean Division
Building 230
Fort Shafter, Hawaii 96858

Dear Colonel Cababa:

RE: Kahului Small Boat Harbor Improvements.

I have been advised that funding for the long awaited Kahului Light-Draft Navigation Improvements project has been delayed by the Corps of Engineers. Please advise regarding the status of this project.

The Maui North shore community has been looking forward to the completion of these small boat harbor facilities. The initial study for a commercial fishing facility within the existing Kahului deep-draft harbor was completed in 1983.

I urge you to take the necessary steps to allow the Kahului Light-Draft Navigation Improvements project to proceed.

Your immediate attention is deeply appreciated.

Very truly yours,

PATSY T. MINK
Member of Congress

March 20, 1996

Planning and Operations Division

Honorable Patsy T. Mink
House of Representatives
2135 Rayburn House Office Building
Washington, DC 20515

Dear Ms. Mink:

Thank you for your letter of March 8, 1996, addressed to Colonel Robin Cababa, Acting Commander of the Pacific Ocean Division, noting your concern about the implementation delay for the Kahului Light Draft Navigation project.

The fiscal year 1996 appropriation for design and construction of the Kahului Light Draft Navigation project was severely decreased by Congress during appropriation deliberations. This resulted in the Corps of Engineers having to cease work on harbor projects, nationwide, which were not already under construction.

The Corps of Engineers has been able to obtain a reinstatement of funds from Congress that allowed a restart of this program. Additional funding has been obtained to continue preconstruction engineering and design for the Kahului project. Our preliminary schedule is for the construction contract to be awarded in September 1997.

edp
PM12M.doc

If you have any questions, please contact Mr. Paul Mizue, Acting Chief, Planning and Operations Division, at (808) 438-8880. Thank you for your continued support of our water resources program.

Sincerely,

Ralph H. Graves
Lieutenant Colonel, U.S. Army
District Engineer

Copy Furnished:

Honorable Patsy T. Mink
Representative in Congress
Prince Kuhio Federal Building, Box 50124
Honolulu, Hawaii 96850

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

JOHN P. KEPPELER II

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

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

September 26, 1995

Mr. Ray H. Jyo, Director of Engineering
Planning Division,
Department of the Army
U.S. Army Engineering District
Fort Shafter, Hawaii 96858-5440

LOG NO: 14983
DOC NO: 9509SC20

Dear Mr. Jyo:

SUBJECT: **National Historic Preservation Act, Section 106 Compliance - Proposed Light-Draft Navigation Improvements at Kahului Harbor, Kahului, Wailuku District, Maui**
TMK: 3-7-10

Thank you for the opportunity to comment on the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed light-draft navigation improvements to be made at Kahului Harbor, Kahului, Maui. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the subject area. Our comments are late, and we apologize.

We have no record of historic sites on this parcel. Since the area to be modified consists of coral fill deposited during earlier construction work at the harbor, it is highly unlikely that any significant historic sites are present. Therefore, we believe that the proposed undertakings will have "no effect" on significant historic sites.

Should you have any questions, please feel free to call Sara Collins at 587-0013.

Aloha,

DON HIBBARD, Administrator, and
Deputy State Historic Preservation Officer

SC:jen

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIIKE
DIRECTOR OF HEALTH

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

In reply, please refer to:

September 28, 1995 95-137/epo

Mr. Ray H. Jyo, P.E.
Director of Engineering
U.S. Army Corps of Engineers, Honolulu District
Building 230
Fort Shafter, Hawaii 96858-5440

Attention: CEPOD-ED-PV/Mr. Moncrief

Dear Mr. Jyo:

Subject: Draft Finding of No Significant Impact (FONSI)
Draft Environmental Assessment
Kahului Light-Draft Navigation Improvements
Kahului, Maui

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

Water Pollution

1. Comments on Public Notice No. CW95-0004, Paragraph 9.b.

   a. The Department of Health's (DOH) former Environmental Protection and Health Services Division has become two divisions; the Environmental Management Division (EMD) and the Environmental Health Services Division. The Clean Water Branch (CWB) is in the EMD.

   b. The basis for the DOH not requiring a Section 401 Water Quality Certification (WQC) for this project is that we are not required to do so unless a federal license or permit is required. Since this is an U.S. Army Corps of Engineers project and they do not issue a Section 404 permit to themselves, the DOH is not issuing a 401 WQC. However, pursuant to Section 404(t)of the Clean Water Act (CWA) the Honolulu Engineer District must submit all project related information to the CWB for review and comment.

   c. Item 12 of the Public Notice (PN) incorrectly cited the PN No. as CW95-0003.

2. Comments on the Draft Environmental Assessment (DEA):

a. Based on the newly proposed scope of work, there appear to be significant changes planned, but the potential impact of these changes was not assessed:

	New Proposal	Previous
Turning Basin dredged to	100′ X 100′ -8.5′ MLLW	100′ X 120′ -6.0′ MLLW
Entrance Channel dredged to	1,030′ X 50′ -9.5′ MLLW	700′ X 60′ -6.0′ MLLW
Extend Existing Boat Ramp	N/A	12′ to attain -5.0′ toe
New Boat Washdown Area	N/A	Yes
New Breakwater	130′	N/A
New Launching Ramp	3-Lane	N/A
New Concrete Catwalk	180′	N/A

In addition, there is no Section 404(b)(1) "Guideline Evaluation" to support that the newly proposed project will comply with CWA §404(b)(1) requirements.

b. For all construction projects, the applicant should first consider avoiding the placement of fill material or dredged spoils into State waters. If the avoidance is impractical or impossible, then the alternative with the least environmental impact with the appropriate mitigative measures should be considered. However, this was not discussed.

c. Kahului Bay is identified by the DOH as water quality limited segment for: Total Kjeldahl Nitrogen, Ortho-Phosphorus, Suspended Solids, and Turbidity. Major sources contributing to these violations are identified as industrial, commercial, urban, and storm water runoff. The DEA failed to discuss how the proposed construction and operation activities will not contribute or intensify the water quality violations.

There is no justification to support the statement contained in the Public Notice, Item 5, Impacts of the Proposed Action on the Environment, on page 3, third paragraph, last sentence, which states "No adverse long-term effects on water quality or human use of the aquatic environment are expected to result from implementation of the proposed action."

d. The DEA should also address the potential adverse impact to the marine ecosystem, including the impact to the coral along the entrance channel and at the protected turning basin, as identif on Page 2, Item 1.2.

If you have any questions on this matter, please contact Mr. Ed Chen of the CWB at 586-4309.

Potential Odor Problems

As mentioned in the EA, the dredged material would be stockpiled on top of the existing west breakwater fill area for future use in creating landscaped berms as part of the Kahului Harbor Park Master Plan. Due to the nature of the project and the constraints that are attached to it, there is a significant potential for nuisance odors to become a problem due to the great abundance of algae in the area. If large material stockpiles are created, there is a possibility that the material concentrated in the center may not be exposed to the sun and air to dry. If this is the case, the odors may intensify and persist.

Potential fugitive Dust Concerns

In addition, since the dredged material requires truck transport to the west breakwater fill area, a significant potential exists for fugitive dust to be generated and dispersed by the truck traffic on the fill material and the strong trade winds dispersing it. Therefore, construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules, Section §11-60.1-33.

The contractor should provide adequate means to control dust from the breakwater fill and road areas during the various phases of construction activities.

Some of these means include:

a. planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing material transfer points and onsite

vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

b. providing an adequate water source at site prior to startup of construction activities;

c. landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;

d. control of dust from shoulders, project entrances, and access roads;

e. providing adequate dust control measures during weekends, after hours, and prior to daily startup of construction activities; and

f. control of dust from debris being hauled away from the project site.

If you have any questions regarding potential odors or fugitive dust, please contact Mr. Timothy Carvalho of the Clean Air Branch at 586-4200.

Sincerely,

Lawrence Miike
Director of Health

c: CWB
CAB

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

July 15, 1996

Planning and Operations Division

Lawrence Miike, M.D.
Director
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Miike:

I am providing the following responses to your comments on our public notice and our draft environmental assessment and finding of no significant impact (EA/FONSI) for the Kahului Light-Draft Navigation Improvements, file number 95-137.

a. Response to Comment 1.a: Noted.

b. Response to Comment 1.b: Project related information will be submitted to the Clean Water Branch for review and comment in accordance with Section 401 of the Clean Water Act.

c. Response to Comment 1.c: Noted.

d. Response to Comment 2.a: The interim improvements to the Kahului launching facilities provided by the State Department of Transportation in 1989 (which you summarize in your table under "Previous") were independent of the Corps' Kahului Light Draft Navigation Improvements project. The preferred alternative described in our Final Detailed Project Report (DPR) and Environmental Impact Statement (EIS), July 1989, is the plan of improvement addressed and updated in our current draft EA. The project features of the 1989 plan are identical to the plan currently proposed, with the exception of a three lane launch ramp instead of two lanes and the addition of two new concrete catwalks measuring 60 feet and 120 feet long. The potential impacts of the current plan are described in Chapter 5 of the

draft EA. A section 404(b)(1) "Guidelines Evaluation" and Finding of Compliance were completed in September 1988 for the Kahului Study and included in Appendix A of the 1989 Final DPR/EIS. An updated 404(b)(1) analysis will be completed and incorporated into our revised Draft EA.

e. Response to Comment 2.b: The preferred alternative is one of six alternatives evaluated in the 1989 Final DPR/EIS. Initially three sites were considered for the small boat harbor. Sites at Kanaha and Maliko Bay as well Kahului were screened for suitability. Of the three, the Kahului site is the least environmentally sensitive. In the U.S.E.P.A. letter dated 4 Aug 1989, commenting on the draft DPR/EIS, the following statement on 404 compliance was provided:

Section 404 Comments

The preferred alternative (A1) appears to meet the 404(b)(1) Guidelines. This alternative will involve less dredging than the other alternatives and will disrupt established sand-dominated benthic communities, which are of "medium to low habitat value for reef fish and stony corals (p. F-29, Fish and Wildlife Coordination Act Report, Kahului Light Draft Navigation Improvements Study, Maui, USFWS, 1988). The practicable alternatives analysis seems sufficient. The selected site (Kahului Bay within the Kahului Deep Draft Harbor) is preferable over the other bays considered.

f. Response to Comment 2.c: Paragraph 5.1.5 of the draft EA discusses potential construction impacts on water quality in the project area. Paragraph 5.8.1 through 5.8.6 describe mitigation measures to lessen these impacts. With respect to operational activities, it is our opinion that the anticipated increase in launch and retrieval of trailered boats at the Kahului boat ramp will have a negligible effect on water quality in general. No aspect of this activity would be expected to contribute to increases in the already high levels of total Kjeldahl Nitrogen, Ortho-Phosphorus, suspended solids and turbidity in the harbor.

g. Response to Comment 2.d: Section 5.2 of the draft EA discusses potential adverse impacts to the marine environment. Scleractinian or "stony" corals within the footprint of the various project featutes would, along with other sessile benthic biota, be destroyed. Stony corals, however, are a very minor component of the benthic biota in the project area which is dominated by two species of common macro algae, Ulva fasciata and Hypnea musciformis, the latter considered an exotic (non-native) nuisance species.

h. Response to Potential Odor Problems: We agree that there may be a potential odor problem resulting from the smell of drying and decaying algae within the dredged material stockpiles and will include this information in the final EA. To minimize the potential for a persistent odor problem, stockpiles will be attenuated.

i. Response to Potential Fugitive Dust Concerns: During construction the construction contractor will be required to adhere to applicable Federal, State of Hawaii, and Maui County laws and regulations. This is a standard requirement in all Corps and State of Hawaii construction contract specifications. The contractor will be required to develop an environmental protection plan, which will detail the measures to be used, based on the construction methods to be used, to comply with the regulations including the provision of Chapter 11-60.1, Hawaii Administrative Rules, Section # 60.1-33.

The Draft EA is being revised to account for administrative updates in the agency coordination. No changes to the project scope evaluated in the previous Draft EA are being proposed or considered. A revised Draft FONSI and notice of availability of the Draft EA will be submitted to the Office of Environmental Quality Control for publication. Your review comments and our responses will be included in the revised Draft and Final Environmental Assessments.

We appreciate your review comments and look forward to providing this long-awaited project for the boaters on Maui.

Sincerely,

Ray H. Jyo, P.E.
Director of Engineering
and Technical Services

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

May 2, 1996

Planning and Operations Division

Mr. Eugene Nitta
Protected Species Coordinator
Western Pacific Program Office
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822-2396

Dear Mr. Nitta:

The U.S. Army Corps of Engineers, Honolulu Engineer District, and the State of Hawaii, Department of Land and Natural Resources, Division of Boating and Ocean Recreation, plan to construct commercial light-draft navigation improvements within the Kahului deep-draft harbor located on the north coast of the island of Maui, Hawaii. The project will consist of deepening the existing turning basin; deepening and lengthening the existing entrance channel; modifying the existing one-lane concrete launch ramp into a three-lane concrete launch ramp, including 180 feet of new concrete catwalk; and constructing a new 130-foot long breakwater structure.

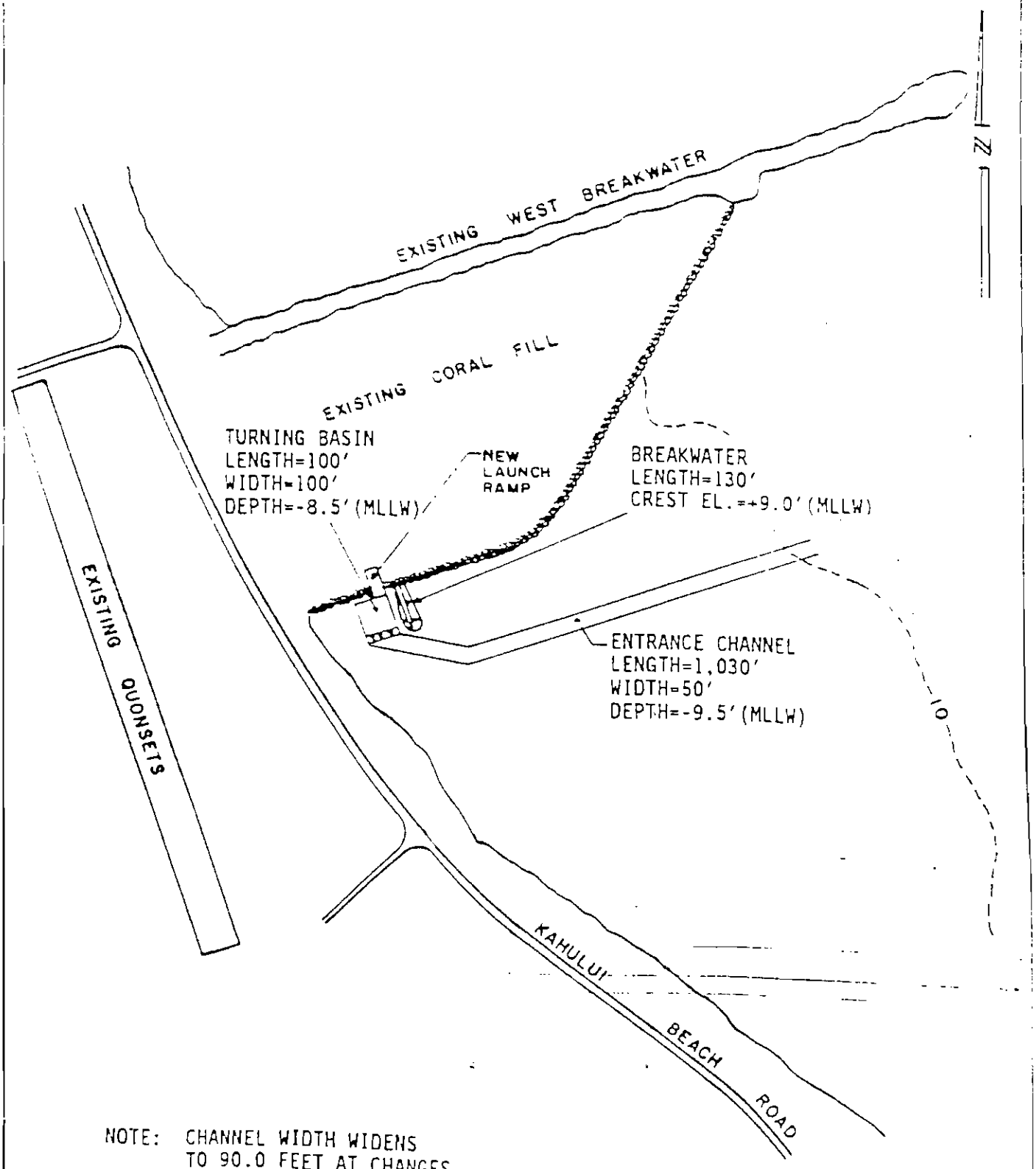
In conformance with Section 7 of the Endangered Species Act, we are requesting information on any listed, proposed or candidate endangered or threatened species that may be present in the study area (see enclosed map). Also, please inform us if there are any special considerations with respect to protected species that we should address in this phase of the planning process.

Thank you for your cooperation in this matter. If you have any questions regarding the project, please contact Mr. Robert Moncrief of my planning staff at (808) 438-2259.

Sincerely,

Ray H. Jyo, P.E.
Director of Engineering
and Technical Services

Enclosure



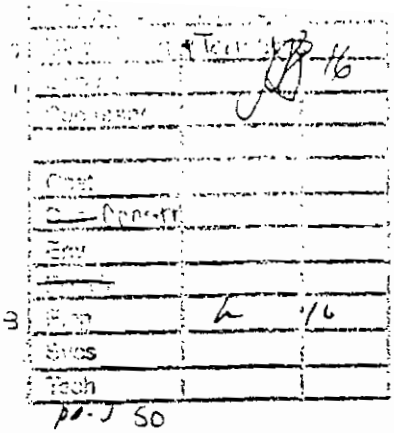
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII

SITE MAP
PLAN A1

LAUNCH RAMP

U.S. ARMY ENGINEER DISTRICT, HONOLULU

FIGURE 12



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

May 14, 1996 F/SW033:ETN

Mr. Ray H. Jyo
Director of Engineering
and Technical Services
Pacific Ocean Division
U.S. Army Corps of Engineers
Fort Shafter, Hawaii 96858-5440

Dear Mr. Jyo:

Thank you for your letter requesting a list of threatened and endangered species that may be affected by the proposed commercial light-draft navigation improvements within the Kahului Deep Draft Harbor, which include deepening of the turning basin and entrance channel, expanding the existing launching ramp, and construction of a new breakwater structure.

List of Species That May Occur in the Activity Area

Humpback whale (Megaptera novaeangliae) - endangered
Green turtle (Chelonia mydas) - threatened

Humpback whales concentrate during the winter breeding season in shallow waters throughout the state, usually less than 100 fathoms, and are observed off the north shore of Maui. On occasion, humpback whales may enter Kahului Harbor, but these incidents should be considered anomalies and the Harbor is not considered essential habitat.

Green turtles are found throughout the Hawaiian Archipelago. Their distribution, however, has been reduced in recent historical times, with breeding aggregations being eliminated and certain foraging areas no longer utilized in the main Hawaiian Islands. Feeding and resting areas, where adult Hawaiian Chelonia live the greater portion of their lives during non-breeding periods, are located in coastal waters of both the main islands and the NWHI. Significant resting and foraging habitats for Chelonia have been documented near the proposed project area fronting the Maui Electric Company powerplant.

Critical habitat for listed species under the jurisdiction of the National Marine Fisheries Service has not been proposed or designated within or near the project site.

Because the proposed construction activities will take place within the existing deep draft harbor, no special considerations other than the use of best construction practices to limit the generation of fines is necessary. On the rare occasion that humpback whales or green turtles are observed in proximity to the site we would expect the contractors to exercise reasonable care in dredging and filling operations.

Sincerely,

Eugene T. Nitta
Protected Species Program
Coordinator

cc: F/SWO3 - Lecky
F/SWO23 - Naughton

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

May 2, 1996

Planning and Operations Division

Gregory Pai, Ph.D.
Director
Office of State Planning
P.O. Box 3540
Honolulu, Hawaii 96811-3540

Dear Dr. Pai:

The U.S. Army Corps of Engineers, Honolulu Engineer District, and the State of Hawaii, Department of Land and Natural Resources, Division of Boating and Ocean Recreation, plan to construct commercial light-draft navigation improvements within the Kahului deep-draft harbor located on the north coast of the island of Maui, Hawaii.

The project will consist of deepening the existing turning basin; deepening and lengthening the existing entrance channel; modifying the existing one-lane concrete launch ramp into a three-lane concrete launch ramp, including 180 feet of new concrete catwalks; and constructing a new 130-foot long stub breakwater structure.

An Environmental Assessment is in preparation for this project to update the final Environmental Impact Statement issued in July 1989.

a. There were no impacts to endangered, threatened, proposed or candidate species identified during the original study, and none are anticipated; however, coordination has been initiated with the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

b. The construction contractor will be required to comply with our standard environmental protection clauses contained in the contract specifications, including water quality monitoring, cultural resources protection, etc.

A Coastal Zone Management (CZM) consistency determination for the original project was submitted in 1988 by the State Department of Transportation [Federal Consistency determination, Kahului Boat Ramp Improvements, Kahului, Maui, Hawaii, (FC/88-042)]. The Office of State Planning concurred with their finding of consistency by letter dated December 7, 1988 (Reference # P-8995).

We believe that the original determination fulfills the CZM consistency review requirements and request concurrence with our conclusion.

Should you have any questions, please feel free to contact Mr. Robert Moncrief at 438-2259 or Ms. Sharon Okamoto at 438-2249 of my planning staff.

Sincerely,

Ray H. Jyo, P.E.
Director of Engineering
and Technical Services

OFFICE OF STATE PLANNING

Office of the Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2846, 587-2800

BENJAMIN J. CAYETANO, Governor

FAX: Director's Office 587-2848
Planning Division 587-2824

Ref. No. Z-0121

May 31, 1996

OFFICE	ACTION	INFO
Dir of Engrg & Tech Svcs		
Deputy		
Secretary		
Cost		
~~Spec Unit~~		
Env		
~~Plan~~		
Plng		
~~Svcs~~ ET-M		
Tech		

ET-PP: JT

Mr. Ray H. Jyo, P.E.
Director of Engineering and
Technical Services
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Jyo:

SUBJECT: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for Construction of Commercial Light Draft Navigation Improvements Within Kahului Harbor, Maui

Your determination that the previous CZM consistency approval for the project, dated December 7, 1988, fulfills CZM consistency review requirements is under consideration. We note in your letter of May 2, 1996, however, that changes have been made to the original proposal and that an environmental assessment is being prepared to update the final EIS issued in July 1989. Therefore, we will need to review the environmental assessment before a CZM consistency decision can be reached.

Please submit the environmental assessment and updated project plans to our CZM Program. We will try to complete our review as expeditiously as possible. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call our CZM office at 587-2878.

Sincerely,

Mary Lou Kobayashi for
Gregory G.Y. Pai, Ph.D.
Director

cc: Department of Land & Natural Resources
Div. of Boating & Ocean Recreation
Department of Health, Clean Water Branch
Planning Department, County of Maui

CONVERSATION RECORD

TIME 1130 | DATE 30 MAY 1996

TYPE: ☐ VISIT ☐ CONFERENCE ☒ TELEPHONE ☒ INCOMING ☐ OUTGOING

Location of Visit/Conference:

ROUTING: NAME/SYM | INT

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION	TELEPHONE NO
SKIPPY HAO	DLNR - DAR	243-5294

SUBJECT: IMPACTS OF SBH CONSTRUCTION ACTIVITIES ON RECREATIONAL FISHING DURING SEASONAL FISH RUNS IN THE HARBOR

SUMMARY

A. I ASKED SKIPPY ABOUT THE STATUS OF SEASONAL RUNS OF CAMA (MULLOIDES FLAVOLINEATUS) AND HAHALALU (SELAR CRUMENOPTHALMUS) IN KAHULUI HARBOR, AND THE POTENTIAL IMPACTS ON FISHING DURING CONSTRUCTION OF PROPOSED LIGHT-DRAFT NAVIGATION IMPROVEMENTS. HIS RESPONSE WAS:

1. RUNS STILL OCCUR. TIMES OF RUNS VARY CONSIDERABLY FROM YEAR TO YEAR.
2. FISHING DURING THESE RUNS TAKES PLACE THROUGHOUT THE HARBOR. CONSTRUCTION ACTIVITIES WOULD NOT SIGNIFICANTLY RESTRICT RECREATIONAL FISHING.
3. FISHING COMMUNITY DESIRES THE LONG-ANTICIPATED IMPROVEMENTS AND WOULD REALLY ENDURE TEMPORARY INCONVENIENCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

B. I ALSO INQUIRED ABOUT THE STATUS OF THE HAWAIIAN ANCHOVY (NEHU), THE PREFERED BAITFISH FOR THE COMMERCIAL LIVE-BAIT AKU FISHERY.

1. THERE ARE NO LONGER ANY COMMERCIAL LIVE-BAIT BOATS FISHING OUT OF MAUI.
2. LIMITED SUBSISTENCE FISHING FOR NEHU STILL TAKES PLACE.

ACTION REQUIRED

NONE

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
ROBERT MONCRIEF	Robert Moncrief	30 MAY 1996

ACTION TAKEN

SIGNATURE	TITLE	DATE

APPENDIX B

MAILING LIST

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NATURAL RESOUCRES
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WAILUKU, HAWAII 96793

CHARLES AKI
MAUI TRAILER BOAT CLUB
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KAHULUI, HAWAII 96832

DAVID VENTURA JR.
DIRECTOR, MAALAEA BOAT &
FISHING CLUB
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DEANNA M. WEIMAN
U.S. ENVIRONMENTAL PROTECTION
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DEPARTMENT OF LAND AND NATURAL
RESOURCES STATE HISTORIC
PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FL.
HONOLULU, HAWAII 96813

DEPARTMENT OF PARKS AND
RECREATION
20 SOUTH HIGH STREET
WAILUKU, HAWAII 96793

DEPARTMENT OF WATER SUPPLY
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DIRECTOR
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COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
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STATE OF HAWAII
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DR. JOHN T.HARRISON
ENVIRONMENTAL CENTER, U OF H
CRAWFORD 317
2550 CAMPUS ROAD
HONOLULU, HAWAII 96822

HAMILTON LIBRARY
2550 THE MALL
HONOLULU, HAWAII 96822

HANA PUBLIC & SCHOOL LIBRARY
P.O. BOX 490
HANA, HAWAII 96713

HONORABLE DANIEL K. AKAKA
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PACIFIC ISLAND ENV COORDINATOR
NATIONAL OCEANIC & AT ADMIN,
PACI AREA OFC-SW REGION
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KAHULUI PUBLIC LIBRARY
90 SCHOOL STREET
KAHULUI, HAWAII 96732

KIHEI PUBLIC LIBRARY
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KIHEI, HAWAII 96753

LAHAINA PUBLIC LIBRARY
680 WHARF STREET
LAHAINA, HAWAII 96761

MAKAWAO PUBLIC LIBRARY
1159 MAKAWAO STREET
MAKAWAO, HAWAII 96768

MAUI NEWS
P.O. BOX 550
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MICHAEL WILSON
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MICHAEL WILSON
CHAIPERSON & ST. HISTORIC
PRESERVATIN OFCR
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SKIPPY HAU
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DIRECTOR
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US DEPARTMENT OF INTERIOR
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WAILUKU, HAWAII 96793

APPENDIX C

SECTION 404(B)(1) GUIDELINES ANALYSIS

V. EVALUATION OF THE EFFECTS OF THE DISCHARGE OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES USING THE SECTION 404(b)(1) GUIDELINES
KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS
6 AUGUST 1996

I. PROJECT DESCRIPTION.

a. Location. The proposed action is located in Kahului Harbor on the northern side of the island of Maui. The project site is situated on the northwest side of the harbor at the coral fill area (also known as Kahului Harbor Park).

b. General Description. The following gives the brief description of each of the alternative plans. A more detailed description of the six alternatives is contained in the Final Detailed Project Report and Environmental Impact Statement, July 1989.

Plan A1, Site 1. Plan A1 consists of a 130-foot long breakwater, a turning basin 100 feet by 100 feet by 8.5 feet deep, a new three-lane boat launch ramp, two concrete catwalks, and an entrance channel approximately 1,030 feet long, 50 feet wide and 9.5 feet in depth.

Plan A2, Site 1. Plan A2 consists of a 130-foot breakwater, a 100 feet by 100 feet by 8.5 feet deep turning basin, a temporary mooring basin 105 feet by 105 feet by 6.5 feet deep, a revetted mole 120 feet long by 50 feet wide, a new two-lane boat launch ramp, and a 50-foot wide by 9.5-foot deep by 1,030-foot long entrance channel. Plan A2 is also located at Site 1.

Plan B1, Site 1. Plan B1 consists of a revetted turning basin 100 feet by 100 feet in area and 8.5 feet in depth, a 50-foot wide, 1,030-foot long by 9.5 feet deep entrance channel, and a 50-foot wide, 140-foot long by 8.5-foot deep approach channel. Plan B1 will require excavation of the existing coral fill.

Plan B2, Site 1. Plan B2 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a temporary mooring basin 105 feet by 105 feet by 6.5 feet deep, a new two-lane launch ramp, a 1,030-foot long entrance channel 50-foot wide by 9.5-foot deep, and a 50-foot wide by 140-foot long by 8.5-foot deep approach channel. Both the turning basin and mooring basin will be revetted. Plan B2 will require excavation of the existing coral fill.

Plan C1, Site 2. Plan C1 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a new two-lane boat launch ramp, and a revetted entrance channel approximately 240 feet long by 50 feet wide by 9.5 feet deep. The plan will require excavation of the existing fill.

Plan C2, Site 2. Plan C2 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a mooring basin 105 feet by 105 feet by 6.5 feet deep, a new two-lane boat launch ramp, and an entrance channel 240 feet long, 50 feet wide and 9.5 feet deep. The plan will require excavation of existing fill.

c. Authority and Purpose. The authority for the project is provided by Section 107 of the River and Harbor Act of 1960, as amended. The purpose of the project is to provide a light draft navigation facility for North Maui.

d. General Description of Dredged or Fill Material.

(1) The existing breakwater (Plans A1, A2) consists of basaltic stones which will be utilized as part of the underlayer of the new rock revetment. The breakwater will consist of 5,000 to 7,000 pound quarrystone, an underlayer of 500 to 700 pound stone and core ranging from quarry spalls to about 30 pound stones. The breakwater will be approximately 15 feet across and about +9-foot mean lower low water (MLLW) in elevation. The interior revetted section for plan A2 consists of a 200 to 300 pound armor stone outer layer and an underlayer comprising 20 to 30 pound stones. Plan A2 typical revetted mole section consists of an armor layer with 2,000 to 3,000 pound quarrystone, an under layer of 200 to 300 pound quarrystones and a bedding layer of quarry spalls. The interior revetted sections for Plans B1, B2, C1, and C2 are similar, with 300 to 500 pound armor layer, 30 to 50 pound underlayer over a filter cloth membrane. Interior revetments for plans B1, B2, C1 and C2 will be built to an elevation of +10 feet MLLW and Plan A will be built to an elevation of +6 MLLW.

(2) The quantity of material proposed for placement is as follows:

	UNDERLAYER (Cu. yds.)	ARMOR LAYER (Cu. yds.)	BREAKWATER (Sq. ft.)
Plan A1	400	800	8,000
Plan A2	1,200	2,300	12,700
Plan B1	1,000	2,300	5,900
Plan B2	1,200	2,800	7,900
Plan C1	3,200	7,500	7,000
Plan C2	4,600	10,500	9,000

(3) The source of the breakwater and revetment stones is a local quarry.

e. Description of the Proposed Discharge Sites.

(1) The location and layouts of the sites are provided in figures 5-16 of the Detailed Project Report.

(2) The breakwater and revetment will cover approximately 0.19 acre for Plan A1, 0.29 acre for Plan A2, 0.13 acre for Plan B1, 0.18 acre for Plan B2, 0.16 acre for Plan C1 and 0.21 acre for Plan C2.

(3) The type of site is inshore marine.

(4) The type of habitat is shallow marine with predominantly hard bottom.

(5) The placement of fill will occur during the construction period of approximately 12 months and has a project economic life of 50 years.

f. Description of Disposal Method. Smaller stones will be place by dump-truck, crane and/or front-end loader. Armor units will be placed by crane.

II. FACTUAL DETERMINATIONS.

a. Physical Substrate Determinations.

(1) The substrate elevation is between -3.0 and -6 feet (MLLW) and the slope is basically flat except at the margins of the existing turning basin and entrance channel.

(2) Most of the project area is hard reef rock. Small pockets of sand and coral rubble are also present.

(3) No fill material movement is expected to occur. An armored revetment will prevent such an occurrence.

(4) The physical effects on the benthos will be the burial of sedentary benthic species.

(5) Other Effects. There will be an increase in turbidity, noise, dust and exhaust emissions during construction.

(6) Action taken to minimize the impacts include:

(a) No construction material will be stockpiled in the marine environment.

(b) Fills will be protected from erosion with armor stone as soon after completion as practicable.

(c) Breakwaters and revetments will be constructed of large boulders to dissipate wave energy and resist erosion.

(d) All construction-related materials will be placed or stored in ways to avoid or minimize disturbance to the reef.

(e) All construction-related materials will be free of pollutants.

(f) Silt curtains will be deployed around dredge sites.

(g) An oil contingency plan will be developed for the small boat harbor by the Division of Boating and Ocean Recreation as part of the normal operating procedures of the harbor.

(h) Contractors for both the Federal portion and the State of Hawaii portion of the project will be required to conform with State water quality standards.

[i] No return flow from construction runoff or stockpiling will be allowed into waters of the U. S.

[j] Contractor will develop an environmental protection plan which, among other things, will provide a method to prevent debris, petroleum products, or other pollutants from falling, flowing ,leaching or otherwise entering the water.

b. Water Circulation, Fluctuation and Salinity Determinations.

(1) Water, Effects on:

(a) Salinity	No effect
(b) Water Chemistry	No effect
(c) Clarity	No effect
(d) Color	No effect

(f) Odor — No effect

(g) Dissolved Gas — No effect

(h) Nutrients — No effect

(2) Current Patterns and Circulation:

(a) Current pattern and flow. New breakwater structure, turning basin and entrance channel may result in localized changes in current patterns and flow.

(b) Velocity. Current velocity will be reduced slightly by the deepened dredged channels.

(c) Stratification. No effect.

(d) Hydrologic Regime. No effect.

(3) Normal Water Level Fluctuations. The fill material will have negligible effects on the water level fluctuations.

(4) Salinity Gradients. Salinity gradients will not be affected by the discharge of fill material.

(5) Actions That Will Be Taken To Minimize Impacts. N/A

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Construction activities will generate temporary and minor turbidity in the project site. Turbidity levels will return to ambient pre-project conditions once the project is completed.

(2) Effects on Chemical and Physical Properties of the Water Column:

(a) Light penetration. Localized decrease during construction. No long term effect.

(b) Dissolved Oxygen. Slight localized decrease during construction may occur. No long term effect.

(c) Toxic metals & organics. No effect.

(d) Pathogens. No effect.

(e) Aesthetics. No effect.

(3) Effects on Biota.

(a) Primary production/photosynthesis. No effect.

(b) Suspension/Filter feeder. Suspension feeders may be temporarily stressed in the immediate project area.

(c) Sight feeders. Sight feeders may avoid the immediate construction area.

(4) Action Taken to Minimize Impacts. The construction contractor will be required to maintain water quality standards of the State of Hawaii during construction. Silt containment devices will be deployed around construction area to minimize turbidity.

d. Contaminant Determinations. No contaminants are expected since the material is basaltic stone from a local quarry.

e. Aquatic Ecosystem and Organism Determinations. The proposed discharge is free of contaminants, so there will be no toxic effects on the ecosystem or individual organisms. However, the placement of the clean stone will have physical effects on the aquatic ecosystem as indicated below.

(1) Effects on Plankton	No effect.
(2) Effects on Benthos	Benthic organisms will be buried by placement of stone for the breakwater.
(3) Effects on Nekton	No effect.
(4) Effects on Aquatic Food Web	No effect.
(5) Effect on Special Aquatic Sites	There are no special aquatic sites in the project area.
(6) Endangered and Threatened Species	No effect.

(7) Other Wildlife	N/A.
(8) Actions to Minimize Effects	Effects of the discharge will be minimized by confining the resultant turbidity through the deployment of an appropriate silt containment device.

f. Proposed Disposal Site Determinations. No zone of mixing will be required. The contractor will be required to comply with applicable water quality standards established by the State of Hawaii and with the terms and conditions of the State's Section 401 Water Quality Certification. The project will not have an impact on municipal water supply intakes, shellfish, fisheries, wetlands, submerged vegetation, parks, national and historic monuments, national seashores, wilderness areas, research sites, recreational areas, and preserves.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. No cumulative impacts are anticipated. There are no State or Maui County plans for further expansion of the boat launching facility or the siting of additional small boat facilities within Kahului Harbor.

h. Determination of Secondary Effects on the Aquatic Ecosystem. No secondary impact on the aquatic ecosystem from the placement of clean, uncontaminated quarried basalt rock to construct a 130-foot long breakwater, and concrete piles to support a concrete catwalk are anticipated.

III. FINDING OF COMPLIANCE FOR KAHULUI LIGHT DRAFT NAVIGATION KAHULUI, MAUI, HAWAII.

a. This project as proposed complies with the guidelines, and no significant adaptation of the guidelines were made relative to this evaluation.

b. Six alternative plans at two different locations were considered with Plan A1 at Site 1 being the preferred alternative. In general, the plans include variations of a turning basin (all plans), entrance channel (Plans A1, A2, B1, B2), breakwater (Plans A1, A2), mooring area (Plans A2, B2, C2), parking, and shore facilities. The environmental impacts of all alternatives would be generally the same as that of the proposed action.

c. The discharge of clean, naturally occurring basalt stone into the nearshore waters at the western end of Kahului Deep Draft Harbor would not degrade water quality or human use of the water. The stone fill material is

not suspected of containing contaminants; is not expected to cause any prolonged turbidity problems; and is not expected to degrade the aquatic environment.

d. Use of the selected disposal site will not harm any candidate, proposed or listed endangered or threatened species or their critical habitat.

e. The proposed placement of the fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and on recreational, aesthetic and economic values will not occur.

f. Appropriate steps to minimize potential adverse impacts of the discharge on aquatic systems include requiring the contractor to comply with water quality standards established by the State of Hawaii and the terms and conditions of the State's Section 401 Water Quality Certification, locating the fill in an area previously disturbed by an existing facility, using clean stone fill material and fitting the armor stone to reduce the size of the structure.

g. On the basis of this evaluation and the information contained in the Environmental Assessment, the proposed discharge sites are specified as complying with the requirements of the 404(b)(1) guidelines, with the inclusion of appropriate and practicable actions to minimize pollution or adverse effects to the aquatic ecosystem.

Ralph H. Graves
Lieutenant Colonel, U.S. Army
District Engineer

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX B - SECTION
404(B)(1) GUIDELINES ANALYSIS
DATED 23 JANUARY 2000

V. EVALUATION OF THE EFFECTS OF THE DISCHARGE OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES USING THE SECTION 404(b)(1) GUIDELINES
KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS
23 January 2000

I. PROJECT DESCRIPTION.

a. Location. The proposed action is located in Kahului Harbor on the northern side of the island of Maui. The project site is situated on the northwest side of the harbor at the coral fill area (also known as Kahului Harbor Park).

b. General Description. The following gives the brief description of each of the alternative plans. A more detailed description of the six alternatives is contained in the Final Detailed Project Report and Environmental Impact Statement, July 1989.

Plan A1, Site 1. Plan A1 consists of a 130-foot long breakwater, a turning basin 100 feet by 100 feet by 8.5 feet deep, a new three-lane boat launch ramp, two concrete catwalks, and an entrance channel approximately 1,030 feet long, 50 feet wide and 9.5 feet in depth.

Plan A2, Site 1. Plan A2 consists of a 130-foot breakwater, a 100 feet by 100 feet by 8.5 feet deep turning basin, a temporary mooring basin 105 feet by 105 feet by 6.5 feet deep, a revetted mole 120 feet long by 50 feet wide, a new two-lane boat launch ramp, and a 50-foot wide by 9.5-foot deep by 1,030-foot long entrance channel. Plan A2 is also located at Site 1.

Plan B1, Site 1. Plan B1 consists of a revetted turning basin 100 feet by 100 feet in area and 8.5 feet in depth, a 50-foot wide, 1,030-foot long by 9.5 feet deep entrance channel, and a 50-foot wide, 140-foot long by 8.5-foot deep approach channel. Plan B1 will require excavation of the existing coral fill.

Plan B2, Site 1. Plan B2 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a temporary mooring basin 105 feet by 105 feet by 6.5 feet deep, a new two-lane launch ramp, a 1,030-foot long entrance channel 50-foot wide by 9.5-foot deep, and a 50-foot wide by 140-foot long by 8.5-foot deep approach channel. Both the turning basin and mooring basin will be revetted. Plan B2 will require excavation of the existing coral fill.

Plan C1, Site 2. Plan C1 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a new two-lane boat launch ramp, and a revetted entrance channel approximately 240 feet long by 50 feet wide by 9.5 feet deep. The plan will require excavation of the existing fill.

Plan C2, Site 2. Plan C2 consists of a turning basin 100 feet by 100 feet by 8.5 feet deep, a mooring basin 105 feet by 105 feet by 6.5 feet deep, a new two-lane boat launch ramp, and an entrance channel 240 feet long, 50 feet wide and 9.5 feet deep. The plan will require excavation of existing fill.

c. Authority and Purpose. The authority for the project is provided by Section 107 of the River and Harbor Act of 1960, as amended. The purpose of the project is to provide a light draft navigation facility for North Maui.

d. General Description of Dredged or Fill Material.

(1) The existing breakwater (Plans A1, A2) consists of basaltic stones which will be utilized as part of the underlayer of the new rock revetment. The breakwater will consist of 5,000 to 7,000 pound quarrystone, an underlayer of 500 to 700 pound stone and core ranging from quarry spalls to about 30 pound stones. The breakwater will be approximately 15 feet across and about +9-foot mean lower low water (MLLW) in elevation. The interior revetted section for plan A2 consists of a 200 to 300 pound armor stone outer layer and an underlayer comprising 20 to 30 pound stones. Plan A2 typical revetted mole section consists of an armor layer with 2,000 to 3,000 pound quarrystone, an under layer of 200 to 300 pound quarrystones and a bedding layer of quarry spalls. The interior revetted sections for Plans B1, B2, C1, and C2 are similar, with 300 to 500 pound armor layer, 30 to 50 pound underlayer over a filter cloth membrane. Interior revetments for plans B1, B2, C1 and C2 will be built to an elevation of +10 feet MLLW and Plan A will be built to an elevation of +6 MLLW.

The recommended alternative, Plan A1, includes a 3-lane boat ramp, loading docks and protective revetment. These features will require "fill" material as follows:

Bedding Layer	67 cy
Geotextile Filter Fabric	2124 sf
Galvanized Pipe Leveling Frame	7 tons
Tremie Grout beneath Precast Panels	60 cy
Precast Concrete Panels	78 cy
Rock Fill under Dock	165 cy
Sacked Concrete	3.6 cy
Rock Revetment (250-2000-lb quarry stone)	420 cy

Octagonal Concrete Piles (20" diameter) 350 lf

(2) The quantity of breakwater and revetment material proposed for placement is as follows:

	UNDERLAYER (Cu. yds.)	ARMOR LAYER (Cu. yds.)
Plan A1	800	1,700
Plan A2	1,200	2,300
Plan B1	1,000	2,300
Plan B2	1,200	2,800
Plan C1	3,200	7,500
Plan C2	4,600	10,500

(3) Footprint of structures below Mean High Water:

	BREAKWATER (sq. ft.).	LAUNCH RAMP AND REVETMENT (sq. ft)
Plan A1	7,400	3,863
Plan A2	12,700	N/A
Plan B1	5,900	N/A
Plan B2	7,900	N/A
Plan C1	7,000	N/A
Plan C2	9,000	N/A

(4) The source of the breakwater and revetment stones is a local quarry.

e. Description of the Proposed Discharge Sites.

(1) The location and layouts of the sites are provided in figures 5-16 of the Detailed Project Report.

(2) The breakwater and revetment will cover approximately 0.19 acre for Plan A1, 0.29 acre for Plan A2, 0.13 acre for Plan B1, 0.18 acre for Plan B2, 0.16 acre for Plan C1 and 0.21 acre for Plan C2.

(3) The type of site is inshore marine.

(4) The type of habitat is shallow marine with predominantly hard bottom.

(5) The placement of fill will occur during the construction period of approximately 12 months and has a project economic life of 50 years.

f. Description of Disposal Method. Smaller stones will be place by dump-truck, crane and/or front-end loader. Armor units will be placed by crane.

II. FACTUAL DETERMINATIONS.

a. Physical Substrate Determinations.

(1) The substrate elevation is between -3.0 and -6 feet (MLLW) and the slope is basically flat except at the margins of the existing turning basin and entrance channel.

(2) Most of the project area is hard reef rock. Small pockets of sand and coral rubble are also present.

(3) No fill material movement is expected to occur. An armored revetment will prevent such an occurrence.

(4) The physical effects on the benthos will be the burial of sedentary benthic species.

(5) Other Effects. There will be an increase in turbidity, noise, dust and exhaust emissions during construction.

(6) Action taken to minimize the impacts include:

(a) No construction material will be stockpiled in the marine environment.

(b) Fills will be protected from erosion with armor stone as soon after completion as practicable.

(c) Breakwaters and revetments will be constructed of large boulders to dissipate wave energy and resist erosion.

(d) All construction-related materials will be placed or stored in ways to avoid or minimize disturbance to the reef.

(e) All construction-related materials will be free of pollutants.

(f) Silt curtains will be deployed around dredge sites.

(g) An oil contingency plan will be developed for the small boat harbor by the Division of Boating and Ocean Recreation as part of the normal operating procedures of the harbor.

(h) Contractors for both the Federal portion and the State of Hawaii portion of the project will be required to conform with State water quality standards.

[i] No return flow from construction runoff or stockpiling will be allowed into waters of the U. S.

[j] Contractor will develop an environmental protection plan which, among other things, will provide a method to prevent debris, petroleum products, or other pollutants from falling, flowing ,leaching or otherwise entering the water.

b. Water Circulation, Fluctuation and Salinity Determinations.

(1) Water, Effects on:

(a) Salinity	No effect
(b) Water Chemistry	No effect
(c) Clarity	No effect
(d) Color	No effect
(f) Odor	No effect
(g) Dissolved Gas	No effect
(h) Nutrients	No effect

(2) Current Patterns and Circulation:

(a) Current pattern and flow. New breakwater structure, turning basin and entrance channel may result in localized changes in current patterns and flow.

(b) Velocity. Current velocity will be reduced slightly by the deepened dredged channels.

(c) Stratification. No effect.

(d) Hydrologic Regime. No effect.

(3) Normal Water Level Fluctuations. The fill material will have negligible effects on the water level fluctuations.

(4) Salinity Gradients. Salinity gradients will not be affected by the discharge of fill material.

(5) Actions That Will Be Taken To Minimize Impacts. N/A

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Construction activities will generate temporary and minor turbidity in the project site. Turbidity levels will return to ambient pre-project conditions once the project is completed.

(2) Effects on Chemical and Physical Properties of the Water Column:

(a) Light penetration. Localized decrease during construction. No long term effect.

(b) Dissolved Oxygen. Slight localized decrease during construction may occur. No long term effect.

(c) Toxic metals & organics. No effect.

(d) Pathogens. No effect.

(e) Aesthetics. No effect.

(3) Effects on Biota.

(a) Primary production/photosynthesis. No effect.

(b) Suspension/Filter feeder. Suspension feeders may be temporarily stressed in the immediate project area.

(c) Sight feeders. Sight feeders may avoid the immediate construction area.

(4) Action Taken to Minimize Impacts. The construction contractor will be required to maintain water quality standards of the State of Hawaii

during construction. Silt containment devices will be deployed around construction area to minimize turbidity.

d. Contaminant Determinations. No contaminants are expected since the material is basaltic stone from a local quarry.

e. Aquatic Ecosystem and Organism Determinations. The proposed discharge is free of contaminants, so there will be no toxic effects on the ecosystem or individual organisms. However, the placement of the clean stone will have physical effects on the aquatic ecosystem as indicated below.

(1) Effects on Plankton	No effect.
(2) Effects on Benthos	Benthic organisms will be buried by placement of stone for the break-water and boat launching ramp.
(3) Effects on Nekton	No effect.
(4) Effects on Aquatic Food Web	No effect.
(5) Effect on Special Aquatic Sites	There are no special aquatic sites in the project area.
(6) Endangered and Threatened Species	No effect.
(7) Other Wildlife	N/A.
(8) Actions to Minimize Effects	Effects of the discharge will be minimized by confining the resultant turbidity through the deployment of an appropriate silt containment device.

f. Proposed Disposal Site Determinations. No zone of mixing will be required. The contractor will be required to comply with applicable water quality standards established by the State of Hawaii and with the terms and conditions of the State's Section 401 Water Quality Certification. The project will not have an impact on municipal water supply intakes, shellfish, fisheries, wetlands, submerged vegetation, parks, national and historic monuments, national seashores, wilderness areas, research sites, recreational areas, and preserves.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. No cumulative impacts are anticipated. There are no State or Maui County plans for further expansion of the boat launching facility or the siting of additional small boat facilities within Kahului Harbor.

h. Determination of Secondary Effects on the Aquatic Ecosystem. No secondary impact on the aquatic ecosystem from the placement of clean, uncontaminated quarried basalt rock to construct a 130-foot long breakwater; bedding material, leveling frame, precast concrete panels and tremie gout for the launch ramp; and concrete piles to support two concrete catwalks are anticipated.

III. FINDING OF COMPLIANCE FOR KAHULUI LIGHT DRAFT NAVIGATION KAHULUI, MAUI, HAWAII.

a. This project as proposed complies with the guidelines, and no significant adaptation of the guidelines were made relative to this evaluation.

b. Six alternative plans at two different locations were considered with Plan A1 at Site 1 being the preferred alternative. In general, the plans include variations of a turning basin (all plans), entrance channel (Plans A1, A2, B1, B2), breakwater (Plans A1, A2), mooring area (Plans A2, B2, C2), parking, and shore facilities. The environmental impacts of all alternatives would be generally the same as that of the proposed action.

c. The discharge of clean, naturally occurring basalt stone into the nearshore waters at the western end of Kahului Deep Draft Harbor would not degrade water quality or human use of the water. The stone fill material is not suspected of containing contaminants; is not expected to cause any prolonged turbidity problems; and is not expected to degrade the aquatic environment.

d. Use of the selected disposal site will not harm any candidate, proposed or listed endangered or threatened species or their critical habitat.

e. The proposed placement of the fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and on recreational, aesthetic and economic values will not occur.

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX C - PERMITS AND CORRESPONDENCE

Appendix C
Permits and Pertinent Correspondence

Table of Contents

Appendix C
Permits and Pertinent Correspondence

Table of Contents - Continued

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
BUILDING 230
FT. SHAFTER, HAWAII 96858-5440

September 8, 1989

REPLY TO
ATTENTION OF:
Planning Branch

Mr. Richard E. Sanderson, Director
Office of Federal Activities (A-104)
Environmental Protection Agency
401 M Street, SW.
Washington, DC 20460

Dear Mr. Sanderson:

The U.S. Army Corps of Engineers, Honolulu District, has completed the Final Detailed Project Report and Environmental Impact Statement for Kahului Light Draft Navigation Improvements on the Island of Maui, Hawaii.

In accordance with the procedures for implementing the National Environmental Policy Act, five copies of the Kahului Light Draft Navigation Improvements Final Detailed Project Report and Environmental Impact Statement are enclosed for filing.

Sincerely,

Jack E. Clifton
Colonel, U.S. Army
Acting Division Engineer

Enclosure (5 copies)

Copy Furnished with Enclosure (3 copies):

Ms. Deanna M. Wieman, Director
Office of External Affairs
Environmental Protection Agency, Region IX
215 Fremont Street
San Francisco, CA 94105

Lau
cc/8863

H. Young
CEPOD-ED-PJ

Pelowski
CEPOD-ED-P

Fujii
CEPOD-ED-Z

Cheung
CEPOD-ED

Ltc Ashhurst
CEPOD-DD

Ltc Wynn
CEPOH-DE 7/9/89

Col Clifton
Actg
CEPOD-DE

M&R

File:
CEPOD-ED-P

res6s

RECORD OF DECISION

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS PROJECT
KAHULUI, ISLAND OF MAUI, HAWAII

I have reviewed the Final Detailed Project Report and Environmental Impact Statement (Final DPR/EIS) for the Kahului Light Draft Navigation Improvements at Kahului, Maui, Hawaii, dated July 1989, the Environmental Assessment and Finding of No Significant Impact (EA/FONSI) dated October 1996, and correspondence from the public and interested resource agencies received in response to the circulation of these documents and Public Notice No. 200000171 dated June 2, 2000, for public review and comment. The technical and economic criteria used to formulate the alternative plans were those specified in the Water Resources Council's Principles and Guidelines. Plan A1 had the greatest net benefits over costs without unacceptable environmental and social impacts, and was also the environmentally preferred alternative. Plan A1 was selected and recommended by the District Engineer and approved by the Chief, Planning Division, Directorate of Civil Works on June 5, 1989. Plan A1 involved construction of a light draft harbor navigation facility within the protective structures of the larger Kahului Deep Draft Harbor, at the shoreward end of the coral fill fronting the existing west breakwater. The recommended plan included the following features:

- A 1,030-foot-long entrance channel, 9.5 feet deep by 50 feet wide.
- A turning basin 100 feet by 100 feet, 8.5 feet deep.
- A rubble mound breakwater 130 feet long with a crest elevation of +9.0 feet mean lower low water.
- A new two-lane launch ramp to be provided by the project sponsor.

The project is being accomplished under the authority of Section 107 of the River and Harbor Act of 1960, as amended. The 1989 Final DPR/EIS screened three sites and evaluated various structural measures to provide safe and efficient light draft navigation facilities for the growing demands of the commercial fishing industry. Plans A and B are located near the shoreward portion of the fill area in the vicinity of the existing launch ramp. Plan C is located at the seaward portion of the fill area near the deeper waters of the deep draft harbor basin. The basic plans (plans A1, B1, and C1) include a two-lane launch ramp, protected turning basin, and dredged entrance channel. These are the basic plans upon which all economic benefits and evaluations are based. The optional mooring plans for 10 to 15 vessels (plans A2, B2, and C2) were developed for the benefit of the project sponsor.

An Environmental Assessment and Finding of No Significant Impact (EA/FONSI) were prepared in 1996 in order to assess the impacts of proposed changes to the local service facilities in Plan A1 that were desired by the project sponsor, and to update the coordination and consultation with the resource agencies having jurisdiction by law or special expertise since the completion of the Final DPR/EIS. The recommended plan evaluated in the 1996 EA/FONSI was a modified Plan A1 that included changes to the local service facilities (launch ramp and catwalks) desired by the local sponsor and consisted of the following features:

- A 1,030-foot-long entrance channel, 9.5 feet deep by 50 feet wide.
- A turning basin 100 feet by 100 feet, 8.5 feet deep.
- A rubble mound breakwater 130 feet long with a crest elevation of +9.0 feet mean lower low water.

- A new three-lane launch ramp to be provided by the project sponsor.
- Two new concrete catwalks totaling 180 feet in length to be provided by the project sponsor.

The public had numerous opportunities to comment on the project through the processing and issuance of the Conservation District Use Application from the State of Hawaii (issued September 22, 2000), Special Management Area Use Permit and Shoreline Setback Variance from the County of Maui (approved April 28, 1998, 1st extension May 23, 2000, 2nd extension March 6, 2001), Water Quality Certification from the State of Hawaii (issued January 26, 2001), and Department of Army Permit No. 200000171 (issued April 19, 2001).

During processing of the Department of Army permit, the Historic Preservation Division found that "there will be 'no significant historic sites affected' by the proposed undertaking", the Office of Planning re-affirmed its previous Coastal Zone Management consistency determination, the U.S. Fish and Wildlife Service stated that "...we believe the requirements of section 7 of the Endangered Species Act (ESA) have been satisfied", and the National Marine Fisheries Service (NMFS) stated that comments on the 1996 EA regarding candidate, proposed or listed endangered or threatened species remain valid.

The NMFS's recommendation to use appropriate and effective silt containment devices have been incorporated into the construction documents and as requested, the NMFS will be given the opportunity to review and comment on the contractor's Best Management Practices plan. The Corps acknowledges that some stony and soft corals may be destroyed at the mouth of the channel where new dredging will occur but the loss of significant amounts of these corals is not expected. In response to the NMFS's concern on the effects of blasting during project construction, the construction documents were modified to specify that blasting cannot be used by the contractor.

Documents concerning the proposed action, views of other interested agencies, and the various practicable means to avoid or minimize environmental harm from the construction of this project have been reviewed and evaluated. The recommended plan (modified Plan A1 as described in the 1996 EA/FONSI) complies with all applicable environmental statutes and requirements, and will not have significant adverse impacts on water quality in accordance with the Clean Water Act, Section 404(b)(1) evaluation. All public and resource agency comments have been considered and satisfactorily resolved. All practicable means to avoid or minimize environmental harm from the implementation of the recommended plan have been adopted. The public interest will be served by implementing the recommended plan.

Ronald L. Johnson

8-29-2001
Date

RONALD L. JOHNSON
Brigadier General, U.S. Army
Division Engineer

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

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

REF:PB:EAH

SEP 26 2000

FILE NO.: MA-2988B

MEMORANDUM

TO: Admiral Howard Gehring, Administrator
Division of Boating and Ocean Recreation

FROM: Dean Y. Uchida, Administrator

SUBJECT: Conservation District Use Application (CDUA) MA-2988 for Light-Draft Navigation Improvements at Kahului Harbor

I am pleased to inform you that on September 22, 2000, the Board of Land and Natural Resources (Board) approved your CDUA for the construction of light-draft navigation improvements at Kahului Harbor, subject to the following conditions:

1. The applicant shall comply with all applicable statutes, ordinances, rules, and regulations of the federal, state, and county governments, and applicable parts of Chapter 13-5, Hawaii Administrative Rules (HAR), including the standard conditions listed in 13-5-42, HAR;

2. The applicant shall comply with all applicable Department of Health administrative rules;

3. Before proceeding with any work authorized by the department or the board, the applicant shall submit four copies of the construction plans and specifications to the chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to the applicant. Plan approval by the chairperson does not constitute approval required from other agencies;

4. Any work or construction to be done on the land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the chairperson, and, unless otherwise authorized, shall be completed within three years of the approval of such use. The applicant shall notify the department in writing when construction activity is initiated and when it is completed;

5. All representations relative to mitigation set forth in the accepted environmental

assessment or impact statement for the proposed use are incorporated as conditions of the permit:

6. In issuing the permit, the department and board have relied on the information and data which the applicant has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false, incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;

7. When provided or required, potable water supply and sanitation facilities shall have the approval of the department of health and the board of water supply;

8. Provisions for access, parking, drainage, fire protection, safety, signs, lighting, and changes on the landscape shall be provided;

9. Where any interference, nuisance, or harm maybe caused, or hazard established by the use, the applicant shall be required to take measures to minimize or eliminate the interference, nuisance, harm, or hazard;

10. Obstruction of public roads, trails, and pathways shall be minimized. If obstruction is unavoidable, the applicant shall provide roads, trails, or pathways acceptable to the department;

11. During construction, appropriate mitigation measures shall be implemented to minimize impacts to off-site roadways, utilities, and public facilities;

12. Cleared areas shall be revegetated within thirty days unless otherwise provided for in a plan on file with and approved by the department;

13. The applicant shall use silt curtains around dredged areas during dredging when practicable and feasible and around areas where any dredged material will be stored;

14. The applicant shall not conduct any blasting in Kahului Harbor;

15. The applicant shall obtain all necessary federal, state and county approvals for the disposal of dredged material;

16. Other terms and conditions as prescribed by the chairperson; and

17. Failure to comply with any of these conditions shall render this permit void.

Please acknowledge receipt of this letter and acceptance of the above conditions by signing in the space provided below and returning a copy to us within thirty (30) days.

Should you have any questions on this matter please contact our Planning Branch at (808) 587-0380.

Receipt acknowledged

Signature – DOBOR

9/28/00

Date

c: Maui Board Member
DOCARE
DOH
County of Maui, Department of Planning

LINDA LINGLE
Mayor

DAVID W. BLANE
Director

LISA M. NUYEN
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

CLAYTON I. YOSHIDA
Planning Division

AARON H. SHINMOTO
Zoning Administration and
Enforcement Division

May 12, 1998

Mr. Harry Murakami
Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, Hawaii 96813-4898

Dear Mr. Murakami:

RE: Kahului Light Draft Navigation Improvements, Job H.C. 4171, Special Management Area Use Permit and Shoreline Setback Variance, TMK: 3-7-01:21, 23, Kahului, Maui, Hawaii (SM1 970007, SSV 970003)

At its regular meeting of April 28, 1998, the Maui Planning Commission (Commission) reviewed the above request and after due deliberation, voted to grant approval, subject to the following conditions:

STANDARD CONDITIONS OF APPROVAL

1. That construction of the proposed project shall be initiated by May 1, 2000. Further, initiation of construction shall be determined as construction of off-site improvements, issuance of a foundation permit and initiation of construction of the foundation, or issuance of a building permit and initiation of building construction, whichever occurs first. Failure to comply within this two (2) year period will automatically terminate this Special Management Area Use Permit unless a time extension is requested no later than ninety (90) days prior to the expiration of said two (2) year period.

2. That the construction of the project shall be completed within five (5) years after the date of its initiation. Failure to complete construction of this project will automatically terminate the subject Special Management Area Use Permit.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793

3. That full compliance with all applicable governmental requirements shall be rendered.

4. That the conditions of this Shoreline Setback Variance and the Special Management Area Use Permit shall be self-enforcing and, accordingly, upon due notice by the Maui Planning Department (Department) to the permit holder and the Maui Planning Commission that there is prima facie evidence that a breach has occurred, the permit shall be automatically suspended pending a hearing on the continuity of such Shoreline Setback Variance and the Special Management Area Use Permit, provided that written request for such a hearing is filed with the Department within ten (10) days of the date of receipt of such notice of alleged breach. If no request for hearing is filed within said ten (10) day period, the Maui Planning Commission may revoke said Shoreline Setback Variance and Special Management Area Use Permit.

5. That the applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject Shoreline Setback Variance and Special Management Area Use Permit and shall defend, indemnify and hold the County of Maui harmless from and against any loss, liability, claim or demand arising out of this permit.

6. That appropriate measures shall be taken during construction to mitigate the short-term impacts of the project relative to soil erosion from wind and water, ambient noise levels and traffic disruptions. Precautions shall be taken to prevent eroded soils, construction debris and other contaminants from excessively entering the coastal waters.

7. That no construction, operation of equipment, storage of materials, excavation or deposition of soil or other materials shall occur seaward of the certified shoreline, dated December 8, 1992, unless approval is granted by the Department of Land and Natural Resources and the U. S. Army Corps of Engineers.

8. That final construction shall be in accordance with preliminary architectural and engineering plans submitted March 20, 1997,

and shown as Exhibits 2, 2A to 2D of the Planning Department's Report, for the Maui Planning Commission meeting of April 28, 1998.

9. That the applicant shall submit to the Planning Department five (5) copies of a detailed report addressing its compliance with the conditions established with the subject Shoreline Setback Variance and Special Management Area Use Permit. A final compliance report shall be submitted to the Planning Department for review and approval within sixty (60) days of completion of construction.

10. That the subject Shoreline Setback Variance and Special Management Area Use Permit shall not be transferred without the prior written approval of the Maui Planning Commission. However, in the event that a contested case hearing preceded issuance of said Shoreline Setback Variance and Special Management Area Use Permit, a public hearing shall be held upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

11. That appropriate measures shall be taken during construction to mitigate the short-term impacts of the project relative to soil erosion and dust from water and wind, ambient noise levels, and traffic disruptions.

12. That the applicant shall submit plans regarding the location of any construction-related structures such as, but not limited to, trailers, sheds, equipment and storage areas and fencing to be used during the construction phase and location of dredged material prior to stockpiling on the adjacent County property to the Maui Planning Department for review and approval.

13. That the applicant shall develop the property in substantial compliance with the representations made to the Commission in obtaining the Special Management Area Use Permit. Failure to so develop the property may result in the revocation of the permit.

Enclosed for your information is a copy of the Maui Planning Department's Report and Recommendation Memorandum dated August 12, 1997.

SPECIAL CONDITIONS

14. That the Applicant shall provide the following road and street lighting improvements proposed to mitigate project-related traffic impacts, as recommended by "The Traffic Management Consultant" in their Traffic Impact Analysis Report attached as Exhibit 14 in the Planning Department's Report prior to the opening of the new boat launch facility:

    "B. 1. The boat launch facility driveway will be widened to provide separate left turn and right turn lanes.

    2. The inbound lane of the boat launch facility driveway will be widened as necessary to accommodate the vehicle/boat trailer access.

    3. The street lighting will be installed on Kahului Beach Road at the boat launch facility driveway."

15. That the Applicant will work with the State Department of Transportation, Highways Division, to seek approval and funding to provide the following traffic improvements to Kahului Beach Road proposed to mitigate existing roadway deficiencies, as recommended by "The Traffic Management Consultant" in their Traffic Impact Analysis Report attached as Exhibit 14 in the Planning Department's Report:

    "A. 1. Construct an exclusive left turn lane on the southbound Kahului Beach Road within the existing grass median to provide for adequate deceleration length.

2. Construct a median storage lane on the southbound Kahului Beach Road within the existing median, to facilitate the left turn movement from the boat launch driveway.

3. Construct a right turn taper on northbound Kahului Beach Road at the boat launch facility driveway to facilitate the turning movements of large vehicle/boat trailers."

16. That the Applicant shall comply with the recommendations of the Board of Water Supply to conserve water and protect the water resources during construction and adopt construction-related Best Management Practices (BMPs).

For your information, the Department discovered that there was a "misnumbering" of the conditions, wherein Condition No. 12 was followed by Condition No. 14. Therefore, in this approval letter, the numbering after Condition No. 12 has been corrected.

Enclosed for your information is a copy of the Maui Planning Department's Report and Recommendation Memorandum dated April 28, 1998. In addition, enclosed for your records is the original letter from the Department of Parks and Recreation received after the close of the public hearing and the letter from the Department of Public Works and Waste Management (DPWWM). A facsimile from the Department of Parks and Recreation and the letter from the DPWWM were distributed at the April 28, 1998 Planning Commission meeting. The Department of Fire Control sent their comments on April 30, 1998. A copy of their letter is enclosed for your records.

The Department would appreciate a copy of the notice to proceed and that the contractors be given a copy of this approval letter. If they should have any questions regarding this permit, they should call this Department. The Department would also like to have an update on what measures are being taken regarding Condition No. 16. In regards to Condition No. 9, the Department would like to clarify that a preliminary compliance report should be submitted prior to the final compliance report. To avoid any delays in the issuance of the building or grading permits, the preliminary report should be submitted prior to submittal of those permits.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Julie Higa, Staff Planner, of this office at ~~243~~-7735.

Very truly yours,

Lisa M. Nunes

for DAVID W. BLANE
Director of Planning

DWB:JMH:cmh
Enclosures
c: Maui Planning Commission
Clayton Yoshida, AICP, Planning Program Administrator
Manuel Emiliano, Division of Boating, Department of Land and Natural Resources (w/enclosures)
Robert Siarot, Maui District Engineer, Department of Transportation (w/enclosures)
Julie Higa, Staff Planner
State Department of Health, Honolulu (w/enclosures)
State Department of Health, Maui (w/enclosures)
Department of Land and Natural Resources (w/enclosures)
Department of Land and Natural Resources, Historic Preservation Division (w/enclosures)
Department of Land and Natural Resources, Maui (w/enclosures)
State Department of Business, Economic Development and Tourism, Office of Planning (w/enclosures)
U. S. Army Corps of Engineers (w/enclosures)
Police Department (w/enclosures)
Department of Water Supply (w/enclosures)
Department of Public Works and Waste Management (w/enclosures)
Department of Parks and Recreation (w/enclosures)
Department of Transportation (w/enclosures)
Department of Fire Control (w/enclosures)
CZM File (w/enclosures)
Project File
General File (S:\ALL\JULIE\KAHHARBO\KAHAPPR.LTR)

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

May 26, 2000

Mr. Howard B. Gehring, Acting Administrator
State of Hawaii
Department of Land and Natural Resources
Division of Boating and Ocean Recreation
333 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Gehring:

RE: Kahului Light Draft Navigation Improvements, Job H.C. 4171, Special Management Area Use Permit and Shoreline Setback Variance Time Extension and Amendment to Plans, TMK: 3-7-01:21, 23, Kahului, Island of Maui, Hawaii (SM1 970007) (SSV 970003)

At its regular meeting of May 23, 2000, the Maui Planning Commission (MPC) reviewed the above-referenced request and after due deliberation, voted to grant approval, subject to the following conditions:

1. That construction of the proposed project shall be initiated by May 1, 2001. Initiation of construction shall be determined as construction of offsite improvements, issuance of a foundation permit and initiation of construction of the foundation, or issuance of a building permit and initiation of building construction, whichever occurs first. Failure to comply within this period will automatically terminate this Special Management Area Use Permit and Shoreline Setback Variance unless a time extension is requested no later than ninety (90) days prior to the expiration of said one (1) year period. The Maui Planning Director (Director) shall review and approve a time-extension request but may forward said request to the MPC for its review and approval.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

The permit holder or any aggrieved person may appeal to the MPC any action taken by the Director on the subject permit no later than ten (10) days from the date the Director's action is reported to the MPC.

2. That the construction of the project shall be completed within five (5) years after the date of its initiation. Failure to complete construction of this project will automatically terminate the Special Management Area Use Permit and Shoreline Setback Variance. A time extension shall be requested no later than ninety (90) days prior to the completion deadline. The Director shall review and approve a time-extension request but may forward said request to the MPC for its review and approval.

   The permit holder or any aggrieved person may appeal to the MPC any action taken by the Director on the subject permit no later than ten (10) days from the date the Director's action is reported to the MPC.

3. That full compliance with all applicable governmental requirements shall be rendered.

4. That the applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject Shoreline Setback Variance and Special Management Area Use Permit and shall defend, indemnify and hold the County of Maui harmless from and against any loss, liability, claim or demand arising out of this permit.

5. That appropriate measures shall be taken during construction to mitigate the short-term impacts of the project relative to soil erosion from wind and water, ambient noise levels and traffic disruptions. Precautions shall be taken to prevent eroded soils, construction debris and other contaminants from excessively entering the coastal waters.

6. That no construction, operation of equipment, storage of materials, excavation or deposition of soil or other materials shall occur seaward of the certified shoreline, dated December 8, 1992, unless approval is granted by the Department of Land and Natural Resources and the Army Corps of Engineers.

7. That final construction shall be in accordance with preliminary architectural and engineering plans submitted on March 13, 2000, of the Department's Report for the MPC's May 23, 2000 meeting.

8. That the applicant shall submit to the Department five (5) copies of a detailed report addressing its compliance with the conditions established with the subject Shoreline Setback Variance and Special Management Area Use Permit. A Final Compliance Report shall be submitted to the Department for review and approval within sixty (60) days of completion of construction.

9. That the subject Special Management Area Use Permit shall not be transferred without prior written approval in accordance with Section 12-202-17(d) of the Special Management Area Rules of the MPC. However, in the event that a contested case hearing preceded issuance of said Special Management Area Use Permit, a public hearing shall be held upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

10. That the applicant shall submit plans regarding the location of any construction-related structures, such as, but not limited to trailers, sheds, equipment and storage areas and fencing to be used during the construction phase and location of dredged material prior to stockpiling on the adjacent County property to the Department for its review and approval.

11. That the applicant shall develop the property in substantial compliance with the representations made to the MPC in obtaining the Special Management Area Use Permit. Failure to so develop the property may result in the revocation of the permit.

SPECIAL CONDITIONS

12. That the Applicant shall provide the following road and street lighting improvements proposed to mitigate project-related traffic impacts, as recommended by "The Traffic Management Consultant" in their *Traffic Impact Analysis Report* attached as Exhibit 14 in the Department's Report prior to the opening of the new boat-launch facility:

"B. 1. The boat-launch facility driveway will be widened to provide separate left-turn and right-turn lanes.

2. The inbound lane of the boat-launch facility driveway will be widened as necessary to accommodate the vehicle/boat trailer access.

3. The street lighting will be installed on Kahului Beach Road at the boat-launch facility driveway."

13. That the Applicant will work with the State Department of Transportation, Highways Division, to provide the following traffic improvements to Kahului Beach Road proposed to mitigate existing roadway deficiencies, as recommended by "The Traffic Management Consultant" in their Traffic Impact Analysis Report attached as Exhibit 14 in the Department's Report:

"A. 1. Construct an exclusive left-turn lane on the southbound Kahului Beach Road within the existing grass median to provide for adequate deceleration length.

2. Construct a median-storage lane on the southbound Kahului Beach Road within the existing median to facilitate the left-turn movement from the boat-launch driveway.

3. Construct a right-turn taper on northbound Kahului Beach Road at the boat-launch facility driveway to facilitate the turning movements of large vehicle/boat trailers."

14. That the Applicant shall comply with the recommendations of the Board of Water Supply to conserve water and protect the water resources during construction and adopt construction-related Best Management Practices (BMP).

Further, the conditions of this Special Management Area Use Permit shall be enforced pursuant to Sections 12-202-23 and 12-202-25 of the Special Management Area Rules for the MPC.

Enclosed for your information is a copy of the Department's Report and Recommendation dated May 23, 2000.

Thank you for your cooperation. If additional clarification is required, please contact Ms. Julie Higa, Staff Planner, of this office at 270-7814.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:JMH:csy
Enclosures
c: Clayton Yoshida, AICP, Deputy Planning Director
Julie Higa, Staff Planner (w/Enclosures)
Charles Jencks, Dept. of Public Works and Waste Management (w/Enclosures)
Floyd Miyazono, Dept. of Parks and Recreation (w/Enclosures)
Tom Phillips, Police Chief (w/Enclosures)
Robert Siarot, Highways Division, Dept. of Transportation (w/Enclosures)
Esther Ueda, State Land Use Commission (w/Enclosures)
Dean Uchida, Dept. of Land and Natural Resources, Land Division (w/Enclosures)
Office of Planning, CZM Program
LUCA (2)
Project File
CZM File (w/Enclosures)
General File
S:\ALL\JULIE\KAHHARBO\TIMEXTAP.LTR

JAMES "KIMO" APANA
Mayor

JOHN E. MIN
Director

CLAYTON I. YOSHIDA
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 6, 2001

Mr. Howard B. Gehring, Acting Administrator
State of Hawaii
Department of Land and Natural Resources
Division of Boating and Ocean Recreation
333 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Gehring:

RE: Kahului Light Draft Navigation Improvements, Job H.C. 4171, Special Management Area Use Permit and Shoreline Setback Variance Time Extension, TMK: 3-7-01:21, 23, Kahului, Island of Maui, Hawaii (SM1 970007) (SSV 970003)

Please be advised that the Maui Planning Department hereby grants approval of your February 22, 2001 request for the above-referenced time extension, subject to the following conditions:

1. That construction of the proposed project shall be initiated by May 1, 2002. Initiation of construction shall be determined as construction of offsite improvements, issuance of a foundation permit and initiation of construction of the foundation or issuance of a building permit and initiation of building construction, whichever occurs first. Failure to comply within this period will automatically terminate this Special Management Area Use Permit and Shoreline Setback Variance unless a time extension is requested no later than ninety (90) days prior to the expiration of said one (1) year period. The Maui Planning Director (Director) shall review and approve a time-extension request but may forward said request to the Maui Planning Commission (MPC) for its review and approval.

   The permit holder or any aggrieved person may appeal to the MPC any action taken by the Director on the subject permit no later

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250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793

than ten (10) days from the date the Director's action is reported to the MPC.

2. That the construction of the project shall be completed within five (5) years after the date of its initiation. Failure to complete construction of this project will automatically terminate the Special Management Area Use Permit and Shoreline Setback Variance. A time extension shall be requested no later than ninety (90) days prior to the completion deadline. The Director shall review and approve a time-extension request but may forward said request to the MPC for its review and approval.

   The permit holder or any aggrieved person may appeal to the MPC any action taken by the Director on the subject permit no later than ten (10) days from the date the Director's action is reported to the MPC.

3. That full compliance with all applicable governmental requirements shall be rendered.

4. That the applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject Shoreline Setback Variance and Special Management Area Use Permit and shall defend, indemnify and hold the County of Maui harmless from and against any loss, liability, claim or demand arising out of this permit.

5. That appropriate measures shall be taken during construction to mitigate the short-term impacts of the project relative to soil erosion from wind and water, ambient noise levels and traffic disruptions. Precautions shall be taken to prevent eroded soils, construction debris and other contaminants from excessively entering the coastal waters.

6. That no construction, operation of equipment, storage of materials, excavation or deposition of soil or other materials shall occur seaward of the certified shoreline, dated December 8, 1992, unless approval is granted by the Department of Land and Natural Resources and the Army Corps of Engineers.

7. That final construction shall be in accordance with preliminary architectural and engineering plans submitted on March 13, 2000, of the Department's Report for the MPC's May 23, 2000 meeting.

8. That the applicant shall submit to the Department five (5) copies of a detailed report addressing its compliance with the conditions established with the subject Shoreline Setback Variance and Special Management Area Use Permit. A Final Compliance Report shall be submitted to the Department for review and approval within sixty (60) days of completion of construction.

9. That the subject Special Management Area Use Permit shall not be transferred without prior written approval in accordance with Section 12-202-17(d) of the Special Management Area Rules of the MPC. However, in the event that a contested case hearing preceded issuance of said Special Management Area Use Permit, a public hearing shall be held upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

10. That the applicant shall submit plans regarding the location of any construction-related structures, such as, but not limited to trailers, sheds, equipment and storage areas and fencing to be used during the construction phase and location of dredged material prior to stockpiling on the adjacent County property to the Department for its review and approval.

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SPECIAL CONDITIONS

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14. That the Applicant shall comply with the recommendations of the Board of Water Supply to conserve water and protect the water resources during construction and adopt construction-related Best Management Practices (BMP).

Further, the conditions of this Special Management Area Use Permit shall be enforced pursuant to Sections 12-202-23 and 12-202-25 of the Special Management Area Rules for the MPC.

Thank you for your cooperation. If additional clarification is required, please contact Matt Niles, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN
Planning Director

JEM:MCN:cmb
c: Clayton Yoshida, AICP, Deputy Planning Director
Matt Niles, Staff Planner
Julie Higa, Staff Planner
Charles Jencks, Dept. of Public Works and Waste Management
Floyd Miyazono, Dept. of Parks and Recreation
Tom Phillips, Police Chief
Robert Siarot, Highways Division, Dept. of Transportation
Esther Ueda, State Land Use Commission
Dean Uchida, Dept. of Land and Natural Resources, Land Division
Office of Planning, CZM Program
LUCA (2)
Project File
CZM File
General File
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NJAMIN J. CAYETANO
OVERNOR

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

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

In reply, please refer to:
EMD/CWB

WQC346.FNL

January 26, 2001

Lt. Col. Ronald N. Light
District Engineer
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440

Mr. Gilbert Coloma-Agaran, Chairperson
Board of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809-0621

Dear Lt. Col. Light and Mr. Coloma-Agaran:

Subject: **Section 401 Water Quality Certification (WQC) for the Kahului Harbor Light-Draft Navigation Improvements Project Kahului, Maui, Hawaii WQC 0000346/Army Authorization No. CW 95-0004 & Army File No. 200000171**

In accordance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), Chapters 91, 92 and 342D, Hawaii Revised Statutes (HRS), Part 121 of Title 40, Code of Federal Regulations (CFR), and Chapter 11-54 of the Hawaii Administrative Rules (HAR), the Department of Health (Department) has reviewed your Section 401 WQC application and appurtenant data relevant to water quality considerations for the discharge activities. The subject activity is authorized under the U.S. Department of the Army, Honolulu Engineer District (HED), Civil Works Authorization No. CW 95-0004 and Army File No. 200000171. The processing of this application and the issuance of this WQC is based on the January 7, 1997 Memorandum of Agreement between the U.S. Army Corps of Engineers (COE), HED and the Department's Clean Water Branch (CWB).

The Director of Health (Director) attests to the following statements based on information contained in the Section 401 WQC application package.

1. The Director has either:

   a. Examined the application submitted by the U.S. Army COE-HED and bases its certification upon an evaluation of the information contained in such application which is relevant to water quality considerations; or

   b. Examined other information furnished by the U.S. Army COE-HED sufficient to permit the statement described in Item No. 2. below.

2. With the conditions imposed in Item 3. below, there is a reasonable assurance that the activity will be conducted in a manner which will not violate the Basic Water Quality Criteria applicable to all waters and the Specific Water Quality Criteria applicable to the class of State waters where the proposed discharge(s) would take place.

3. The following conditions are deemed necessary to be imposed with respect to the project activity authorized under the U.S. Army COE-HED Civil Works Authorization No. CW 95-0004 and Army File No. 200000171:

   a. The discharges evaluated under this application are limited to those resulting from the following construction activities within the Kahului Harbor:

      (1) Construction of a breakwater 130 feet long, with a crest elevation of (-)9.0 feet mean lower low water (MLLW) and crest width of 12.0 feet;

      (2) Construction of an entrance channel 1,030 feet long, 50 feet wide, dredged to a depth of (-)9.5 feet MLLW;

      (3) Construction of a turning basin measuring 100 feet by 100 feet, dredged to a depth of (-)8.5 MLLW;

      (4) Construction of a three-lane boat launch ramp with two concrete earwalks, one 125 feet long and the other 50 feet long and a rock revetment on each side of the ramp;

      (5) Removal of an existing rock groin;

      (6) Removal of the existing single-lane boat launch ramp; and

      (7) Dredging of the entrance channel and turning basin.

b. Materials to be placed directly into Kahului Harbor or discharges resulting from the proposed construction activities evaluated under this Section 401 WQC application include the following:

(1) Incidental discharges from the dredging of about 8,700 cubic yards of material from the harbor basin for the turning basin and the new entrance channel;

(2) Incidental discharges from the removal of the existing rock groin and single-lane boat launch;

(3) Placement of 2,500 cubic yards of the basalt stone to be used for the construction of the breakwater;

(4) Placement of twelve (12) pre-casted concrete piles for the construction of the two catwalks;

(5) Placement of twenty-four (24) 10-feet-by-15-feet pre-casted concrete sections to be used for the construction of the new three-lane boat launch ramp;

(6) Placement of 3 cubic yards of quarry rocks at the end of the launch ramp;

(7) Placement of 250 to 2,000 pound stones and a 12-inch underlayer of filter rocks for the construction of the rock revetment on either side of the new boat launch ramp;

c. This Section 401 WQC shall become valid only when the following condition has been satisfied:

A complete Environmental Protection Plan, as required in Section 01430 of the "Specifications" (dated April 2000) has been submitted to the CWB for review and comment and all related concern(s) and comment(s) are properly addressed to the Director's satisfaction. A copy of the final Environmental Protection Plan shall be submitted to the CWB.

The CWB shall have at least thirty (30) days to review and comment after receiving a copy of the complete Environmental Protection Plan.

A complete Environmental Protection Plan shall, at a minimum, include the following information:

(1) A project-related site-specific and construction method-specific Best Management Practices Plan which shall, at a minimum, include the following descriptions:

(a) Site characterization;

(b) Construction sequence;

(c) Construction method;

(d) Characteristics of the discharge and potential pollutants associated with the proposed construction activity; and

(e) Proposed control measures or treatment;

(2) An applicable monitoring plan;

(3) A detailed dredging plan;

(4) A dewatering, treatment, and effluent monitoring plan, if applicable; and

(5) Additional mitigative/compensatory measures, controls or treatment measures, or contingency plan needed because of the construction method used or other unforeseen circumstances;

d. This Section 401 WQC.

(1) Shall remain valid for two (2) years from the date of this letter or until the applicable State Water Quality Standards is revised or modified or the applicable Department of the Army permit expires or is revised or modified, whichever is earlier. If the applicable State Water Quality Standards is revised or modified during the two (2) year period and such that the activity complies with the revision(s) or modification(s), this Section 401 WQC shall continue to be valid for the remainder of the two (2) year period.

(2) May be revoked at the Director's discretion or when any of the following is identified:

(a) The U.S. Army COE-HED shall comply with all new water quality standards as adopted by the Department. In any case where:

(i) Water quality standards applicable to the waters into which the activity may discharge are subsequently established before the activity is completed; or

(ii) The Director determines that the activity is violating water quality standards;

The CWB shall notify the U.S. Army COE-HED of the violation or noncompliance with the new water quality standards. The U.S. Army COE-HED shall cease the violation or noncompliance within one hundred eighty (180) days of the date of the notice. If the U.S. Army COE-HED fails within one hundred eighty (180) days of the date of the notice to cease the violation or noncompliance, the Director may revoke this certification, at the Director's discretion;

(b) The discharge(s) from the activity is in violation or noncompliance with any existing water quality standards or condition of this Section 401 WQC. The CWB shall notify the U.S. Army COE-HED of the violation or noncompliance. The U.S. Army COE-HED shall cease the violation or the noncompliance within seven (7) days of the date of the notice. If the U.S. Army COE-HED fails within seven (7) days of the date of the notice to cease the violation or noncompliance, the Director may revoke this certification, at the Director's discretion;

(c) The Section 401 WQC was obtained by misrepresentation, or there was a failure to disclose fully all relevant facts;

(d) There is a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or

(e) It is in the public interest.

e. The U.S. Army COE-HED shall:

(1) Invite the Department's representative(s) to attend the partnering, pre-construction or any other similar type of meeting that is established for the proposed construction activities;

(2) Notify the CWB [via telephone no. (808) 586-4309] and the Maui District Health Office [via telephone no. (808) 984-8234] at least three (3) working days before any construction work is to begin;

(3) Comply and shall also require the contractor(s) to comply with applicable specifications, schedules, procedures, approved Environmental Protection Plan, Best Management Practices Plan, and any other project construction related requirements, or information contained in the Section 401 WQC application dated October 2, 1996 and updated July 21, 2000 and September 20, 2000 and other submittals;

(4) Conduct or contract with a qualified laboratory/environmental consultant to conduct applicable monitoring in accordance with its monitoring plan, dated August 5, 1996, revised October 29, 1998 and July 20, 2000;

(5) Ensure that silt curtain(s) or other appropriate and effective silt containment device(s) be properly deployed prior to the commencement of any section of the in-water construction work, including dredging activities; be properly maintained throughout the entire period of the section of the in-water construction work; and not be removed until the section of the in-water work is completed and the water quality in the affected area has returned to its pre-construction condition;

(6) Not commence any dredging activity unless:

(a) Silt curtain(s) or other appropriate and effective silt containment device(s) has been properly deployed;

(b) A detailed dredging plan has been submitted to the CWB for review and comment and all dredging related concern(s) and comment(s) are properly addressed to the Director's satisfaction.

The detailed dredging plan shall, at a minimum, include the following information:

(i) Method and equipment to be used for the proposed dredging;

(ii) Method and sequence to be used for dredged spoils transportation and handling;

(iii) Method and location for the dredged spoils dewatering process; and

(iv) Identification of the exact location and design of the pollution control measures to be used on a 8½" X 11" map;

(7) Ensure that all "discharges" associated with the proposed Kahului Harbor Light-Draft Navigation Improvements construction activities be conducted in a manner that will comply with the "Basic Water Quality Criteria Applicable to All Waters" as specified in HAR, Section 11-54-04(a) ;

(8) Ensure that all material(s) placed or to be placed in State waters be free of waste metal products, organic materials, debris and any pollutants at toxic or potentially hazardous concentrations to aquatic life as identified in HAR, Section 11-54-04(b);

(9) Ensure that construction debris be contained and prevented from entering or re-entering State waters;

(10) Cease immediately the portion of the construction work or discharge that is causing:

(a) Noncompliance with HAR, Section 11-54-04(a) or HAR, Section 11-54-04(b); or

(b) Damage or will cause damage to the live coral;

The U.S. Army COE-HED shall not resume the portion of the construction work or discharge until adequate mitigative measures are implemented and appropriate corrective actions are taken and concurred by the Department;

(11) Report immediately any spill(s) or other contamination(s) that occurs at the project site to the CWB;

(12) Notify the CWB within fourteen (14) days after the completion of the proposed construction activities; and

(13) Ensure that all temporarily constructed facilities or structures, including the silt containment device(s), be removed immediately after the completion of the in-water construction and when the water quality in the affected area has returned to its pre-construction condition.

f. Work shall be discontinued during flood conditions.

g. Clearing and grubbing shall be held to the minimum.

h. There shall be no blasting or explosives used for the dredging process.

i. The effectiveness and adequacy of the implemented Best Management Practices and/or environmental protection measures shall be reviewed and updated as often as needed. Any change(s) to the approved Environmental Protection Plan, Best Management Practices Plan, or Applicable Monitoring Plan or correction(s) or modification(s) to information already on file with the Department shall be submitted to the CWB, for review and comment, as such change(s), correction(s) or modification(s) arise. The U.S. Army COE-HED shall properly address the CWB's comment(s) and/or concern(s) to the Director's satisfaction before such change(s), correction(s) or modification(s) become effective.

j. By applying for and accepting the Section 401 WQC, the U.S. Army COE-HED agrees that the Department may conduct routine inspection of the construction site in accordance with HRS, Section 342D-8.

k. Demolition debris and/or dredged spoils shall be removed from the aquatic environment and be disposed of at the upland State or County approved sites. A Solid Waste Disclosure Form for Construction Sites shall be completed and returned to the Department's Office of Solid Waste Management. No construction material or construction-related materials shall be stockpiled, stored or placed in the aquatic environment or stored or placed in ways that will disturb the aquatic environment.

l. Return flow or runoff from the dredged spoil dewatering process or from the stockpiling site shall be contained on land and not be allowed to enter State waters. Should the discharge of the return flow or runoff from the dredged spoil dewatering site be unavoidable, it shall be properly handled in such a manner that the effluent discharges will comply with the applicable State Water Quality Standards. A detailed dewatering design and discharge plan, including applicable effluent monitoring program, shall be submitted to the CWB for review and comment. This dewatering plan may be incorporated into the contractor's dredging plan as part of the Environmental Protection Plan.

m. The U.S. Army COE-HED shall obtain a National Pollutant Discharge Elimination System (NPDES) permit for any discharge(s) that is regulated pursuant to Section 402 of the Act; HRS, Chapter 342; Title 40 CFR; and HAR, Chapter 11-55.

n. Benchmarks shall be established prior to the commencement of any breakwater construction work and shall act as photograph stations to allow the comparison of the site conditions before and after the construction of the breakwater. In addition to the required water chemistry monitoring, photographs shall be taken before and after the completion of the breakwater construction. Copies of the photographs taken should note the date and time they were taken. Photographs taken before the project construction shall be submitted to the Department together with the required site-specific Best Management Practices Plan. Photographs taken after the construction shall be submitted to the Department within two (2) weeks after the completion of the construction project.

o. There shall be no wash of any stones or concrete slabs or piles, either from on-site or off-site, in State waters. Effluent from any washing activity shall be properly contained and treated on land and not be discharged, either directly or indirectly, into State waters unless a NPDES permit issued under the authorization of Section 402 of the Act is obtained.

p. Effluent from the concrete slab and pile casting process shall be properly contained and treated on land and not be discharged, either directly or indirectly, into State waters unless a NPDES permit issued under the authorization of Section 402 of the Act is obtained.

The U.S. Army COE-HED has published a Notice of Proposed Section 401 WQC in the Hawaii State and County Public Notices on December 11, 2000 for the subject activity.

After consideration of the expressed views of all interested persons and agencies and pertinent State statutes and rules, the Department hereby issues this Section 401 WQC to the U.S. Army COE-HED for its Civil Works Authorization No. CW 95-0004 and the Board of Land and Natural Resources for Army File No. 200000171.

The Department of Health may, on a case-by-case basis and upon the applicant's written request, administratively extend the expiration date of the Section 401 WQC for the subject project, if the Department of Health determines that there are no significant change(s) to the project scope and the change(s) will not, either individually or accumulatively, cause adverse impacts to the receiving water quality.

Enclosed are two original copies of the Section 401 WQC. Please sign and date one and return it to the CWB. Should you have any questions, please contact Mr. Shane Sumida, Engineering Section of the CWB, at (808) 586-4309.

Sincerely,

BRUCE S. ANDERSON, Ph.D., M.P.H.
Director of Health

WE AGREE WITH THE TERMS AND CONDITIONS OF THIS LETTER:

Ronald N. Light LTC, EN

U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT ENGINEER

16 March 2001

Date

Enclosures: 1. Solid Waste Disclosure Form for Construction Sites
2. Monitoring Plan (dated July 20, 2000)

c: State DBEDT, CZM Program (w/o encls.)
State DLNR, Small Boat Harbor Div. (w/o encls.)
State DLNR, DAR (w/o encls.)
State DOH, SHWB (w/o encls.)
State DOT, Harbors Div. (w/o encls.)
DHSA, Maui (w/o encls.)
Chief, DEHP, Maui (w/encl. #2)

U.S. Army Corps of Engineers
Honolulu District

PUBLIC NOTICE

Public Notice No. 200000171 Date: June 2, 2000

Reply to: Respond by: July 3, 2000

District Engineer
U.S. Army Corps of Engineers
Building 230/POH-EC-R
Fort Shafter, Hawaii 96858-5440

200000171
KAHULUI LIGHT DRAFT NAVIGATIONAL IMPROVEMENTS
KAHULUI, ISLAND OF MAUI, STATE OF HAWAII

1. APPLICANT: Division of Boating and Ocean Recreation, Department of Land and Natural Resources, State of Hawaii.

2. POINT OF CONTACT: Mr. Napoleon Agraan, Engineering Design Section, Harbors Division, Department of Transportation, State of Hawai.

3. APPLICABLE STATUTORY AUTHORITY: Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344.

4. LOCATION OF PROPOSED ACTIVITY: Kahului, Island of Maui.

5. PROJECT PURPOSE AND DESCRIPTION:

a. Purpose: The basic purpose of the project is to provide commercial light-draft navigation improvements for the north side of the island of Maui by installing an improved launch ramp in Kahului Harbor.

b. Background: This activity is the State of Hawaii portion of a U.S. Army Corps of Engineers (Corps) Civil Works Project. The Federal portion of the project consists of: a turning basin 100 feet by 100 feet, dredged to a depth of -8.5 feet mean lower low water (MLLW); an entrance channel 1,030 feet long and 30 feet wide, dredged to a depth of -9.5 feet MLLW; and a rubblemound breakwater 130 feet long, with a crest elevation of +9.0 feet. An environmental assessment for the total project was prepared and circulated by the Corps with a Finding of No Significant Impact (FONSI) dated October 23, 1996

c. Description: The State of Hawaii portion of the project, and the object of this Public Notice, consists of: the demolition of the existing single lane launch ramp and portion of the shoreline revetment; construction of a new three lane launch ramp; construction of a catwalk 180 feet long; and reconstruction of the revetment.

6. IMPACTS OF PROPOSED ACTIVITIES IF AUTHORIZED:

No long range adverse impacts are expected. Short term impacts associated with project construction may include: increased traffic, dust and noise along the shore line; an increase in turbidity at the site of dredging; destruction of the benthic community in the dredge area; temporary closure of the launch ramp; and interference with boat traffic and surfing in the immediate area of construction.

7. IMPACT ON HISTORIC PROPERTIES:

There are no known historic properties within the project area. In the event that unanticipated or inadvertent discovery of historic properties occurs during project execution, all work shall be stopped and the State Historic Preservation Office will be notified. This is a general condition that would be included in the Department of the Army (DA) permit.

This notice has been sent to the State Historic Preservation Officer, the State Office of Hawaiian Affairs, Hui Malama I Na Kupuna O Hawaii Nei, the Keeper of the National Register of Historic Places, and the Secretary of the Interior. Any comments they have regarding historic properties and cultural resources will be considered before a final decision is made on the permit.

8. IMPACT ON ENDANGERED SPECIES:

No effects are expected on candidate, proposed or listed endangered or threatened species. Informal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act was conducted for the project. The NMFS response (contained in the project EA, indicated that the Humpback Whale and the Green Sea Turtle may occur in the area, but because the construction activities will take place within the harbor, no special considerations except the use of best management practices to limit the generation of fines are necessary.

This notice has been sent to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service in accordance with Section 7 of the Endangered Species Act, and the State of Hawaii Department of Land and Natural Resources. Any comments they have on Federal or State of Hawaii endangered or threatened species, or their critical habitat, will be considered before a final decision is made on the permit.

9. ESSENTIAL FISH HABITAT: The project is not likely to have a significant effect on essential fish habitat (EFH) since the activity

will occur within the Kahului harbor, and affects will be limited to a small portion of the harbor.

This notice has been sent to the National Marine Fisheries Service for their comments or EFH Conservation Recommendations pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act.

10. **OTHER GOVERNMENT AUTHORIZATIONS/CERTIFICATIONS:**

Prior to the issuance of the Department of Army permit, the applicant is required to obtain a Section 401 Water Quality Certification, or waiver thereof, from the State Department of Health (DOH), Clean Water Branch and a Coastal Zone Management (CZM) Program consistency determination or waiver from the Office of Planning before the DA permit is valid. The requirements for a CZM consistency statement and accompanying information are available for public review at the Department of Business, Economic Development & Tourism, Office of Planning, CZM Program Office, 235 S. Beretania Street, 6th Floor, Honolulu, HI. 96813. Comments on the consistency statement should be submitted in writing to the Department of Business, Economic Development & Tourism, Office of Planning, CZM Program Office, P.O. Box 2359, Honolulu, HI 96804 no later than 30 days from the date of this notice.

11. **EVALUATION FACTORS:**

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof: Among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

12. **COMMENTS AND INQUIRIES:**

Interested parties may submit in writing any comments that they have on the permit. Comments should be forwarded so as to reach this District no later than 30 days from the date of this notice. Written inquiries and comments should be mailed to the address on the masthead and should refer to permit number 200000171. Further information may be obtained from William Lennan, Regulatory Branch, Honolulu Engineer District, Building

230, Fort Shafter, Hawaii, 96858, telephone (808) 438-9986 or FAX 438-4060. This Public Notice may also be obtained from the internet at http://www.pod.usace.army.mil/news/newsrel.html.

13. **REQUEST FOR PUBLIC HEARING:**

Any person may request, in writing, within 30 days from the date of this notice that a public hearing be held to consider the proposed permit. Requests for public hearing shall specifically state the reasons for holding a public hearing.

(Attachments)
Figure 1. Location Map
Figure 2. Site Map
Figure 3. Launching Ramp Plan - Existing Condition/Demolition - Removal Plan
Figure 4. New Condition - Launching Ramp Plan

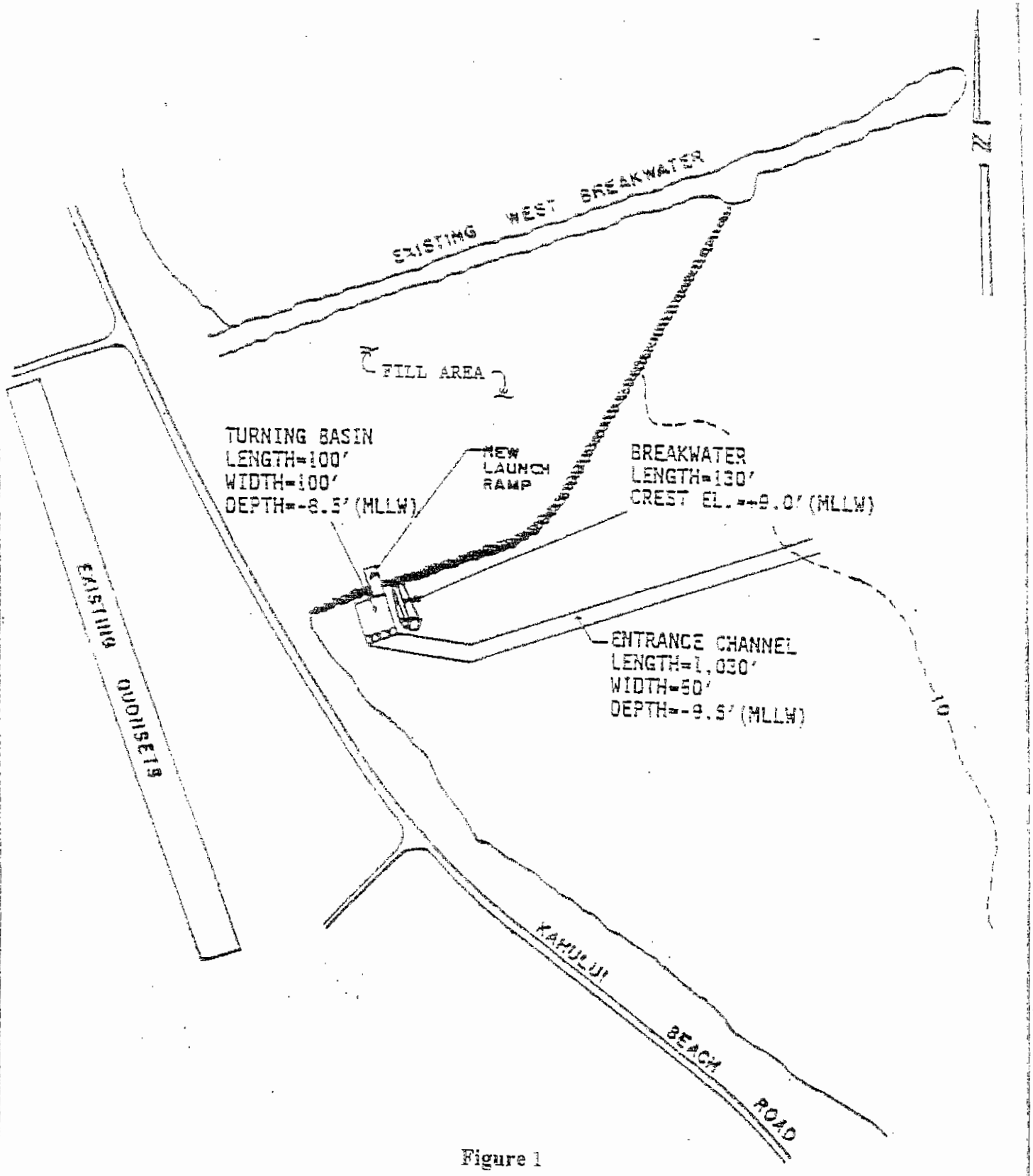


Figure 1

KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII

SITE MAP

(PLAN OF IMPROVEMENTS)

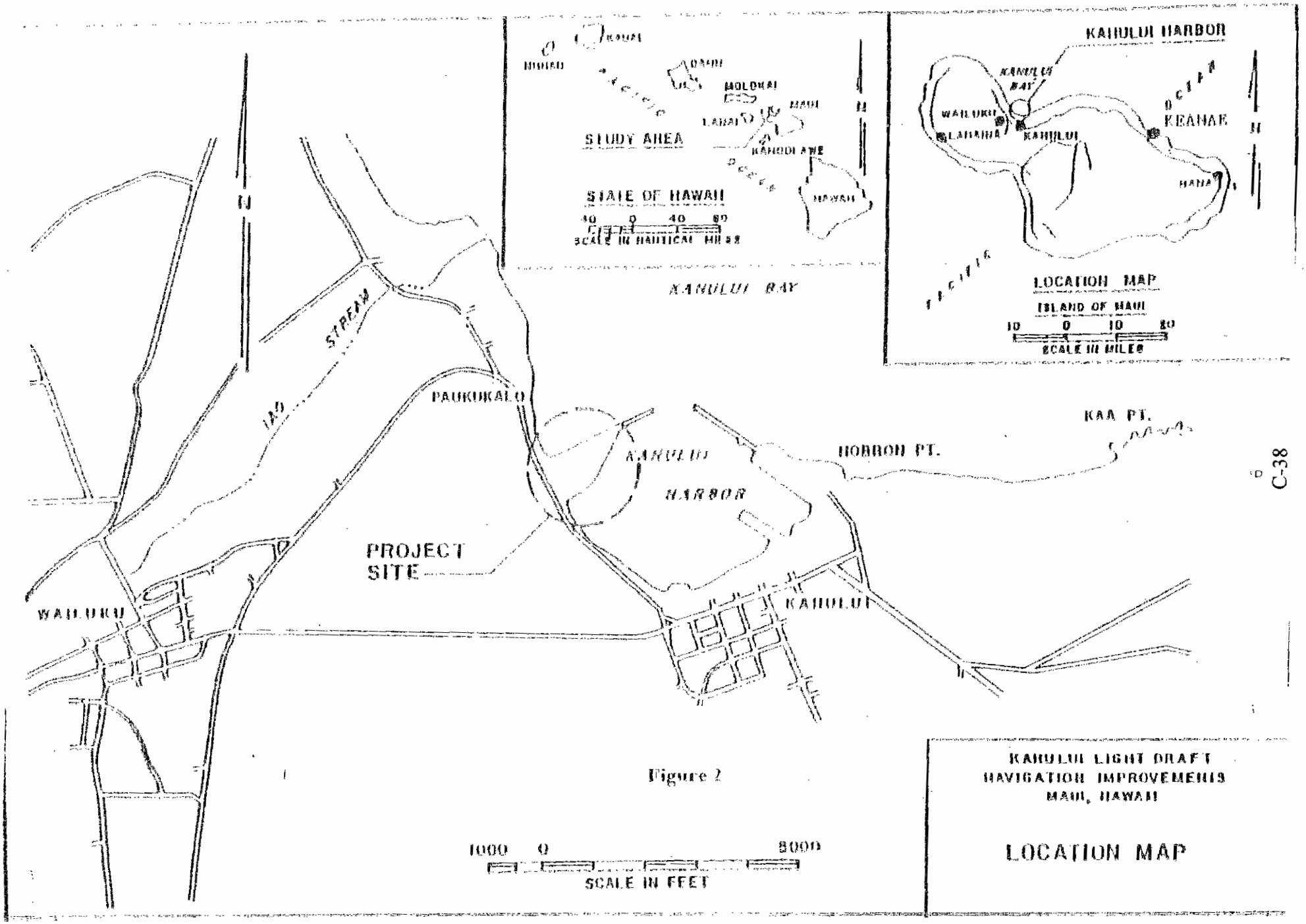
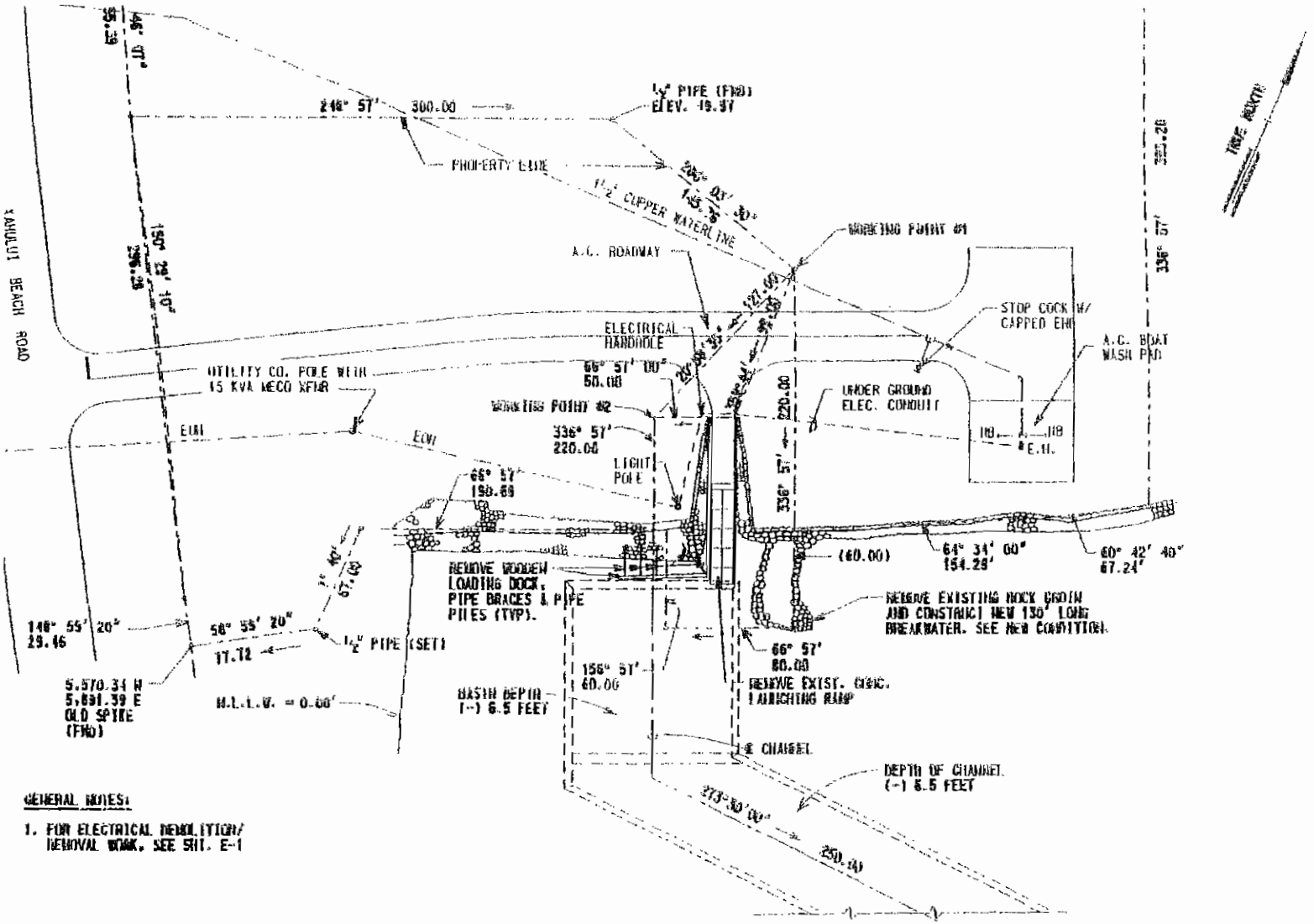


Figure 2

KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS
MAUI, HAWAII

LOCATION MAP



GENERAL NOTES:

1. FOR ELECTRICAL DEMOLITION/ REMOVAL WORK, SEE SHT. E-1

SURVEY NOTE:

AZIMUTHS AND COORDINATES REFERRED TO "LINE" ⚠

Figure 3

LAUNCHING RAMP PLAN - EXISTING CONDITION / DEMOLITION - REMOVAL PLAN

SCALE: 1" = 100'

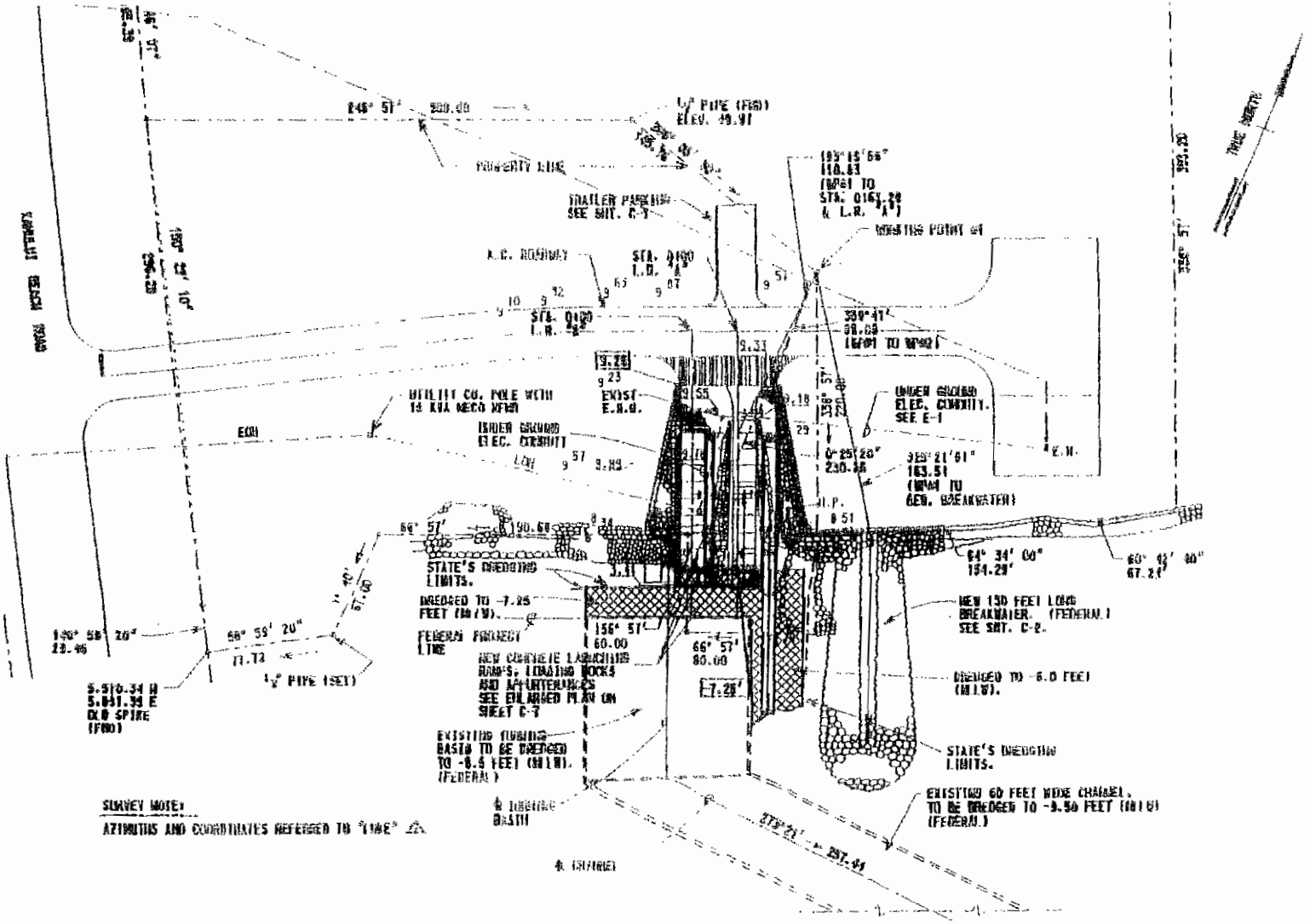


Figure 4

NEW CONDITION - LAUNCHING RAMP PLAN

SCALE: 1" = 100'

DEPARTMENT OF THE ARMY PERMIT 20000171

Permittee: State of Hawaii Department of Land and Natural Resources, Division of Boating and Ocean Recreation, 333 Queen Street, Room 300, Honolulu, Hawaii 96813

Permit No: 20000171

Issuing Office: U.S. ARMY CORPS OF ENGINEERS, Honolulu Engineer District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: This project is the State of Hawaii portion of a Corps of Engineers Civil Works project. The State's project consists of the demolition of the existing single lane launch ramp and portion of the shoreline revetment; construction of a new three lane launch ramp; construction of a catwalk 180 feet long; and reconstruction of the shoreline revetment.

Purpose: The overall purpose of the project is to provide commercial light-draft navigation improvements for the north side of the island of Maui..

Project Location: Kahului Harbor, Island of Maui, Hawaii.

General Conditions:

1. The time limit for completing the work authorized ends on **April 2, 2006**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least two months before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State of Hawaii coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See page 4.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

James L Schoocraft 4/17/01

NAME JAMES L. SCHOOCRAFT (DATE)
Title Acting Administrator

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Ronald N. Light 4/19/01

RONALD N. LIGHT (DATE)
Lieutenant Colonel, U.S. Army
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) (DATE)

II. Special Conditions:

A. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

B. The mitigation measures proposed in the final Environmental Assessment (Section 5.7) will be fully implemented.

C. Comply with all conditions in the Federal Coastal Zone Consistency Determination.

D. There will be no runoff from the work or loading area.

E. The following conditions shall be incorporated into the project to minimize impacts to fish and wildlife resources and water quality:

(1) No project related materials shall be stockpiled in the marine environment.
(2) All project related equipment and materials placed in the water shall be free of pollutants.
(3) No contamination of the marine environment (from trash, debris disposal, etc.) shall result from project activities.
(4) A contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of petroleum spills.
(5) Turbidity and siltation from the proposed work shall be minimized and contained within the vicinity of the site through the use of effective silt containment devices and the curtailment of work during adverse weather conditions.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO

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

August 3, 2000

Mr. William Lennan
Regulatory Branch
Honolulu Engineer Division
Building 230
Fort Shafter, Hawaii 96858

LOG NO: 25956
DOC NO: 0008CD01

Dear Mr. Lennan:

SUBJECT: **National Historic Preservation Act Section 106 Review of the Proposed Kahului Light Draft Navigational Improvements. at Kahului Harbor (20000171)**
Kahului Ahupua`a. Wailuku District, Island of Maui
TMK: 3-7-10

Thank you for the opportunity to comment on the proposed light draft navigational improvements at Kahului Harbor. Our review is based on reports, maps, and aerial photographs maintained at the Historic Preservation division: no field inspection was made of the subject property.

From the submitted plans, we understand the proposed undertaking entails the construction of the following: a turning basin 100 feet by 100 feet, dredged to a depth of –8.5 feet mean lower low water (MLLW); an entrance channel 1030 x 50 x –9.5 feet MLLW; a rubble mound breakwater 130 feet long with a crest elevation of 9 feet. In addition, the existing single lane launch ramp and a portion of the shoreline revetment will be demolished and a new three-lane launch ramp, a 180-foot catwalk will be constructed and the revetment will be reconstructed.

We have previously commented on the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the proposed undertaking (SHPD DOC NO: 9509SC20/LOG NO: 14983). We stated in our initial comments that we have no record of historic sites on this parcel. The area to be modified consists of coral fill which was deposited during earlier construction work at the harbor, making it unlikely that significant historic sites are present. As the plans have not changed since being submitted to this office in 1995, we find that there will be "no significant historic sites affected" by the proposed undertaking.

Please call Cathleen Dagher at 692-8023 if you have any questions.

Aloha,

TIMOTHY E. JOHNS, Chairperson and
State Historic Preservation Officer

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

BENJAMIN J. CAYETANO
GOVERNOR
SEIJI F. NAYA, Ph.D.
DIRECTOR
PHILIP J. BOSSERT
DEPUTY DIRECTOR
DAVID W. BLANE
DIRECTOR OFFICE OF PLANNING

OFFICE OF PLANNING
235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-8655

June 7, 2000

Mr. William Lennan
Regulatory Branch
Honolulu Engineer District
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Mr. Lennan:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for Kahului Light Draft Navigational Improvements, Kahului, Maui. Department of the Army Permit File No. 200000171

The proposal by the State Division of Boating and Ocean Recreation to demolish the existing single-lane launch ramp and portion of the shoreline revetment, and construct a new three-lane launch ramp, a catwalk 180 feet long and reconstruct the revetment was previously reviewed for CZM consistency. Our previous concurrence dated February 25, 1997 (enclosed) included the proposed improvements and was based on the final environmental assessment. CZM consistency concurrence was issued on the basis of the mitigation measures contained in section 5.7 of the final environmental assessment dated September 1996. This condition still applies to the project.

This CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or county agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

David W. Blane
Director
Office of Planning

Enclosure

c: U.S. National Marine Fisheries Service, Pacific Area Office
U.S. Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Health, Clean Water Branch
Department of Land & Natural Resources,
Planning & Technical Services Branch
Division of Boating and Ocean Recreation
Planning Department, County of Maui

Ref. No. P-6258

February 25, 1997

Mr. Ray H. Iyo, P.E.
Director of Engineering
and Technical Services
Department of the Army
Pacific Ocean Division, Corps of Engineers
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Iyo:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for Construction of Commercial Light Draft Navigation Improvements within Kahului Harbor, Maui

We have reviewed the final environmental assessment for the project, dated September 1996, and concur with your determination that the previous CZM consistency approval, dated December 7, 1988, fulfills CZM consistency review requirements. This CZM consistency concurrence is issued on the basis of the project proposal and mitigation measures contained in section 5.7 of the final environmental assessment.

This CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Rick Egged
Director
Office of Planning

cc: U.S. National Marine Fisheries Service, Pacific Area Office
U.S. Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Health, Clean Water Branch
Department of Land & Natural Resources,
Planning & Technical Services Branch
Division of Boating and Ocean Recreation
Planning Department, County of Maui

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaiyi 96850

In reply refer to: DH

JUL _ 5 2000

Mr. Napoleon Agraan
Engineering Design Section
U.S. Army Corps of Engineers
Building 230 / POH-EC-R
Fort Shafter, Hawaii 96858

Re: Light Draft Navigational Improvements, Kahului Harbor, Kanului, Maui

Dear Mr. Agraan:

The U.S. Fish and Wildlife Service (Service) has reviewed the Public Notice for light draft navigational improvements, Kahului Harbor, Kahului, Maui (project). The project applicant is the Division of Boating and Ocean Recreation, Hawaii Department of Land and Natural Resources and the sponsor of this project is the U.S. Army Corps of Engineers (Corps). This letter has been prepared under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act of 1934 [16 USC 661 *et seq.*; 48 Stat. 401], as amended, the Endangered Species Act of 1973 [16 USC 1531 *et seq.*; 87 Stat. 884], as amended (Act), the National Environmental Policy Act of 1969 [42 USC 4321 *et seq.*; 83 Stat. 852], as amended, and other authorities mandating Department of the Interior concern for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

The proposed project is to dredge a turning basin of 100 feet to a depth of -8.5 feet (ft) from the mean lower low water (MLLW) mark, dredge an entrance channel that is 1,030 ft long by 50 ft wide to a depth of -9.5 ft MLLW, and create a rubblemound breakwater that is 130 ft long with a crest elevation of +9.0 ft. The Corps consulted with the National Marine Fisheries Service as required under section 7 of the Act. An environmental assessment for the entire project was prepared by the Corps with a Finding of No Significant Impact (FONSI) on October 23, 1996.

The Service has reviewed the provided information as well as other information contained in our files. To the best of our knowledge, there are no federally protected species under Service jurisdiction within the vicinity of the project. In view of this, the Service concurs with your determination that project-related effects on candidate, proposed or listed endangered or threatened species are not expected. Based on this determination, we believe the requirements of section 7 of the Endangered Species Act (ESA) have been satisfied. However, obligations under section 7 of the ESA must be

reconsidered if (1) new information reveals impacts of the defined action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

Because the proposed project site is located in a previously disturbed area, the Service does not anticipate significant adverse impacts to fish and wildlife resources to result from the proposed project. However, the Service recommends that standard Best Management Practices to minimize the degradation of water quality and impacts to fish and wildlife resources and habitats be incorporated into the project. The Service believes that incorporation of these measures into the project will greatly minimize the potential for project-related adverse impacts to fish and wildlife resources. Provided that the permit is conditioned to reflect these recommendations, the Service will not object to permit issuance.

The Service encourages early review of projects and appreciates the opportunity to review this project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Dave Hopper by telephone at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,

Paul Henson
Field Supervisor
Ecological Services

cc: USEPA,
NMFS-PIAO, Honolulu
DAR, Honolulu, Maui
CZM, Honolulu
CWB, Honolulu

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
Pacific Islands Area Office
1601 Kapiolani Boulevard, Suite 1110
Honolulu, Hawaii 96814-4047

JUL 24 2000

Lt. Colonel Ronald N. Light
District Engineer
U.S. Army Corps of Engineers, Honolulu
Building 230
Fort Shafter, Hawaii 96858-5440

Dear Colonel Light:

The National Marine Fisheries Service (NMFS) has reviewed Public Notice No. 200000171, for Kahului Light Draft Navigational Improvements, Kahului, Maui, Hawaii. The work is part of a U.S. Army Corps of Engineers (Corps) Civil Works project and has both a Federal and State of Hawaii component. The Federal portion of the project consists of: a turning basin 100 feet by 100 feet dredged to a depth of -8.5 feet mean lower low water; an entrance channel 1,030 feet long and 50 feet wide dredged to a depth of -9.5 feet; and a rubblemound breakwater 130 feet long, with a crest elevation of -9.0 feet. The State of Hawaii portion consists of: demolition of the existing single lane launch ramp; construction of a catwalk 180 feet long; and reconstruction of the revetment. This letter is provided in accordance with the Fish and Wildlife Coordination Act (FWCA), the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), and the Endangered Species Act (ESA). We offer the following comments on this project.

FWCA/Essential Fish Habitat

The public notice does not indicate the manner in which turbidity associated with the dredging and construction operation will be minimized. We recommend that appropriate and effective silt containment devices be used to prevent turbidity and potential contaminants from impacting marine resources located outside the harbor entrance. If silt containment devices are determined to be ineffective for a particular situation, then the plan should state what alternative best management practices (BMPs) are being considered. We also request a copy of the final BMP/monitoring plan when it becomes available. In addition, the destruction of live coral should be avoided during construction. If coral resources will be significantly impacted, a coral mitigation plan may be required.

ESA
Comments on the Environmental Assessement (EA) prepared by the Corps in 1996 regarding candidate, proposed or listed endangered or threatened species were transmitted to your office on May 14, 1996. These comments remain valid and a copy of the original letter is enclosed. However, the EA states that blasting may be necessary at the mouth of the channel. If blasting is to be utilized during project construction, consultation under Section 7 of the Endangered Species Act will be required.

We look forward to your response to our comments. Should you have any questions, please contact John Naughton at 973-2935 extension 211, Alan Everson at 973-2935, extension 210 (FWCA, EFH), or Margaret Dupree at 973-2935 extension 210 (ESA).

Sincerely,

Charles Karnella
Administrator
Pacific Islands Area Office

Encl.
Copies Furnished w/o encl:
Mr. James Slawson, Southwest Region, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213
Mr. Mark Minton, Western Pacific Fishery Management Council, 1164 Bishop Street, Suite 1400, Honolulu, HI 96813
U.S. Environmental Protection Agency, P.O. Box 5003, Honolulu, Hawaii 96850
U.S. Fish and Wildlife Service, Environmental Services, P.O. Box 50088, Honolulu, HI 96850
Clean Water Branch, Environmental Management Division, Hawaii State Department of Health, P.O. Box 3378, Honolulu, HI 96801-3386
Hawaii State Department of Business, Economic Development and Tourism, Office of Planning, Coastal Zone Management Program, P.O. Box 2359, Honolulu, HI 96804
State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources, P.O. Box 621, Honolulu, HI 96809

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

May 14 1996 F/SWO33:ETN

Mr. Ray H. Oyo
Director of Engineering
and Technical Services
Pacific Ocean Division
U.S. Army Corps of Engineers
Fort Shafter, Hawaii 96858-5440

Dear Mr Oyo:

Thank you for your letter requesting a list of threatened and endangered species that may be affected by the proposed commercial light-draft navigation improvements within the Kahului Deep Draft Harbor, which include deepening of the turning basin and entrance channel, expanding the existing launching ramp, and construction of a new breakwater structure.

List of Species That May Occur in the Boundary Area

Humpback whale (Megaptera novaeangliae) - endangered
Green turtle (Chelonia mydas) - threatened

Humpback whales concentrate during the winter breeding season in shallow waters thrughout the state, usually less than 100 fathoms, and are observed off the north shore of Maui. On occasion, humpback whales may enter Kanului Harbor, but these incidents should be considered anomalies and the Harbor is not considered essential habitat.

Green turtles are found throughout the Hawaiian Archipelago. Their distribution, however, has been reduced in recent historical times, with breeding aggregations being eliminated and certain foraging areas no longer utilized in the main Hawaiian Islands. Feeding and resting areas, where adult Hawaiian Chelonia live the greater portion of their lives during non-breeding periods, are located in coastal waters of both the main islands and the NWHI. Significant resting and foraging habitats for Chelonia have been documented near the proposed project area fronting the Maui Electric Company powerplant.

Critical habitat for listed species under the jurisdiction of the National Marine Fisheries Service has not been proposed or designated within or near the project site.

Because the proposed construction activities will take place within the existing deep draft harbor, no special considerations other than the use of best construction practices to limit the generation of fines is necessary. On the rare occasion that humpback whales or green turtles are observed in proximity to the site we would expect the contractors to exercise reasonable care in dredging and filling operations.

Sincerely,

Eugene T. Nitta
Protected Species Program
Coordinator

cc: F/SWO3 - Lecky
F/SWO23 - Naughton

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

REPLY TO
ATTENTION OF

August 24, 2000

Civil and Public Works Branch

Mr. Charles Karnella
Administrator
Pacific Islands Area Office
National Marine Fisheries Service
1601 Kapiolani Boulevard, Suite 1110
Honolulu, Hawaii 96814-0047

Dear Mr. Karnella:

Thank you for your July 24, 2000 letter which responds to the Corps of Engineers Public Notice for Department of the Army (DA) Permit Application No. 200000171 for the proposed Kahului Light Draft Navigation Improvements Project, Phase II, Kanului, Maui, Hawaii. This application was submitted by the State Division of Boating and Ocean Recreation and seeks DA authorization for the local features of the project. These include the construction of a three-lane boat launch ramp, loading docks, and revetment.

During the construction of the project, the Corps will require the Contractor to confine turbidity and suspended silt to the construction area by installation of silt containment devices, if practicable and feasible. It is expected that for the local features, silt curtains will be effective since the interior harbor water will be calm. Specific plans for these devices will be developed by the Contractor and presented in his Best Management Practices (BMP) Plan. This plan will be required by the Corps contract specifications for the project, as well as by the Water Quality Certification from the State Department of Health, if it is issued. We will give you the opportunity to review the BMP plan and provide comments to us.

Since this project involves the deepening of an existing channel and turning basin, we do not expect to encounter large amounts corals in the areas to be dredged. While some stony and soft corals may be destroyed at the mouth of the channel where new dredging will occur, we do not expect significant amounts of these corals in this area.

We share your concern over the effects that unmitigated blasting may have on the protected species that occur in the area. These include the endangered humpback whale and threatened green turtle. After reviewing the project's boring logs, we believe that the channel and basin can be deepened without the use of explosives. Therefore, we intend to specify in the contract that blasting cannot be used by the Contractor. Only mechanical means of dredging will be permitted.

Thank you for your comments to the Corps' public notice. If you have any further questions about the project, please feel free to contact Ms. Sharon Ishikawa of my Civil and Public Works Branch staff at 438-2249, or Mr. Bill Lennan of the Regulatory Branch staff at 438-6986 or facsimile at 438-4060.

Sincerely,

Ray H. Ojyo, P.E.
Deputy District Engineer for
Programs and Project Management

Copy Furnished:

Mr. Howard B. Gehring
Acting State Boating Administrator
State of Hawaii
Department of Land and Natural Resources
Division of Boating and Ocean Recreation
333 Queen Street, Room 300
Honolulu, Hawaii 96813

CONVERSATION RECORD

TIME	DATE
2:15 pm	12/28/01

TYPE: ☐ VISIT ☐ CONFERENCE ☒ TELEPHONE ☐ INCOMING ☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION	TELEPHONE NO
Cory Shibata	DOH Clean Air Branch	586-4200

ROUTING

NAME/SYM	INT

SUBJECT
Clean Air Act Requirements for Kahului LDH

SUMMARY

I introduced myself, told him I got his name from fellow PM Jerry Cornell, and told him I wanted to know if we needed to obtain any permits from their department in regards to the Clean Air Act for my project. He said they regulate fixed equipment such as concrete silos and rock crushing equipment. They do not regulate moving equipment. I described my project features (remove rock groin, build new 130' b/w, dredge entrance channel & turning basin. Also for DLNR we'll build their launch ramp, docks, driveway improvements, landscaping & lighting.). I told him we do not plan to batch the concrete on site. Access ramp will be made of pre-cast panels lifted into place, probably by crane. Crane will also be used to place b/w stones. Harbor will be dredged by barge. He said the activities I described are all normal construction activities that they not regulate. The only way they might become involved is if a resident complains about fugitive dust during construction in which case they would send someone out to investigate and see if anything can be done about it.

In the future, I can call anyone in the Clean Air Branch to consult about Clean Air Act requirements for my projects. They have a staff of 12 engineers which also includes Priscilla Ligh. Their supervisor is Nolan Hirai.

ACTION REQUIRED
Include copy of this fonecon record in the permanent project file to document that Clean Air Act coordination has been completed.

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
Sharon Ishikawa		12/28/01

ACTION TAKEN

SIGNATURE	TITLE	DATE

DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

January 26, 2001

Civil and Public Works Branch

Mr. Steven Y.K. Chang, Chief
Solid and Hazardous Waste Branch
Environmental Management Division
State of Hawaii
Department of Health, Room 212
919 Ala Moana Boulevard
Honolulu, Hawaii 96814

Dear Mr. Chang:

We have completed the sampling and testing of the proposed dredged material at Kahului Light Draft Harbor. The sampling and testing requirements for this contract were based on your July 31, 2000, letter identifying the appropriate contaminants of concerns (COC) for the sediment samples. Subsequently, a scope of work for sampling and testing was prepared and a draft was submitted to Ms. Lene Ichinotsubo of your staff for review. All comments submitted by your agency were incorporated into the final scope of work. A copy of the completed report is enclosed for your review. For screening purposes, the COC levels in the various composite samples have been compared to the background levels found in the soils in the area of the proposed application.

Examination of the chemical analysis tests of Kahului Light Draft Harbor sediment samples reveals a consistent absence of the six targeted volatile compounds, mercury and TPH-diesel, and TPH-motor oil. All of the tested compounds that were present in harbor sediments (lead, copper and TPH-gasoline) were also present in at least one sample from the potential stockpile site and the Ameron Quarry materials. For lead and copper, the highest levels encountered in the study occurred in the prospective stockpile site. As a result, it can be concluded that the prospective dredged material is not noticeably different with respect to the tested parameters than the potential upland stockpile and disposal sites and there appears to be no potential for contamination of the proposed upland stockpile and disposal sites. Upon completion of your review we anticipate your concurrence on our findings.

Should you have any questions regarding this report, please feel free to contact Ms. Sharon Ishikawa of my Civil and Public Works Branch staff at 438-2249.

Sincerely,

Ray H. Jyo, P.E.
Deputy District Engineer for
Programs and Project Management

Enclosure

Copy Furnished:

Mr. Manuel Emiliano, Jr.
Division of Boating and Ocean Recreation
Department of Land and Natural Resources
333 Queen Street #300
Honolulu, Hawaii 96813

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMO/SHW

February 28, 2001 SO216EVS

Mr. Ray H. Jyo, P.E.
Deputy District Engineer
Programs and Project Management
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Jyo:

SUBJECT: Sediment Sampling and Testing Report
Kahului Light Draft Navigation Improvements
Kahului Harbor, Maui, Hawaii

This is in response to your letter of January 26, 2001 which contained the sediment testing report dated January 10, 2001.

The Department of Health, Office of Solid Waste Management concurs with your findings that the dredged material is acceptable for potential upland stockpile and disposal. The material may also be used by the Maui Parks and Recreation for park grading purposes or fill at other sites. Please note that the use of this material for these purposes may also depend on the gradation and other engineering properties of the dredged material.

Should you have any questions, please contact Edgar Salire or Lene Ichinotsubo at (808) 586-4240.

Sincerely,

STEVEN Y.K. CHANG, P.E., CHIEF
Solid and Hazardous Waste Branch

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY DIRECTOR
JANET E. KAWELO

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
333 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813

November 2, 2001

BOR-E 0167.02

Mr. Ray H. Jyo, P.E.
Deputy District Engineer for
Programs and Project Management
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Dear Mr. Jyo:

SUBJECT: PCA for the Kahului Light Draft Harbor Navigation Improvements

Pamela K. Matsukawa, Deputy Attorney General, has completed her review of the subject PCA, as indicated by the enclosed memo dated October 30, 2001. She stated that "The draft PCA dated 10/3/01 appears acceptable", and "requests that the Army Headquarter's approval of the PCA be obtained before the Department of Land and Natural Resources proceeds to obtain approval of the indemnity provision in the PCA from the Attorney General and the Governor."

Accordingly , please proceed with your continuing action to obtain your Headquarter's approval of the subject PCA.

Should you have any questions, please call me at 587-1966 or contact Manuel Emiliano of our Boating Engineering Branch at 587-0122.

Very truly yours,

W. Mason Young
Acting Administrator

Enc.

cc: James Hatashima, COE
Sharon Ishikawa, COE
Charles Penque, BOR-M
James Schoocraft, BOR-A
David Parsons, BOR-SP
John Hino, BOR-PM

BENJAMIN J. CAYETANO
GOVERNOR

EARL I. ANZAI
ATTORNEY GENERAL

THOMAS R. KELLER
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII
DEPARTMENT OF THE ATTORNEY GENERAL
LAND/TRANSPORTATION DIVISION
ROOM 300, KEKUANAO'A BUILDING
465 SOUTH KING STREET
HONOLULU, HAWAII 96813

BOE E

October 30, 2001

01 OCT 31 P1:11 DLNR DIV

Mr. W. Mason Young
Acting Administrator
Division of Boating and
Ocean Recreation
Department of Land and
Natural Resources
333 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Young:

Re: PCA for the Kahului light draft harbor navigation improvements

Thank you for the Department of the Army's response dated October 11, 2001, to my comments dated September 26, 2001, on the Project Cooperation Agreement ("PCA") between the Department of the Army and State of Hawaii for the construction of the Kahului light draft harbor navigation improvements. The draft PCA dated 10/3/01 appears acceptable.

Please request that the Army Headquarter's approval of the PCA be obtained before the Department of Land and Natural Resources proceeds to obtain approval of the indemnity provision in the PCA from the Attorney General and the Governor.

If there are any questions, please call me at 587-2991.

Very truly yours,

Pamela K. Matsukawa

Pamela K. Matsukawa
Deputy Attorney General

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY DIRECTOR
JANET E. KAWELO

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION
333 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813

August 24, 2001

BOR-E 0044.02

LTC Ronald N. Light
District Engineer
U.S. Army Engineer District, Honolulu
Building 230, Room 302
Fort Shafter, Hawaii 96858-5440

Dear Colonel Light:

This letter expresses the intent of the State of Hawaii, Department of Land and Natural Resources (DLNR) to cooperate with the Federal Government in initiating construction of navigation improvements at the Kahului Light Draft Navigation facility in Kahului on the Island of Maui. This is a joint project between the U.S. Army Corps of Engineers and the State of Hawaii.

We understand that the State of Hawaii, DLNR, will be required to pay the non-Federal share of the costs of construction of general navigation features as specified by section 101 of the Water Resources Development Act of 1986 (Public Law 99-662) and in accordance with the provisions of the Project Cooperation Agreement (PCA) which is currently being negotiated between the State and the Corps of Engineers. We further understand that in accordance with the above law and provisions of the PCA, the State of Hawaii is required to provide 10 percent of the cost for construction of the general navigation features, hereinafter the "10 percent amount", prior to construction contract award. This 10 percent amount is currently estimated at $211,000.

We also understand that the State of Hawaii shall be required to pay over a period not to exceed 30 years an amount equal to the 10 percent amount reduced by any credits for lands, easements, rights-of-way, relocations, and disposal areas (LERRD). The LERRD credit is currently estimated at $24,000, resulting in an additional cash contribution of $187,000 to be paid over a period not to exceed 30 years.

In addition, we have requested that non-Federal local service facilities be awarded in the same construction contract as the federal general navigation features. The local service facilities are not part of the federal navigation project and are not subject to cost sharing but are integral to the completeness of the harbor. The current estimated cost of the local service facilities, including costs for contracting services and supervision and administration, is in excess of $1.0 million.

We understand that funds for the local service facilities must also be provided prior to construction contract award.

I believe that the State of Hawaii, DLNR, has the ability to obtain the required non-Federal portion of the cost of the general navigation features. The State of Hawaii has appropriated $840,000 in Fiscal Year 1999 and released these funds on June 12, 1998. An additional $240,000 will be funded by a Federal Grant Agreement, Boating Access Program, under the Provision of the Federal Aid Sport Declaration Act. Our funding limitation for the local service facilities is $878,000. We are receptive to down scoping or providing necessary additives to enable the highest priority local service facilities to be awarded within available remaining funds. The funding approval documents are enclosed for your use and information.

The Maui Planning Commission approved the Special Management Area Use Permit and Shoreline Setback Variance applications on April 28, 1999, and approved a time extension on February 22, 2001. Construction of the proposed project must be initiated by May 1, 2002. The Conservation District Use Application (CDUA) was approved by the State of Hawaii Land Board on September 22, 2000.

It is further understood that if this letter of intent is acceptable, you as District Engineer will recommend that funds for the federal share of this project be procured.

Should you have any questions, please call me at 587-1966, or contact Manuel Emiliano of our Boating Engineering Branch at 587-0122.

Very truly yours,

W. Mason Young
Acting Administrator

Enclosure

cc: Paul Mizue, COE
James Hatashima, COE
Sharon Ishikawa, COE
David Parsons, BOR-SP
John Hino, BOR-PM
Charles Penque, BOR-M

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX D - SEDIMENT TESTING OF DREDGED MATERIAL FROM KAHULUI HARBOR

SEDIMENT TESTING OF DREDGED MATERIAL FROM KAHULUI HARBOR, ISLAND OF MAUI, HAWAII SAMPLING REPORT

SUBMITTED TO: Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, HI 96858-5440

SUBMITTED BY: Dr. Steven Dollar
Marine Research Consultants
4467 Sierra Dr.
Honolulu, HI 96816

CONSTRUCTION AREA: Kahului Harbor Small Boat Ramp and Channel, Maui, Hawaii

SAMPLING DATE: November 29, 2000

SUBMITTAL DATE: January 10, 2001

DESCRIPTION of PROPOSED ACTION:

The U.S. Army Corps of Engineers, Honolulu District, sponsored by the State of Hawaii, Department of Land and Natural Resources-Division of Boating and Ocean Recreation (DBOR) intends to construct navigational improvements at the site of the existing boat launch ramp within Kahului Harbor, on the northern coast of the Island of Maui. The proposed improvements will include deepening the entrance channel and the basin in front of the boat ramp. Approximately 8,7000 cubic yards (CY) of material will be dredged, of which approximately 3,700 CY would be sands and gravels, and 5,000 CY would be underlying rocks. In accordance with the letter from the State of Hawaii, Department of Health (DOH) (July 31, 2000) a sampling of the dredge material must be tested for

contaminants of concern (COC) prior to disposal in upland locations. The COC listed by the DOH contaminants of are:

1) Inorganics:	Copper, Lead, Mercury
2) Volatiles:	1,1-dichloroethane, Toluene, Xylene, Ethylbenzene, 1,2,4, Trimethylbenzene, Napthalene;
3) Petroleum:	TPH, quantified as gasoline, diesel and oil.

The objective of this work is to compare the concentrations of contaminants of concern (COC) in harbor sediments to concentrations in the soils of the proposed upland dredged materials stockpile site, and from the dredged material disposal site (Ameron Hawaii). The comparative results will be used to determine whether or not material is excluded from regulation as a Solid Waste by the State Department of Health.

METHODOLOGY:

Seven stations within the proposed dredging limits were sampled on November 29, 2000 (Figure 1). These sampling stations are identical to those utilized in a similar sampling program of sediment in the turning basin and entrance channel of Kahului Harbor conducted by Marine Research Consultants for the Corps of Engineers in 1998. Utilizing the same sampling stations is useful in allowing comparison of survey results, as the constituents that were analyzed in 1998 (Toxicity Characteristic Leaching Potential) are different than those stipulated for the present program in 2000.

All sampling and testing was in accordance with EPA test methods from EPA document titled "Test Methods for Evaluating Solid Waste," SW-846, as amended. Field sampling within the prospective dredge area was conducted from a 26-foot boat equipped with all U.S. Coast Guard required safety equipment, as well as a fathometer, differential GPS, and VHF radio. Sampling was conducted by Dr. Steven Dollar. Mr. Matthias Kusch served as safety officer and sampling assistant.

At each sampling station, the latitude and longitude was acquired using a differential GPS with readability of 0.001 minutes or about 6 feet. Sediment samples were collected using a Ponar sampler. This sampler was selected because it is designed specifically for sand and gravel bottoms. The Ponar

sampler is constructed entirely of stainless steel to eliminate contamination of metal analyses. The sampler is held in a cocked open position with a spring pin. When lowered through the water column, the pin releases on contact with the sediment surface resulting in closing of the sampler jaws which isolates a sediment sample approximately 6" deep. Previous experience by the Principal Investigator in sampling sediment in the Kahului Harbor channel in 1998 revealed that sand sediment deposits are rarely deeper than 6". Because of the rocky nature of the bottom, multiple sampler casts at each station were required to obtain a satisfactory quantity of solid material. Prior to each replicate cast, position of the boat was reconfirmed to ensure exact replication of the sampling location.

Upon retrieval of the sample to the boat deck, the sampler was emptied into a large acid-cleaned, distilled water rinsed pyrex beaker. The sediment sample, along with water collected by the sampler, was transferred to new 16-oz Type III soda lime glass bottles with PVC coating using a non-metallic scoop. All material acquired in the sampler were collected in order to minimize or eliminate loss of volatile compounds within the sediment matrix. Bottles were pre-labeled with coded station number, date and sampling time, and name of sampler. Following filling, samples were immediately placed on ice in igloo coolers. Between samples, all equipment was rinsed with dilute nitric acid followed by rinses with distilled water. Following rinses, all rinse material was poured into a plastic carboy and neutralized with $NaHCO_3$. Following completion of sampling the fully neutralized wash water solution was discharged approximately one mile offshore. At no time did sediment come into human contact.

In addition to the sediment samples collected within the Harbor, two separate samples of soil were collected at the stockpile site located to the north of the Harbor (Figure 1). Two separate samples were also collected at the potential disposal site at Ameron Hawaii. One of the Ameron samples consisted of finely crushed recycled concrete, and one consisted of screened basalt overburden/soil mix. For the land samples, material was placed into 16-oz jars using a non-metallic scoop. Following collection, these samples were also placed on ice in coolers.

All sampling was conducted in the morning of the sampling day (08:45 - 11:30, November 29, 2000). Following completion of sampling, coolers were packed

with blue ice and sealed. Samples were shipped via FEDEX overnight service from Maui on November 29, 2000, and arrived at Positive Lab Service in Los Angeles CA at 08:36 on November 30, 2000. Thus, the samples arrived at the laboratory within 24 hours of collection. Appropriate Chain of custody forms accompanied all samples (Appendix A). Upon deposit with the shipper, the analytical laboratory was notified by telephone of expected delivery time, and receipt of the samples was acknowledged from the lab to the Principal Investigator.

For inorganic metals the holding time is six months, and for mercury the holding time is 28 days. The holding time for volatile organics and TPH is 14 days (EPA SW846, 3rd ed.). Sample preparation for all submitted samples was conducted on December 5, 2000 (Appendix A). Thus, all samples were analyzed well within the specified holding times.

It is also stated in the July 31, 2000 letter from DOH that "Should it be necessary to dispose of the material at the landfill, a test using Toxicity Characteristics Leaching Procedures (TCLP) may also be required (EPA SW-846 Method 1311)." Because such a contingency is not probable, but is remotely possible, enough sediment was collected during fieldwork to perform the TCLP if required. This material is presently being kept in storage at Positive Lab Service until the determination is made from the initial results and past TCLP tests conducted in 1998 at the same sites whether additional TCLP testing is required.

During sampling, field notes were kept on a log sheet that included time of sampling, position (latitude-longitude), water depth, number of casts required, and observation of bottom composition made through a glass bottom view box. A copy of the field log is included as Appendix B.

RESULTS:

Sampling of sediment on the floor of the Kahului boat channel was conducted on November 29, 2000 commencing at 08:45 and finishing at 10:35. Weather conditions were clear, with very light tradewinds (5-10 kts). The tide was falling during the period of sampling from a height of approximately 1.8 feet to 1.2

feet. Samples were collected at the stockpile site and from the Ameron Paia Quarry immediately following sampling within the Harbor.

Table 1 shows the location (latitude/longitude), water depth, and bottom composition of each sampling site. With the exception of the site of sample 7, where the bottom consisted of a uniform layer of fine sand, all of the other sampling sites in the harbor channel consisted of rocky bottom with pockets of coarse sand. Also observed on the bottom at sample sites 1-6 were abundant clumps of the green alga Ulva, and the red alga Hypnea growing attached to the rocky surfaces.

Table 2 shows results of all sediment analyses of the three groups of contaminants of concern, while the laboratory results for these analyses are shown in Appendix A. Also included in Appendix A is the Quality Control Report submitted by Positive Lab Service with the analytical results. It can be seen in the Quality Control Report that all of the matrix spikes were recovered within the acceptance ranges of the individual elements.

Examination of Table 2 reveals that none of the six volatile compounds that were assessed occurred in detectable quantities in any of the samples. Of the inorganics, Mercury also did not occur in any of the samples.

Of the remaining two inorganics, copper occurred in all samples in concentrations ranging from 2.0 mg/kg to 20 mg/kg. The lowest concentration occurred in Harbor sediment sample No. 6, while the highest concentrations occurred in Harbor sediment sample No. 2 and stockpile site No. 8. Within the gradient of the harbor samples (inshore to offshore; Nos. 1-7) there is no apparent trend in the concentrations of copper. Lead occurred in nine of the eleven samples in concentrations of 0.51 mg/kg to 8.6 mg/kg. Lead did not occur in detectable concentrations in Harbor sediment sample No. 6 and Ameron quarry sample No. 11. While there was no apparent inshore-offshore gradient in the concentration of lead in bottom sediments, the highest concentration in the Harbor occurred in Sample No. 7, which was in the deepest water farthest from the shoreline (1.4 mg/kg). The two samples collected from the stockpile site had the highest concentrations of lead of all samples (8.6 mg/kg at Station 8 and 2.0 mg/kg at Station 9).

Preliminary Remediation Goals (PRG's) set by the US EPA for residential soil are 2.9E+03 mg/kg for copper, and 4.0E+02 mg/kg for lead. Thus, detected concentrations of these inorganics in Harbor sediments and stockpile sites were far below the residential PRG's.

The results of analyses of petroleum indicates that none of the samples had concentrations of Diesel or Motor oil above the limits of detection. Gasoline was detected in eight of the eleven samples in concentrations of 0.10 mg/kg to 1.0 mg/kg. Within the harbor channel, six of the seven samples contained detectable gasoline, with the highest concentrations at the two most seaward stations (0.46 mg/kg at Station 6, and 1.00 mg/kg at Station 7). Gasoline was also detected at one of the stockpile sites (0.29 mg/kg at Station 9) and one of the Ameron Quarry sites (0.26 mg/kg at Station 10).

For purposes of comparison, results of TCLP extractions from sediments collected at the same sampling sites in the Kahului Harbor small boat channel in 1998 are shown in Appendix C. While discrete samples were analyzed from each station in the 2000 data, samples were composited for the 1998 analyses. Sample 1 remained a discrete sample, while composites were made by combining samples 2-3, 4-5 and 6-7.

Examination of the data in Appendix C shows similar results to the present study. None of the TCLP extractions for pesticides, herbicides, volatiles or semivolatiles revealed any detectable compounds. Similarly, mercury was not present in any of the samples above the level of detection. As with the present data set, however, lead, as well as several other metals (arsenic, barium, chromium and selenium) occurred consistently in the sample set.

SUMMARY

Results of the analyses of samples from seven stations within the small boat channel of Kahului Harbor on Maui, as well as a potential stockpile site adjacent to the channel and materials presently stockpiled at the Ameron Quarry facility reveal a consistent absence of the six targeted volatile compounds, mercury and TPH-diesel, and TPH-motor oil.

All of the tested compounds that were present in harbor sediments (lead, copper and TPH-gasoline) were also present in at least one sample from the potential stockpile site and the Ameron Quarry materials. For lead and copper,

the highest levels encountered in the study occurred in the prospective stockpile site. As a result, it can be concluded that the prospective dredged material is not noticeably different with respect to the tested parameters than the potential upland stockpile and disposal sites.

Principal Investigator

1-11-01
Date

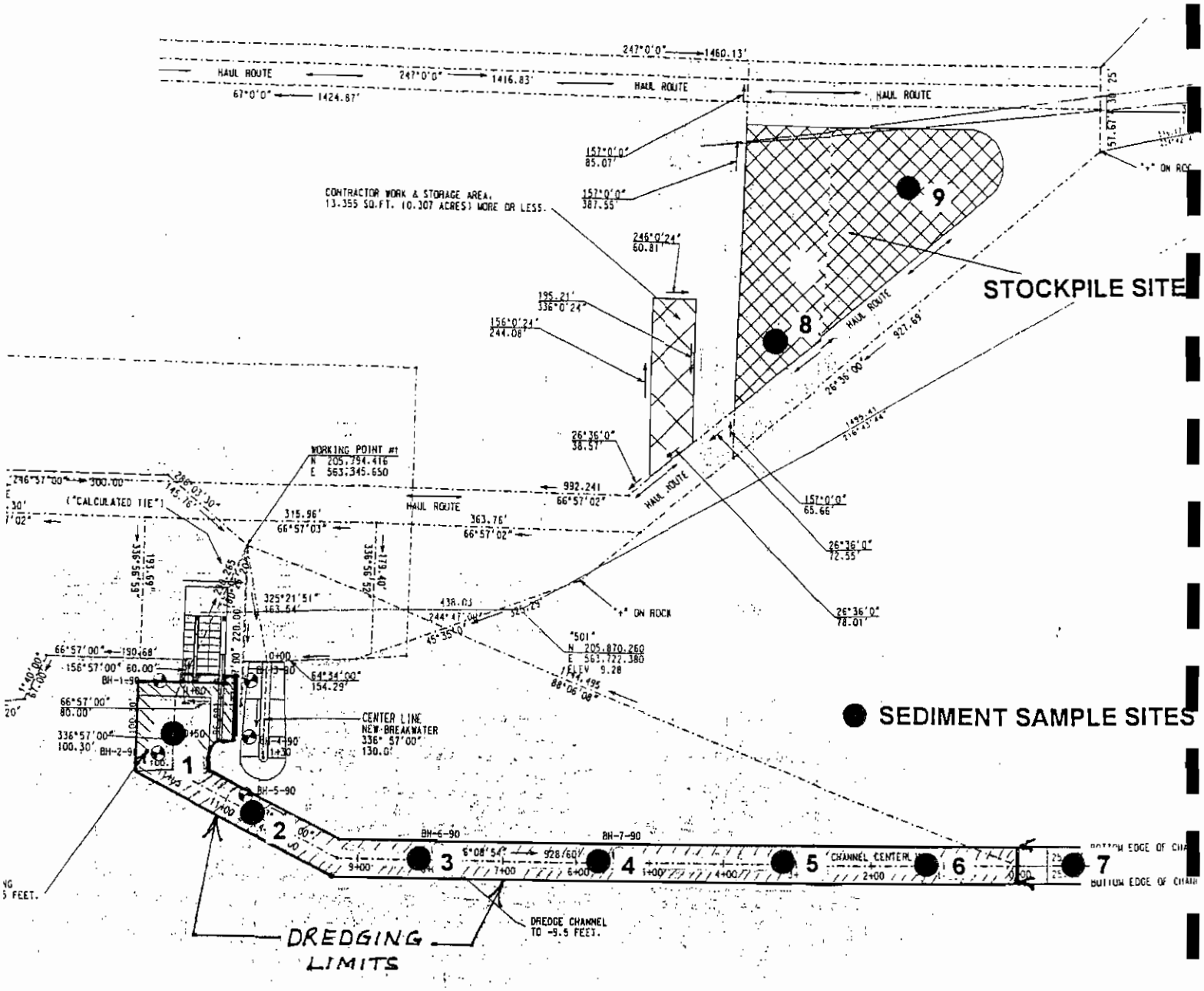


Figure 1. Map of Kahului Harbor showing location of area of proposed Light Draft Navigational Improvements in turning basin and entrance channel. Also shown are collection locations of seven sediment samples in the area of improvements, and two sampling locations at the stockpile site to the north of the harbor. Sampling locations in the Harbor are identical to the stations where sediment was collected for TCLP analysis in 1998.

Table 1. Descriptions of sediment sampling sites in Kahului Small Boat Harbor, fill area, and Ameron Quarry materials. Water depth was aquired using a ship-board fathometer; latitude and longitude were determined with a differentail GPS. Sample site descriptions in the Harbor channel were obtained by viewing bottom through a glass look box. For station locations, see Figure 1.

STATION NO.	LATITUDE LONGITUDE	WATER DEPTH (feet)	SAMPLE LOCATION DESCRIPTION
1	20°53.770' N 156°28.700' W	4.3	Rock and rubble, pockets of coarse black sand
2	20°53.740' N 156°28.660' W	4.5	Rock and rubble, pockets of finer black sand
3	20°53.740' N 156°28.630' W	4.6	Rock and rubble, pockets of coarse black and white sand
4	20°53.760' N 156°28.600' W	6.0	Rock and rubble, pockets of coarse black and white sand
5	20°53.780' N 156°28.550' W	6.0	Rock and rubble, pockets of coarse black and white sand
6	20°53.790' N 156°28.510' W	9.0	Rock and rubble, pockets of coarse shelly white sand
7	20°53.820' N 156°28.480' W	34.2	Fine grey sand; no rock
8	20°53.917' N 156°28.619' W	NA	fine soil from southwest corner of fill area
9	20°53.947' N 156°28.592' W	NA	fine sol from northwest corner of fill area
10	20°51.861' N 156°25.272' W	NA	Ameron recycled concrete; fine particles
11	20°51.868' N 156°25.271' W	NA	Ameron screened basalt overburden/soil mix

TABLE 2. Summary of laboratory results of sediment analyses from Kahului Harbor small boat entrance channel, sediment stockpile site, and material presently stockpiles at Ameron Quarry on November 29, 2000. "ND" = not detected; "PQL"= Practical Quantitation Limit. For Station locations, see Figure 1.

	PARAMETER	UNIT	PQL	HARBOR SEDIMENT							STOCKPILE		AMERON	
				1	2	3	4	5	6	7	8	9	10	11
INORGANICS	Lead	mg/kg	0.5	0.89	0.66	0.62	0.51	0.75	ND	1.40	8.60	2.0	1.50	ND
	Copper	mg/kg	1	3.6	20	7.8	5.1	8.9	2.0	7.0	20	11	7.3	2.7
	Mercury	mg/kg	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VOLATILES	1,1-Dichloroethane	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Toluene	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Xylene	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ethylbenzene	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,2,4 Trimethylbenzene	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Napthalene	µg/kg	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PETROLEUM	TPH-Gasoline	mg/kg	0.1	0.14	0.10	0.30	ND	0.15	0.46	1.00	ND	0.29	0.26	ND
	TPH-Diesel	mg/kg	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	TPH-Motor Oil	mg/kg	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX A.

Results of Laboratory Analyses &
Quality Control Report

Positive Lab Service

Kahului Harbor Sediment

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

CERTIFICATE OF ANALYSIS

Marine Research Consultants **12/08/00**
File# 73667
4467 Sierra Dr.
Honolulu, HI 96816 **Kahului Harbor Sediment**
Attn: Steven Dollar, Ph.D
Phone: (808) 734-4009 Fax: (808) 732-1813

Sample#: 20002642-001 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 1-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	0.89	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	3.6	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	89	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	95	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	99	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.14	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	113	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	76	Percent	

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Phone: (808) 734-4009 Fax: (808) 732-1813

Sample#: 20002642-002 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 2-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000	**Analysis Date: 12/07/2000**			
Lead	EPA 3050B	EPA 6010B	0.66	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	20	mg/kg	1
	Prep Date: 12/05/2000	**Analysis Date: 12/06/2000**			
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000	**Analysis Date: 12/04/2000**			
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	97	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	94	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	99	Percent	
	Prep Date: 12/06/2000	**Analysis Date: 12/06/2000**			
TPH-Gasoline	EPA 5030B	EPA 8015B	0.10	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	114	Percent	
	Prep Date: 12/06/2000	**Analysis Date: 12/07/2000**			
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	70	Percent	

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Sample#: 20002642-003 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 3-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	0.62	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	7.8	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	ND	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	101	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	99	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	101	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.30	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	112	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	68	Percent	

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Sample#: 20002642-004 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 4-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	0.51	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	5.1	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	99	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	98	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	99	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	ND	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	113	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	78	Percent	

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Sample#: 20002642-005 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 5-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	0.75	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	8.9	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	96	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	97	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	103	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.15	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	112	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	79	Percent	

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Sample#: 20002642-006 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 6-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	ND	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	2.0	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	96	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	99	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	100	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.46	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	116	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	83	Percent	

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Sample#: 20002642-007 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 7-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
Prep Date: 12/05/2000 Analysis Date: 12/07/2000					
Lead	EPA 3050B	EPA 6010B	1.4	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	7.0	mg/kg	1
Prep Date: 12/05/2000 Analysis Date: 12/06/2000					
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
Prep Date: 12/04/2000 Analysis Date: 12/04/2000					
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	96	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	100	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	105	Percent	
Prep Date: 12/05/2000 Analysis Date: 12/05/2000					
TPH-Gasoline	EPA 5030B	EPA 8015B	1.0	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	116	Percent	
Prep Date: 12/06/2000 Analysis Date: 12/07/2000					
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	68	Percent	

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Sample#: 20002642-008 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 8-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	8.6	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	20	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	99	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	97	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	100	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	ND	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	111	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	101	Percent	

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Sample#: 20002642-009 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 9-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	2.0	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	11	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	97	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	102	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	96	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.29	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	116	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	97	Percent	

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Honolulu, HI 96816 **Kahului Harbor Sediment**
Attn: Steven Dollar, Ph.D
Phone: (808) 734-4009 Fax: (808) 732-1813

Sample#: 20002642-010 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 10-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	1.5	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	7.3	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	54	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	99	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	97	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/06/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	0.26	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	112	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	80	Percent	

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

CERTIFICATE OF ANALYSIS

Marine Research Consultants **12/08/00**
File# 73667
4467 Sierra Dr.
Honolulu, HI 96816 **Kahului Harbor Sediment**
Attn: Steven Dollar, Ph.D
Phone: (808) 734-4009 Fax: (808) 732-1813

Sample#: 20002642-011 **Collector:** Client **Method:** Via: Fed-Ex
Received: 11/30/2000 **Sampling Date/Time:** 11/29/2000
Type: Soil
I.D.: 11-Sand Sediment

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	ND	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	2.7	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	ND	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	97	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	103	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	98	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/06/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	ND	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	104	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	103	Percent	

POSITIVE LAB SERVICE

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CERTIFICATE OF ANALYSIS

Marine Research Consultants **12/08/00**
File# 73667
4467 Sierra Dr.
Honolulu, HI 96816 **Kahului Harbor Sediment**
Attn: Steven Dollar, Ph.D
Phone: (808) 734-4009 Fax: (808) 732-1813

Sample#: 20002642-012 **Collector:** **Method:**
Received: 11/30/2000 **Sampling Date/Time:**
Type: Soil
I.D.: Method Blank

Parameter	Prep/Test Method		Result	Unit	PQL
	Prep Date: 12/05/2000 Analysis Date: 12/07/2000				
Lead	EPA 3050B	EPA 6010B	ND	mg/kg	0.5
Copper	EPA 3050B	EPA 6010B	ND	mg/kg	1
	Prep Date: 12/05/2000 Analysis Date: 12/06/2000				
Mercury	EPA 7471A	EPA 7471A	ND	mg/kg	0.1
	Prep Date: 12/04/2000 Analysis Date: 12/04/2000				
1,1-Dichloroethane	EPA 5030B	EPA 8260B	ND	ug/kg	4
Toluene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Xylene (Total)	EPA 5030B	EPA 8260B	ND	ug/kg	4
Ethyl benzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
1,2,4-Trimethylbenzene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Naphthalene	EPA 5030B	EPA 8260B	ND	ug/kg	4
Surrogates	EPA 5030B	EPA 8260B	*	*	
Dibromofluoromethane	EPA 5030B	EPA 8260B	98	Percent	
Toluene D-8	EPA 5030B	EPA 8260B	96	Percent	
4-Bromofluorobenzene	EPA 5030B	EPA 8260B	101	Percent	
	Prep Date: 12/05/2000 Analysis Date: 12/05/2000				
TPH-Gasoline	EPA 5030B	EPA 8015B	ND	mg/kg	0.1
Surrogates	EPA 5030B	EPA 8015B	*		
Trifluorotoluene	EPA 5030B	EPA 8015B	117	Percent	
	Prep Date: 12/06/2000 Analysis Date: 12/07/2000				
TPH-Diesel	EPA 3550B	EPA 8015B	ND	mg/kg	10
TPH - Motor Oil	EPA 3550B	EPA 8015B	ND	mg/kg	100
Surrogates	EPA 3550B	EPA 8015B	*		
N-Tetracosane	EPA 3550B	EPA 8015B	77	Percent	

POSITIVE
LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
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CERTIFICATE OF ANALYSIS

Marine Research Consultants **12/08/00**

File# 73667
4467 Sierra Dr.
Honolulu, HI 96816

Kahului Harbor Sediment

Attn: Steven Dollar, Ph.D
Phone: (808) 734-4009 Fax: (808) 732-1813

ND = Not Detected
NA = Not Applicable
PQL = Practical Quantitation Limit
Sub = Subcontracted analysis, original report enclosed
Any remaining sample(s) for testing will be disposed of 30 days from receipt date unless notified.

Authorized Signature(s)

POSITIVE LAB SERVICE

781 East Washington Blvd.,
Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

CHAIN OF CUSTODY AND ANALYSIS REQUEST

LOG BOOK NO. 18267 DATE: 12/6/00 PAGE 1 OF 2
FILE NO. 13667 LAB NO. 1000 1042

CLIENT NAME: MARINE RESEARCH CONSULTANTS

PROJECT NAME: KAHULUI HARBOR SED. PROJECT NO. P.O. NO.

ADDRESS: 4467 Sierra Dr Hon. HI 96816

PROJECT MANAGER: STEVEN Dollar PHONE NO: 734-4009 FAX NO: 732-1813

SAMPLER NAME: S. Dollar (Printed) (Signature)

TAT (Analytical Turn Around Time) 0 = Same Day; 1 = 24 Hour; 2 = 48 Hour; (Etc) (N = NORMAL)

CONTAINER TYPES: B = Brass, (G = Glass), P = Plastic, V = VOA Vial, O = Other:

ANALYSES REQUESTED:

AIRBILL NO:

COOLER TEMP:

PRESERVED:

QC REPORT LEVEL: 5

REMARKS:

SAMPLE NO.	DATE SAMPLED	TIME SAMPLED	SAMPLE DESCRIPTION	MATRIX: WATER	MATRIX: SOIL	MATRIX: SLUDGE	MATRIX: OTHER	TAT	CONTAINER: #	CONTAINER: TYPE	INORGANICS (Cu, Pb, Hg)	Volatiles (see attached)	Petroleum - TPH (Quantified as gas, diesel, oil)	SAMPLE CONDITION/ COMMENTS:
1	11/29/00		SAND/SEDIMENT		X				1		X	X	X	
2	"		"						1		X	X	X	
3	"		"						1					
4	"		"						1					
5	"		"						1					
6	"		"						1					
7	"		"						1					
8	"		"						1					
9	"		"						1					
10/11	"		"						1					

Relinquished By (Signature and Printed Name): Steven Dollar — Received By (Signature and Printed Name): — Date: 12/7/00 — Time: 8:30

Relinquished By (Signature and Printed Name): — Received By (Signature and Printed Name): — Date: — Time:

Relinquished By (Signature and Printed Name): — Received By (Signature and Printed Name): — Date: — Time:

SPECIAL INSTRUCTIONS:

SAMPLE DISPOSITION:
1. Samples returned to client? YES (NO)
2. Samples will not be stored over 30 days, unless additional storage time is requested.
3. Storage time requested: _____ days

By _____ Date

DISTRIBUTION: WHITE, YELLOW, PINK TO LAB -- GOLD TO CLIENT

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
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Quality Control Report
Matrix Spike & Duplicate Spike

Client: Marine Research Consultants **Method/Date Digested:** 12/5/00

QC Sample: 2000-2642-011 **Method(s)/Date Analyzed:** 12/7/00 Hg:12/06/00

Report No.: 2000-2642 **Batch:** 2000340-3050 **Units:** mg/kg

Element	Sample Amount	Spike Added	Spike Recov'd	Spike Dup Added	Spike Dup Recov'd	%R	%RD	Acceptance Range%	%RPD
Copper	2.66	50	36.7	50	38.8	68	72	70-130	6
Lead	0	100	66.7	100	69.8	67	70	70-130	5
Mercury	0	0.5	0.48	0.5	0.540	96	108	70-130	12

Dup denotes duplicate
%R denotes percent recovery

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
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Quality Control Report
Laboratory Check Sample

Client: Marine Research Consultants **Method/Date Digested:** 12/05/00

Batch No.: 2000340-3050 **Method(s)/Date Analyzed:** 12/07/00

Report No.: 2000-2642 **Units:** mg/kg

	Spike			Acceptance
Element	Added	Recov'd	%R	Range
Copper	25	24.5	98	80-120
Lead	50	45.8	92	80-120
Mercury	0.5	0.562	112	80-120

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
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12/19/00

QUALITY CONTROL DATA

CLIENT:	Marine Research Consultants	**BATCH No:**	034180[illegible]
REPORT NO:	20002642	**DATE EXTRACTED:**	12/06/00
MATRIX:	SOIL	**DATE ANALYZED:**	12/06/00
METHOD:	EPA 8015B	**QC SAMPLE:**	20002642-0[illegible]

PARAMETER		SAMPLE RESULTS UG/KG	AMT SPIKED UG/KG	AMT REC. UG/KG	% REC	SPK REC ACCEPT RANGE (%)	RPD
DIESEL	S	0	111	146.2	132%		
	DS	0	111	132.8	120%	50-145	10%
	LCS		555	771.3	139%	55-146	
n-TETRACOSANE (SURROGATE)	S	0	20.83	24.6	118%		
	DS	0	20.83	22.3	107%	57-136	10%
	LCS		20.83	15.6	75%	59-142	

S = Spike
DS = Duplicate Spike
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
RPD = Relative Percent Difference
ND = None Detected

POSITIVE LAB SERVICE

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12/19/00

QUALITY CONTROL DATA

CLIENT:	Marine Research Consultants	BATCH No:	3408015.0
REPORT NO:	20002642	DATE EXTRACTED:	12/05/00
MATRIX:	SOIL	DATE ANALYZED:	12/05/00
METHOD:	EPA 8015B	QC SAMPLE:	20002642-010

PARAMETER		SAMPLE RESULTS UG/KG	AMT SPIKED UG/KG	AMT REC. UG/KG	% REC	SPK REC ACCEPT RANGE (%)	% RPD
GASOLINE	S	260	910	1057	88%		
	DS	260	910	1226	106%	65-135	19%
	LCS		4550	4546	100%	70-146	

S = Spike
DS = Duplicate Spike
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
RPD = Relative Percent Difference
ND = None Detected

POSITIVE LAB SERVICE

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12/19/00

QUALITY CONTROL DATA

CLIENT:	Marine Research Consultants	**BATCH No:**	03398260B
REPORT NO:	20002642	**DATE EXTRACTED:**	12/4/00
MATRIX:	SOIL	**DATE ANALYZED:**	12/4/00
METHOD:	EPA 8240A	**QC SAMPLE:**	20002654-002

PARAMETER		SAMPLE RESULTS UG/KG	AMT SPIKED UG/KG	AMT REC. UG/KG	% REC	SPK REC ACCEPT RANGE (%)	RPD
1,1 DICHLOROETHENE	S	0	20	18.2	91%		
	DS	0	20	17.6	88%	39-137	3%
	LCS		20	19.6	98%	75-125	
BENZENE	S	0	20	16.9	85%		
	DS	0	20	16.5	83%	78-119	2%
	LCS		20	18.2	91%	75-125	
TRICHLOROETHENE	S	0	20	16.6	83%		
	DS	0	20	16.8	84%	58-118	1%
	LCS		20	18.8	94%	75-125	
TOLUENE	S	0	20	16.0	80%		
	DS	0	20	15.9	80%	63-124	1%
	LCS		20	17.6	88%	75-125	
CHLOROBENZENE	S	0	20	18.0	90%		
	DS	0	20	17.4	87%	75-130	3%
	LCS		20	19.0	95%	75-125	
MTBE	LCS		20	22.6	113%	75-125	
TOLUENE D-8 (SURROGATE)	S	0	20	19.0	95%		
	DS	0	20	19.2	96%	75-125	1%
	LCS		20	19.8	99%	75-125	

S: Spike
DS: Duplicate Spike
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate
RPD: Relative Percent Difference
ND: None Detected

APPENDIX B.

Field Log

Kahului Sediment Sampling
November 29, 2000

KAHULUI HARBOR - SEDIMENT SAMPLING
FIELD DATA SHEET

SAMPLE DATE: 11/29/00

WEATHER CONDITIONS clear - no

SAMPLE NO.	TIME	LAT/LONG	SAMPLE DESCRIPTION	COMMENTS
1	10:35	2053770 156 28 700	.75 Fath.	black sand 6 cast
2	10:18	20.53.740 156.28.660	0.75 Fath	finer black sand 3 cast
3	9:55	2053.740 156.28.630	0.75 Fath	coarse sand wht/blk 5 cast
4	9:36	2053.760 156.28.600	1.0 Fath	Coarse Sand: White/blk 4 cast
5	921	20.53.780 156.28.550	1.0 fathom	coarse sand wht/blk 4 cast
6	9:07	20.53.790 156.28.510	1.5 fathoms	shelly coarse sand 7 casts
7	0845	LAT 2053820 156 28 480	5.7 fathoms	fine sand 3 casts
8	10:52	20 53917 156 28619	fill area	fine dirt from SW corner fill area
9	10:59	2053947 156 28592	fill area	fine dirt from NW corner fill area
10	11:25	2051861 156 25272	Ameron Recycled Concrete	Recycled concrete
11	11:30	20 51 868 156 25 271	Ameron Basalt	Screened - basalt overburden soil/mix
~~12~~			David Cabral	

SAMPLED BY: [signature] [signature] 11/29/00

APPENDIX C.

Results of TCLP Analyses

Kahului Harbor
October 31, 1998

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900
FAX 714/538-1209

CLIENT

Marine Research Consultants
Attn: Steve Dollar
4467 Sierra Dr.
Honolulu, Hi. 96816

LAB NO. LR29524

REPORTED 11/27/98

SAMPLE Solid

IDENTIFICATION Site #1
Kahului Harbor Sediment - Grab Samples
Date Collected 10/31/98 @ 0930hrs.

BASED ON SAMPLE As Submitted

RECEIVED 11/04/98

TCLP EXTRACTION - INORGANICS

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Arsenic	5.0	EPA 7060	11/11 MT	0.002
Barium	100.0	EPA 6010	11/11 MT	1.03
Cadmium	1.0	EPA 6010	11/11 MT	ND< 0.003
Chromium	5.0	EPA 6010	11/11 MT	0.044
Lead	5.0	EPA 7421	11/11 MT	0.022
Mercury	0.2	EPA 7470	11/11 NS	ND< 0.004
Selenium	1.0	EPA 7740	11/11 MT	0.005
Silver	5.0	EPA 6010	11/11 MT	ND< 0.002

TCLP EXTRACTION - PESTICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Chlordane	0.03	EPA 8080	11/16 LS	ND< 0.01
Endrin	0.02	EPA 8080	11/16 LS	ND< 0.002
Heptachlor	0.008	EPA 8080	11/16 LS	ND< 0.001
Heptachlor Epoxide	0.008	EPA 8080	11/16 LS	ND< 0.001
Lindane	0.4	EPA 8080	11/16 LS	ND< 0.001
Methoxychlor	10.0	EPA 8080	11/16 LS	ND< 0.05
Toxaphene	0.5	EPA 8080	11/16 LS	ND< 0.01
PCB's	---	EPA 8080	11/16 LS	ND< 0.0001

TCLP EXTRACTION - HERBICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
2,4-D	10.0	EPA 8150	11/23 LS	ND< 0.05
2,4,5-TP (Silvex)	1.0	EPA 8150	11/23 LS	ND< 0.01

Continued on Next page

Client: Marine Research Consultants
Lab No: LR29524-01

TCLP EXTRACTION - VOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Benzene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Carbon Tetrachloride	0.5	EPA 8240	11/13 AHT	ND< 0.01
Chlorobenzene	100.0	EPA 8240	11/13 AHT	ND< 0.01
Chloroform	6.0	EPA 8240	11/13 AHT	ND< 0.01
1,2-Dichloroethane	0.5	EPA 8240	11/13 AHT	ND< 0.01
1,1-Dichloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Methyl-ethyl-ketone	200.0	EPA 8240	11/13 AHT	ND< 0.01
Tetrachloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Trichloroethylene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Vinyl Chloride	0.25	EPA 8240	11/13 AHT	ND< 0.06

TCLP EXTRACTION - SEMIVOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
o-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
m-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
p-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
1,4-Dichlorobenzene	7.5	EPA 8270	11/13 PS	ND< 0.01
2,4-Dinitrotoluene	0.13	EPA 8270	11/13 PS	ND< 0.05
Hexachlorobenzene	0.13	EPA 8270	11/13 PS	ND< 0.01
Hexachloro-1-3-butadiene	0.5	EPA 8270	11/13 PS	ND< 0.01
Hexachloroethane	3.0	EPA 8270	11/13 PS	ND< 0.01
Nitrobenzene	2.0	EPA 8270	11/13 PS	ND< 0.01
Pentachlorophenol	100.0	EPA 8270	11/13 PS	ND< 0.05
2,4,5-Trichlorophenol	400.0	EPA 8270	11/13 PS	ND< 0.05
2,4,6-Trichlorophenol	2.0	EPA 8270	11/13 PS	ND< 0.05
Pyridine	5.0	EPA 8270	11/13 PS	ND< 0.5

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/gk

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900
FAX 714/538-1209

CLIENT

Marine Research Consultants
Attn: Steve Dollar
4467 Sierra Dr.
Honolulu, Hi. 96816

LAB NO. LR29524-02

REPORTED 11/27/98

RECEIVED 11/04/98

SAMPLE Solid

IDENTIFICATION Site #2-3
Kahului Harbor Sediment - Grab Samples
Date Collected 10/31/98 @ 0930hrs.

BASED ON SAMPLE As Submitted

TCLP EXTRACTION - INORGANICS

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Arsenic	5.0	EPA 7060	11/11 MT	ND< 0.002
Barium	100.0	EPA 6010	11/11 MT	1.19
Cadmium	1.0	EPA 6010	11/11 MT	0.006
Chromium	5.0	EPA 6010	11/11 MT	0.009
Lead	5.0	EPA 7421	11/11 MT	0.003
Mercury	0.2	EPA 7470	11/11 NS	ND< 0.004
Selenium	1.0	EPA 7740	11/11 MT	0.004
Silver	5.0	EPA 6010	11/11 MT	ND< 0.002

TCLP EXTRACTION - PESTICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Chlordane	0.03	EPA 8080	11/16 LS	ND< 0.01
Endrin	0.02	EPA 8080	11/16 LS	ND< 0.002
Heptachlor	0.008	EPA 8080	11/16 LS	ND< 0.001
Heptachlor Epoxide	0.008	EPA 8080	11/16 LS	ND< 0.001
Lindane	0.4	EPA 8080	11/16 LS	ND< 0.001
Methoxychlor	10.0	EPA 8080	11/16 LS	ND< 0.05
Toxaphene	0.5	EPA 8080	11/16 LS	ND< 0.01
PCB's	---	EPA 8080	11/16 LS	ND< 0.0001

TCLP EXTRACTION - HERBICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
2,4-D	10.0	EPA 8150	11/23 LS	ND< 0.05
2,4,5-TP (Silvex)	1.0	EPA 8150	11/23 LS	ND< 0.01

Continued on Next page

lient: Marine Research Consultants
ab No: LR29524-02

TCLP EXTRACTION - VOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Benzene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Carbon Tetrachloride	0.5	EPA 8240	11/13 AHT	ND< 0.01
Chlorobenzene	100.0	EPA 8240	11/13 AHT	ND< 0.01
Chloroform	6.0	EPA 8240	11/13 AHT	ND< 0.01
1,2-Dichloroethane	0.5	EPA 8240	11/13 AHT	ND< 0.01
1,1-Dichloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Methyl-ethyl-ketone	200.0	EPA 8240	11/13 AHT	ND< 0.01
Tetrachloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Trichloroethylene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Vinyl Chloride	0.25	EPA 8240	11/13 AHT	ND< 0.06

TCLP EXTRACTION - SEMIVOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
o-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
m-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
p-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
1,4-Dichlorobenzene	7.5	EPA 8270	11/13 PS	ND< 0.01
2,4-Dinitrotoluene	0.13	EPA 8270	11/13 PS	ND< 0.05
Hexachlorobenzene	0.13	EPA 8270	11/13 PS	ND< 0.01
Hexachloro-1-3-butadiene	0.5	EPA 8270	11/13 PS	ND< 0.01
Hexachloroethane	3.0	EPA 8270	11/13 PS	ND< 0.01
Nitrobenzene	2.0	EPA 8270	11/13 PS	ND< 0.01
Pentachlorophenol	100.0	EPA 8270	11/13 PS	ND< 0.05
2,4,5-Trichlorophenol	400.0	EPA 8270	11/13 PS	ND< 0.05
2,4,6-Trichlorophenol	2.0	EPA 8270	11/13 PS	ND< 0.05
Pyridine	5.0	EPA 8270	11/13 PS	ND< 0.5

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/gk

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 FAX 714/538-1209

CLIENT

Marine Research Consultants
Attn: Steve Dollar
4467 Sierra Dr.
Honolulu, Hi. 96816

LAB NO. LR29524-03

REPORTED 11/27/98

SAMPLE Solid

IDENTIFICATION Site #4-5
Kahului Harbor Sediment - Grab Samples
Date Collected 10/31/98 @ 0930hrs.

BASED ON SAMPLE As Submitted

RECEIVED 11/04/98

TCLP EXTRACTION - INORGANICS

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Arsenic	5.0	EPA 7060	11/11 MT	0.002
Barium	100.0	EPA 6010	11/11 MT	1.04
Cadmium	1.0	EPA 6010	11/11 MT	ND< 0.003
Chromium	5.0	EPA 6010	11/11 MT	0.009
Lead	5.0	EPA 7421	11/11 MT	0.002
Mercury	0.2	EPA 7470	11/11 NS	ND< 0.004
Selenium	1.0	EPA 7740	11/11 MT	0.006
Silver	5.0	EPA 6010	11/11 MT	ND< 0.002

TCLP EXTRACTION - PESTICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Chlordane	0.03	EPA 8080	11/16 LS	ND< 0.01
Endrin	0.02	EPA 8080	11/16 LS	ND< 0.002
Heptachlor	0.008	EPA 8080	11/16 LS	ND< 0.001
Heptachlor Epoxide	0.008	EPA 8080	11/16 LS	ND< 0.001
Lindane	0.4	EPA 8080	11/16 LS	ND< 0.001
Methoxychlor	10.0	EPA 8080	11/16 LS	ND< 0.05
Toxaphene	0.5	EPA 8080	11/16 LS	ND< 0.01
PCB's	---	EPA 8080	11/16 LS	ND< 0.0001

TCLP EXTRACTION - HERBICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
2,4-D	10.0	EPA 8150	11/23 LS	ND< 0.05
2,4,5-TP (Silvex)	1.0	EPA 8150	11/23 LS	ND< 0.01

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OM

Client: Marine Research Consultants
Lab No: LR29524-03

TCLP EXTRACTION - VOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Benzene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Carbon Tetrachloride	0.5	EPA 8240	11/13 AHT	ND< 0.01
Chlorobenzene	100.0	EPA 8240	11/13 AHT	ND< 0.01
Chloroform	6.0	EPA 8240	11/13 AHT	ND< 0.01
1,2-Dichloroethane	0.5	EPA 8240	11/13 AHT	ND< 0.01
1,1-Dichloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Methyl-ethyl-ketone	200.0	EPA 8240	11/13 AHT	ND< 0.01
Tetrachloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Trichloroethylene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Vinyl Chloride	0.25	EPA 8240	11/13 AHT	ND< 0.06

TCLP EXTRACTION - SEMIVOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
o-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
m-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
p-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
1,4-Dichlorobenzene	7.5	EPA 8270	11/13 PS	ND< 0.01
2,4-Dinitrotoluene	0.13	EPA 8270	11/13 PS	ND< 0.05
Hexachlorobenzene	0.13	EPA 8270	11/13 PS	ND< 0.01
Hexachloro-1-3-butadiene	0.5	EPA 8270	11/13 PS	ND< 0.01
Hexachloroethane	3.0	EPA 8270	11/13 PS	ND< 0.01
Nitrobenzene	2.0	EPA 8270	11/13 PS	ND< 0.01
Pentachlorophenol	100.0	EPA 8270	11/13 PS	ND< 0.05
2,4,5-Trichlorophenol	400.0	EPA 8270	11/13 PS	ND< 0.05
2,4,6-Trichlorophenol	2.0	EPA 8270	11/13 PS	ND< 0.05
Pyridine	5.0	EPA 8270	11/13 PS	ND< 0.5

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/gk

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900
FAX 714/538-1209

CLIENT

Marine Research Consultants
Attn: Steve Dollar
4467 Sierra Dr.
Honolulu, Hi. 96816

LAB NO LR29524-04

REPORTED 11/27/98

RECEIVED 11/04/98

SAMPLE Solid

IDENTIFICATION Site #6-7
Kahului Harbor Sediment - Grab Samples
Date Collected 10/31/98 @ 0930hrs.

BASED ON SAMPLE As Submitted

TCLP EXTRACTION - INORGANICS

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Arsenic	5.0	EPA 7060	11/11 MT	0.002
Barium	100.0	EPA 6010	11/11 MT	1.12
Cadmium	1.0	EPA 6010	11/11 MT	ND< 0.003
Chromium	5.0	EPA 6010	11/11 MT	0.010
Lead	5.0	EPA 7421	11/11 MT	0.002
Mercury	0.2	EPA 7470	11/11 NS	ND< 0.004
Selenium	1.0	EPA 7740	11/11 MT	0.002
Silver	5.0	EPA 6010	11/11 MT	ND< 0.002

TCLP EXTRACTION - PESTICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Chlordane	0.03	EPA 8080	11/16 LS	ND< 0.01
Endrin	0.02	EPA 8080	11/16 LS	ND< 0.002
Heptachlor	0.008	EPA 8080	11/16 LS	ND< 0.001
Heptachlor Epoxide	0.008	EPA 8080	11/16 LS	ND< 0.001
Lindane	0.4	EPA 8080	11/16 LS	ND< 0.001
Methoxychlor	10.0	EPA 8080	11/16 LS	ND< 0.05
Toxaphene	0.5	EPA 8080	11/16 LS	ND< 0.01
PCB's	---	EPA 8080	11/16 LS	ND< 0.0001

TCLP EXTRACTION - HERBICIDES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
2,4-D	10.0	EPA 8150	11/23 LS	ND< 0.05
2,4,5-TP (Silvex)	1.0	EPA 8150	11/23 LS	ND< 0.01

Cont'd on Next page

Client: Marine Research Consultants
Lab No: LR29524-04

TCLP EXTRACTION - VOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
Benzene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Carbon Tetrachloride	0.5	EPA 8240	11/13 AHT	ND< 0.01
Chlorobenzene	100.0	EPA 8240	11/13 AHT	ND< 0.01
Chloroform	6.0	EPA 8240	11/13 AHT	ND< 0.01
1,2-Dichloroethane	0.5	EPA 8240	11/13 AHT	ND< 0.01
1,1-Dichloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Methyl-ethyl-ketone	200.0	EPA 8240	11/13 AHT	ND< 0.01
Tetrachloroethylene	0.7	EPA 8240	11/13 AHT	ND< 0.01
Trichloroethylene	0.5	EPA 8240	11/13 AHT	ND< 0.01
Vinyl Chloride	0.25	EPA 8240	11/13 AHT	ND< 0.06

TCLP EXTRACTION - SEMIVOLATILES

	Limits (mg/l)	Method	Date/Analyst	Results (mg/l)
o-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
m-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
p-Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
Cresol	200.0	EPA 8270	11/13 PS	ND< 0.01
1,4-Dichlorobenzene	7.5	EPA 8270	11/13 PS	ND< 0.01
2,4-Dinitrotoluene	0.13	EPA 8270	11/13 PS	ND< 0.05
Hexachlorobenzene	0.13	EPA 8270	11/13 PS	ND< 0.01
Hexachloro-1-3-butadiene	0.5	EPA 8270	11/13 PS	ND< 0.01
Hexachloroethane	3.0	EPA 8270	11/13 PS	ND< 0.01
Nitrobenzene	2.0	EPA 8270	11/13 PS	ND< 0.01
Pentachlorophenol	100.0	EPA 8270	11/13 PS	ND< 0.05
2,4,5-Trichlorophenol	400.0	EPA 8270	11/13 PS	ND< 0.05
2,4,6-Trichlorophenol	2.0	EPA 8270	11/13 PS	ND< 0.05
Pyridine	5.0	EPA 8270	11/13 PS	ND< 0.5

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/gk

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

29524

CHAIN OF CUSTODY

SUBMITTED BY:

MARINE RESEARCH CONSULTANTS
4467 SIERRA DR. HON., HI 96816

SUBMITTED TO:

ASSOCIATED LABS
806 N. BATAVIA ORANGE, CA 92868

PROJECT: Kahului Harbor Sediment Analysis

SAMPLE NO.	SAMPLE ID	DATE	TIME	SAMPLE TYPE	# OF CONTAINERS	REQUESTED ANALYSES	PRESERVE
1	Site 1	10/31/98	0930	GRAB	1	Method 1311 (TCLP)	
2	Site 2-3	"	"	"	1	Method 1311 (TCLP)	
3	Site 4-5	"	"	"	1	Method 1311 (TCLP)	
4	Site 6-7	"	"	"	1	Method 1311 (TCLP)	
5							
6							
7							
8							
9							
10							
11							
12							
13							

SAMPLED BY:	RELINQUISHED BY:	RECEIVED BY:
STEVE DOLLAR 10/31/98	STEVE DOLLAR 11/2/98	Ken Mulsey 11-4-98
PRINT DATE	PRINT DATE	PRINT DATE
0930	0830	1500
SIGNATURE TIME	SIGNATURE TIME	SIGNATURE TIME

PLEASE SIGN AND RETURN WITH SAMPLE RESULTS

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX E - ECONOMIC ANALYSIS UPDATE

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS
ECONOMIC ANALYSIS UPDATE
30 November 2000
Revised 27 August 2002

I. Purpose.

The purpose of this analysis is to update and verify the findings in the Economics appendix of the Kahului Light Draft Navigation Improvements study that was completed in 1989. This update is based on a limited evaluation of the changes that have taken place since that report was completed. The intent of this analysis is to adjust the benefit-cost ratio and net benefits using recent data to update existing information and not to conduct another feasibility level economic analysis.

II. Methodology.

The benefits and costs associated with the recommended plan were updated in this study using a combination of information in the original report, current cost estimates, recent data gathered from individuals familiar with commercial fishing at Kahului Harbor, and a review performed by the National Marine Fisheries Service (NMFS). Data on the number of fishermen, the number of trips taken, and the average catch per trip obtained from the original report were discussed and reconfirmed with current users of the existing navigation facility. Fishermen that use the launch ramp provided information on the operating costs involved in commercial fishing out of Kahului Harbor. The NMFS did a cursory update of the condition of the Maui fishery. Together, the information from all these sources was combined to reassess the findings from the original 1989 report.

III. Existing Conditions.

The availability of launch facilities for small boats in the Kahului area has not changed substantially since the 1989 report. The launch ramp at Kahului Harbor remains the only adequate facility for small boats that is open all year. As mentioned in the original report, there is a ramp at Maliko Bay about 10 miles east of Kahului, but this ramp has a very poor access road and the bay is frequently closed out completely by heavy winter storm waves. It is only marginally usable and often times not a viable alternative launch site. The existing facility at Kahului is still a single-lane launch ramp located on fill in the northwestern corner of the commercial deep draft harbor. No substantial improvements or expansions have taken place since 1989 at Kahului Harbor or anywhere on the north shore of Maui.

Facilities may have not changed over the years, but the level of commercial fishing activity seems to have intensified off of Maui's north shore. Interviews with members of the trailer boat club that use the launch ramp indicate that commercial fishing out of Kahului Harbor has increased in the years since the 1989 report was completed. Data from the Department of Land and Natural Resources' Division of Aquatic Resources

seems to confirm their observations. In 1987, when the survey for the study was taken, 65 commercial fishermen reported landing 62,576 pounds of fish at Kahului. In 1999, 97 commercial fishermen landed 75,122 pounds of fish at Kahului Harbor. While the number of fishermen using Kahului Harbor and the amount of fish landed there vary from year to year, the trend appears to be upward.

IV. Without-project Conditions.

Under without-project conditions, the survey taken in 1987 revealed that there were approximately 32 full-time equivalent vessels taking 51 trips from Maui facilities each year. The catch per trip was estimated at 262 pounds. These findings were also used in this analysis.

The price per pound for the catch that is sold, however, was updated. Based on information from the Department of Land and Natural Resources' Aquatic Resources Division, the price received by fishermen for their catch increased from $2.14 in the 1989 report to $3.05 per pound in 1998. Using the increase in the Consumer Price Index - All Urban Consumers (CPI-U), the 1998 price per pound was adjusted to a 2000 price level. The adjusted price is $3.05 x 1.01 x 1.02 = $3.14 per pound. The value of the catch per trip is 262 pounds per trip x $3.14 per pound = $823 per trip. The value of the catch per trip from the 1989 report was 262 pounds per trip x $2.14 = $561.

Likewise, the operating costs associated with each commercial fishing trip have increased over the years. Operating costs in the 1989 report included the cost of purchasing fuel and oil, ice, bait, gear, supplies, and other necessities for each trip. According to knowledgeable fishermen who launch out of Kahului, these operating costs have increased about 59 percent over the years. In the 1989 report, the total operating cost per trip was $141. A 2000 operating cost of $141 per trip x 1.59 = $224 per trip is used in this analysis.

(The fixed costs associated with owning a commercial fishing boat were left out of the benefit calculations in this update. In the 1989 report, the fixed costs were equal for the without- and with-project alternatives and did not impact the benefit analysis. These costs were left out of this update due to the difficulty in obtaining reliable data and the fact that the outcome of the analysis will not be affected by including these costs.)

The crew share in this update is based on the same 29.5 percent of gross revenue less operating costs per trip as in the original study. In the 1989 report, the crew share under without-project conditions equaled $561 - $141 = $420 x 0.295 = $124 per trip. This figure has been updated to $823 per trip - $224 per trip = $599 x 0.295 = $177 per trip.

The total net revenue per trip for the without-project conditions in the 1989 report was $561 - $141 - $124 = $296 per trip. This has been updated to $823 - $224 - $177 = $422 per trip.

V. With-project Conditions.

Under with-project conditions, the existing launch ramp at Kahului Harbor will be improved and expanded. The proposed plan is a mix of both federal and non-federal features. The federal features include removing the existing rock groin, constructing a new breakwater, and dredging a new turning basin and entrance channel. The new breakwater will be 130 feet long with a crest elevation of +9 feet. The turning basin will be 100 feet by 100 feet with a depth of -8.5 feet. The entrance channel will be 1,030 feet long and 50 feet wide with a depth of -9.5 feet. The non-federal features include putting in a new three-lane launch ramp, two new concrete docks, new revetments, various landside improvements, and dredging the dock area and transition area. Each lane in the three-lane launch ramp will be 15 feet wide. The two new concrete docks will be 125 feet and 50 feet long. The docking area will be 18 feet wide and dredged to a depth of -6 feet while the transition area will be dredged to a depth of -7.5 feet. The combined features of the proposed plan will make the launch facility for small boats at Kahului Harbor more efficient and safe for the users.

The survey taken in 1987 revealed that boats launching from Maui facilities would take 79 fishing trips each year under with-project conditions (Optimized Scenario). This finding was also used in the updated analysis. The amount of fish caught under with-project conditions was estimated at 252 pounds per trip. This catch was adjusted to take into account the impact that additional fishing would have on the supply of available bottomfish and pelagic species. For the 1989 study, the National Marine Fisheries Service (NMFS) estimated that for every 100 additional fishing trips the catch rate would decrease by 7.3 pounds per trip. A review of the findings used in the 1989 report was conducted by the NMFS for this update. Using available data, the NMFS concluded that the resource constraints estimated in the 1989 report are still applicable. This being the case, the catch of 252 pounds per vessel for the with-project conditions is also used in this analysis. The NMFS review is included in this report as an appendix.

As in the without-project conditions, the price for the catch that is sold has been updated for the with-project conditions as well. Based on information from the Department of Land and Natural Resources' Aquatic Resources Division, the price received by fishermen for their catch was increased to $3.14 per pound in 2000 dollars. The gross revenue per trip was estimated to be 252 pounds per trip x $3.14 per pound = $791 per trip.

As under the without-project conditions, the operating cost associated with each commercial fishing trip for the with-project conditions was also increased by 59 percent from $141 to $224 per trip. This increase was obtained from interviews with knowledgeable fishermen as described earlier

The crew share for the with-project conditions is based on the 29.5 percent of gross revenue less operating costs per trip used in the calculations for the without-project conditions. The 2000 crew share under with-project conditions is estimated to be $791 per trip - $224 per trip = $567 x 0.295 = $167 per trip.

The total net revenue per trip for the with-project conditions is revised to $791 - $224 - $167 = $400 per trip.

VI. Benefit Calculations.

The benefits associated with the project are measured as the increase in total income (net revenue + crew share). This was computed by multiplying the revised income per trip by the number of trips per vessel and the number of full-time equivalent vessels. The number of trips per vessel and number of full-time equivalent vessels under without- and with-project conditions were taken from the 1989 report.

The revised total income under without-project conditions is $422 per trip + $177 per trip = $599 per trip x 51 trips per vessel = $30,549 per vessel x 32 vessels = $977,568. The revised total income under with-project conditions is $400 per trip + $167 per trip = $567 per trip x 79 trips per vessel = $44,793 per vessel x 34.5 vessels = $1,545,359. The revised benefits associated with improvements to the Kahului Harbor launch ramp facility is equal to the difference in total income under with- and without-project conditions or $1,545,359 - $977,568 = $567,791, rounded to $568,000, annually.

VII. Project Costs.

The construction cost of the federal features described in Section V was prepared in July 2001 using a July 2002 price level. These costs were adjusted to an October 2000 price level using the quarterly cost indices in Engineer Manual 1110-2-1304, revised March 31, 2002. The costs at the October 2000 price level are summarized in Table 2 below.

Table 2.
Project Costs for Federal Features
October 2000 Price Level

Item	Cost
Mob/Demob	$ 118,000
Dredge Turning Basin & Entrance Channel	$ 839,000
Breakwater	$ 421,000
Total First Cost for Federal Features	$1,378,000

The cost for Plans and Specifications (P&S) is about $647,000. The Supervision and Administration (S&A) cost associated with the federal features has been estimated at $148,000. The cost for Engineering During Construction (EDC) is another $20,000. The total first cost based on the information in Table 1 and the estimates for P&S, S&A and EDC is $1,378,000 + $647,000 + $148,000 + 20,000 = $2,193,000. The interest during construction based on this first cost, a 12-month construction period, and a discount rate of 6-1/8 percent is $66,000. The total investment cost of the federal project is $2,193,000 + $66,000 = $2,259,000. This investment cost was amortized over a 50-year study period using a capital recovery factor of 0.06455. The amortized investment cost of the federal

features equals $146,000. An operation and maintenance cost of $39,000 a year is added to the amortized investment cost to get an average annual cost estimate of $185,000 for the federal features.

The associated costs of the non-federal features are in Table 3. Associated costs are the costs of measures needed over and above project measures to achieve the benefits claimed during the period of analysis.

Table 3.
Associated Costs for Non-Federal Features

Item	Cost
Site Work	$ 48,000
Boat Ramp	$ 252,000
Loading Dock A	$ 290,000
Loading Dock B	$ 57,000
Revetment	$ 86,000
Supervision and Administration	$ 98,000
Associated Costs for Non-Federal Features	$ 831,000

The associated costs were amortized over a 50-year study period using a capital recovery factor of 0.06455. The amortized associated cost equals $54,000.

The total average annual cost estimate of the federal features and associated costs for the non-federal features is $185,000 + $54,000 = $239,000.

VIII. Project Economics.

The revised benefit-cost ratio for the recommended alternative based on the analyses in this study is $568,000/$239,000 = 2.38. The benefit-cost ratio in the original study was $339,000/$207,000 = 1.6. The net benefits generated by this project have increased from $132,000 to $329,000.

IX. Conclusion and Recommendations.

The results of this limited reanalysis indicate that the improvements to the light draft navigation facilities at Kahului Harbor remain viable. Continuation of the development of this project is recommended.

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENTS
ECONOMIC ANALYSIS UPDATE

APPENDIX A
UPDATE ON KAHULUI, MAUI FISHERY

Prepared by
DR. SAM POOLEY, ACTING DIRECTOR
HONOLULU LABORATORY
NATIONAL MARINE FISHERIES SERVICE
May 15, 2000

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Science Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396
(808)983-5300 • Fax: (808)983-2902

May 22, 2000

MEMORANDUM TO: Russell Iwamura, U.S. Corps of Engineers

FROM: Sam Pooley, Acting Director

SUBJECT: Update on Kahului, Maui fishery

The enclosed report is an update to our 1988 analysis of factors affecting the Kahului, Maui fishery. Our agency has not conducted formal stock assessments of the near-shore waters around Maui, so the new information on the fishery presented in this report is based on existing Hawaii Division of Aquatic Resources (HDAR) information and cooperative economic work with the Joint Institute for Marine and Atmospheric Research (JIMAR).

Normally, I would ask for review by John Naughton, our agency's Corps of Engineers coordinator here in Honolulu. Unfortunately John is on travel and will not be back in town until next week. I will ask him for comments when he returns.

The report has been reviewed by various staff specialists and approved by the Laboratory director. The NMFS Honolulu Laboratory does not take a position on the overall environmental, economic, or social advisabiliry of such harbor development. We do offer an opinion on the fishery consequences. We would also advise contacting the State of Hawaii's Department of Land and Natural Resource, Division of Aquatic Resources, who are responsible for fisheries management in the main Hawaiian Islands.

Attachment (1)

cc: RML, JJN, Walter Ikehara

Honolulu Laboratory
National Marine Fisheries Service
2570 Dole Street
Honolulu, HI 96822

Update on status of the small-boat commercial fishery operating out of Kahului, Maui

May 15, 2000

Samuel G. Pooley, Ph.D.
Chief, Fishery Monitoring & Economics Program

Introduction

In 1988 the NMFS Honolulu Laboratory's industry economist, with the assistance of other staff, conducted a fishery description and economic analysis of factors that might affect a decision to improve small-boat launching facilities or harboring at Kahului, Maui.[1] This report updates the information provided in that report. As before, the NMFS Honolulu Laboratory does not take a position on the overall environmental, economic, or social advisability of such harbor development. We do offer an opinion on the fishery consequences.

Fishery description

Commercial fishing from Kahului harbor and fishing off the north coast of Maui[2] by boats from other ports remains quite small scale. Total reported commercial landings for Kahului in 1998 were 69,000 pounds ($208,000 ex vessel). Reported commercial landings for the north coast of Maui (including boats launching from Kahului, other Maui ports, and non-Maui ports) were 191,500 pounds ($456,000 ex vessel). There were 330 license holders reporting landings at Maui ports in 1998, of which 91 license holders reported landings at Kahului harbor in 1998. There were 169 license holders who reported fishing off the north Maui coast (which would include vessels coming from other islands). Total landings from vessels landing at all Maui ports in 1998 were 706,900 pounds ($1,379,600 ex vessel). Kahului was the third most active small-boat port on Maui in 1998, next to Maalaea and Lahaina which feature substantial charter fishing

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[1] Samuel G. Pooley, 1988. Kahului small fishing boat facility: alternative net benefit estimates. Southwest Fisheries Center, Honolulu Laboratory manuscript MRF-004-89H, report prepared for U.S. Army Engineer Division, Pacific Ocean. 29 p.

[2] Data compiled by NMFS Honolulu Laboratory from Hawaii Division of Aquatic Resources (HDAR) commercial catch reports. Kahului harbor is identified as Port = 271 in HDAR data; we have defined the north coast of Maui to be the following Areas = 302, 303 322, 323 (the most immediately inshore areas) and 352, 353, and 355-358 (Nmaui.prg).

landings.[3] The following tables categorize landings by Port of Landing (Kahului, other Maui, and non-Maui ports, harbors and launching ramps) and by Area Fished (north Maui and Maui-Lanai-Molokai (MLM) fishing areas) as identified in HDAR commercial catch reports.

Table 1: Summary of Maui landings, 1998. Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

	All Maui ports (all fishing areas)	Kahului (port) only (all fishing areas)	north Maui fishing areas (all ports Statewide)
Licenses reporting	330	91	169
Trips	6,450	580	1,560
Pounds	706,900	69,000	191,500
Revenue	$1,379,600	$208,000	$456,000

In 1995-96, a cooperative research project with the University of Hawaii's Joint Institute for Marine and Atmospheric Research (JIMAR) pelagic fisheries research program conducted an intensive cost-earnings survey of small boat fisheries in Hawaii.[4] The results from this project suggest that a higher level of commercial small-boat fishing (excluding charter fishing) occurs at Kahului harbor than specifically identified from the HDAR data. Hamilton, the project's lead researcher, commented that 20 of 48 the surveys conducted on Maui were from boats regularly launching from Kahului harbor, and that these surveys were accomplished in just three days in August and December 1996. It is not possible to extrapolate the survey results to a population statistic, but it does suggest that Kahului is a popular small-boat launching ramp, perhaps the most popular on Maui.

Table 2 summarizes State of Hawaii Division of Aquatic Resources (HDAR) commercial catch report data for 1998 on Maui by port and area. Table 3 summarizes this information including landings at other ports.

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[3] HDAR landings figures and license numbers include pounds caught charter fishing, which is a predominant feature of Maalaea and Lahaina small-boat fishing activity. Charter fishing vessels regularly sell all or most of their catch in Hawaii.

[4] Hamilton, Marcia S and Stephen W. Huffman. 1997. Cost-earnings study of Hawaii's small boat fishery, 1995-96. University of Hawaii SOEST 97-06/JIMAR 97-314. 102 p.

Table 2: Cross-tabulation of landings in Maui area[5] by port, 1998. Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

1998 HDAR data, Pounds landed			
	Fishing Area		
Port of Landing	MLM Area	Other Areas	Total
Maui ports	683,848	23,086	706,934
Non-Maui ports	684,994		684,994
Total	1,368,842	23,086	1,391,928

Data source: Maui98a.xls (HDARMAIN.DBF 4/24/2000)

Table 3: Landings on North Maui and other areas by boats operating from Kahului, other Maui, or non-Maui ports, 1998. Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

1998 HDAR data, Pounds landed				
	Fishing Area			
Port of Landing	North Maui area	Other MLM areas	Non-Maui areas	Total
Kahului	46,304	17,835	4,928	69,067
Other Maui ports	65,105	554,604	18,158	637,867
Non-Maui ports	80,135	604,859		684,994
Total	191,544	1,177,298	23,086	1,391,928

Data compiled in Maui98a.xls (5/4/2000)

[5] MLM area = HDAR fishing areas identified for Maui-Lanai-Molokai combined.

Most fishing (71% of landings) on Maui's north coast is by troll and handline gears for tunas, billfish, and other pelagic species (i.e., open ocean species without localized resource constraints). Bottomfish, which face severe resource constraints in the main Hawaiian Islands, provide a small percentage (6%) of north Maui landings. Various other bottom-related species (e.g., lobster, shrimp, and octopus, as well as some reef fish) are taken on Maui's northern coast but in even smaller numbers. (Figures for the species catch composition of north Maui fishing areas are provided in Appendix Table A.) Although improving access to Maui's northern coast may increase fishing pressure on these bottom-related species to a certain extent, catch rates (as measured by catch per trip) are already low and thus bottomfish are not a primary target in this area. Improved access would appear to benefit larger-sized vessels likely to operate further off-shore without affecting the current access to smaller-sized vessels which would predominate in-shore. It would appear from the HDAR fishery statistics, and by the JIMAR economic survey, that most fishing is likely to continue to be directed towards the relatively more abundant pelagic species.

As indicated in our 1988 report, there is very little information on the "carrying capacity" of fisheries off the north coast of Maui. To our knowledge, no additional detailed resource assessment work has been conducted in that area. Since our earlier report, the State and the Western Pacific Regional Fishery Management Council (Council) have expressed concern about over-fishing of the bottomfish (snappers, groupers, and jacks) resource in the main Hawaiian Islands. In 1998 the State implemented a number of bottomfish closed areas in near-shore waters around the state, including area 13 between Makawana Point to Pauwela Point on Maui's north shore (approximately 13 x 2.5 nautical miles in area centered 3 miles off-shore).[6] While there are concerns about any increased fishing effort directed toward bottomfish anywhere in the main Hawaiian Islands, very few bottomfish have been targeted along the north coast of Maui. To the extent that there is an increase in such effort, this State area closure would appear to provide protection. Fishing pressure on the near-shore fisheries along the northern coasts of the main Hawaiian Islands is also reduced by the natural weather conditions (stronger winds and higher seas). Launch ramp improvements would likely support larger trailered (and the occasional moored) vessels which would target pelagic species using trolling gear targeting pelagic species at the various off-shore FADs (fish aggregating devices) placed by the State along the off-shore areas throughout Hawaii. (Kahului is particularly well placed to access a variety of these FADs.) There is also some concern by resident fishermen on the eastern shores of Maui about increased in-shore fishing by boats launching out of Keanae and Hana[7], but it is not obvious that the Kahului project would affect any of this type of fishing since the smaller-sized boats fishing in-shore would not likely travel from Kahului around Hana to the eastern shores of Maui.

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[6] Hawaii Administrative Rules, Title 13-94 (1998).

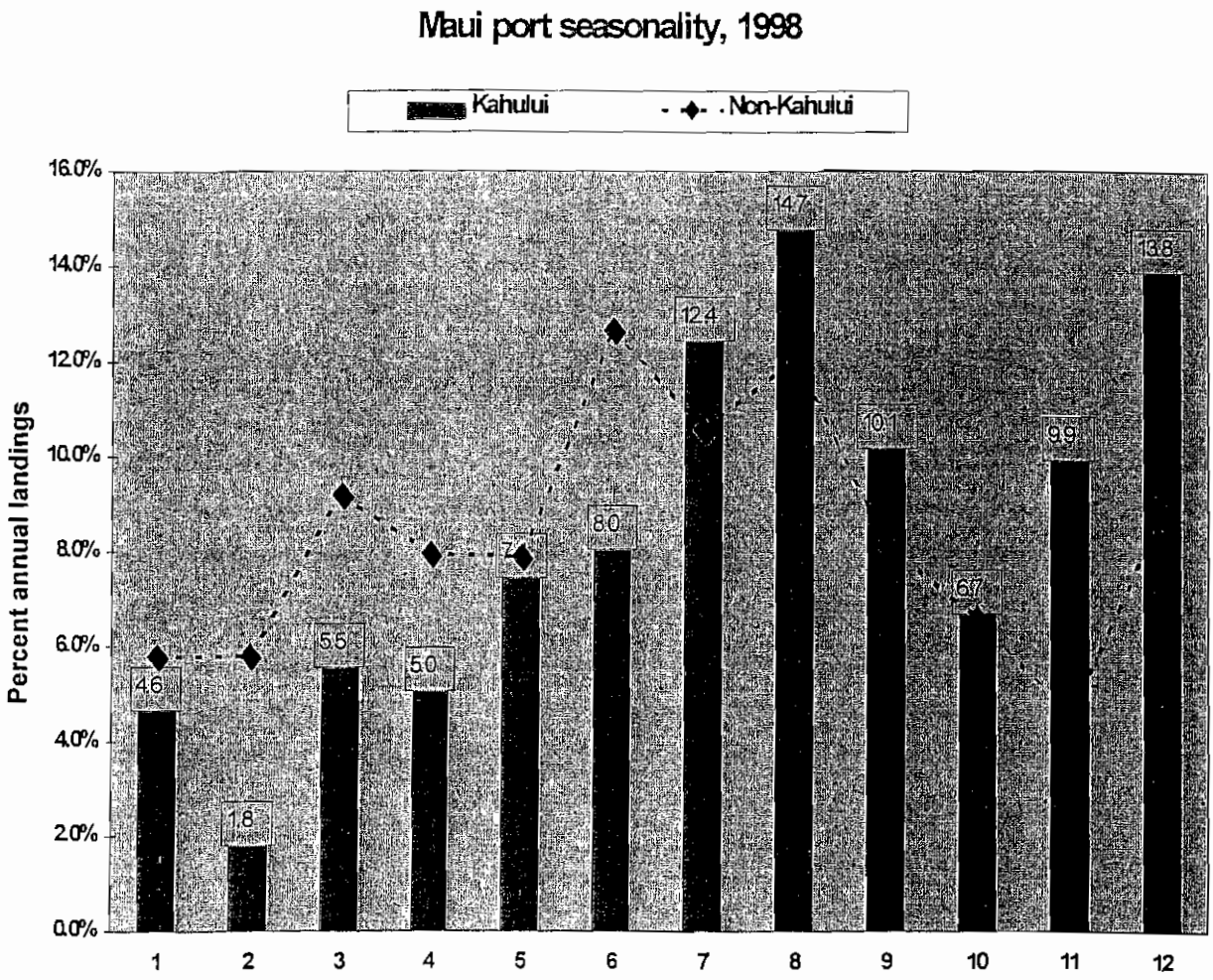
[7] Trailering boats from Maui's population centers (Wailuku, Kahului, upcountry, and Kihei) to these ramps is very difficult due to road conditions between Hana-Keanae and the rest of Maui.

Small-scale fishing boats in Hawaii are frequently if not usually trailered and transported around each island (to the extent possible) depending on seasonal catchability and weather conditions. A strong seasonal pattern can be seen by comparing landings from all Maui ports for 1998 with those from Kahului (Table 4 and Figure 1). Although there is substantial similarity in the seasonal pattern, it is also clear that there is more activity from the Kahului launching ramp in the summer months (July - August) and in the peak market months (November - December) than in the other months. As such, Kahului represents an important option for Maui fishermen during significant periods of the year.

Table 4: Monthly landings from Maui ports and from Kahului as % of annual landings, 1998. Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

	Pounds Landed			% Annual Pounds		
MO	All Maui Ports	Kahului	Other Maui ports	All Maui ports	Kahului	Other Maui ports
1	40,258	3,191	37,067	5.7%	4.6%	5.8%
2	38,270	1,214	37,056	5.4%	1.8%	5.8%
3	62,402	3,822	58,580	8.8%	5.5%	9.2%
4	54,129	3,475	50,654	7.7%	5.0%	7.9%
5	55,486	5,115	50,371	7.8%	7.4%	7.9%
6	86,322	5,528	80,794	12.2%	8.0%	12.7%
7	75,906	8,561	67,345	10.7%	12.4%	10.6%
8	87,221	10,183	77,038	12.3%	14.7%	12.1%
9	58,907	6,991	51,916	8.3%	10.1%	8.1%
10	46,684	4,602	42,082	6.6%	6.7%	6.6%
11	35,833	6,826	29,007	5.1%	9.9%	4.5%
12	65,516	9,559	55,957	9.3%	13.8%	8.8%
1998 Annual	706,934	69,067	637,867	100.0%	100.0%	100.0%

Figure 1: Monthly landings from Kahului and non-Kahului Maui ports as percent of annual landings. (Data labels are for Kahului landings only.) Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.



HDAR data show that the 91 fishers reporting commercial landings at Kahului in 1998 made 582 trips, i.e., 6.4 trips per person from Kahului. However, a large proportion of these people made less than 10 trips from Kahului (79%). Of the remaining participants, the average number of trips was 18 from Kahului, with 33 trips being the maximum recorded. The average trip from Kahului landed 119 pounds. Similar figures were found for north Maui catch, although this catch includes vessels home-ported elsewhere.

Since boats that fish from Kahului normally do not fish only from Kahului, we must examine the average activity of boats fishing from all of Maui's ports to get a more complete picture of their annual activity. Unfortunately HDAR data do not differentiate catch from small-scale commercial boats from other boats (e.g., charter fishing boats). Nonetheless, the average Maui boat takes an average of 20 trips per year. From this we can infer that Kahului provides access for 32% of Maui's commercial fishing trips. It is possible that accounting for charter boat fishing at Lahaina and Maalaea might lead to the conclusion that Kahului leads the island for non-charter commercial fishing trips.

Comparing the 1998-96 period with the 1986-84 period using HDAR data for Kahului, all Maui ports, and north Maui fishing areas shows no dramatic changes for fishing activity based in Maui (Appendix Table B). The number of trips has increased from all Maui ports by 26% but only 11% from Kahului and 13% in north Maui fishing areas. The difference between Maui ports as a whole, and the north Maui area, may be attributable to increased charter boat activity in west Maui. The data also show the high variability in inter-annual trip behavior and catch per trip[8] for a particular port (e.g, Kahului) compared to Maui ports as a whole, confirming the opportunistic underpinning of small boat fishing strategies in Hawaii.

Finally, we also constructed a simple time-series of recorded commercial landings from Kahului and north Maui to show trends over the past five years (Table 5). As is usually the case in Hawaii, there is considerable inter-annual variation (28% coefficient of variation for Kahului landings and 24% for north Maui landings). As will be shown by subsequent figures, there is no significant trend in the time-series.

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[8] Catch per trip was defined as Pounds Caught per date recorded in the HDAR commercial catch reports. For vessels operating out of Maui, Hamilton and Huffman (1996) show that almost all vessels took one-day trips.

Table 5: Landings at Kahului launching ramp and harbor and from north coast areas of the main Hawaiian Islands, 1990-98. Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

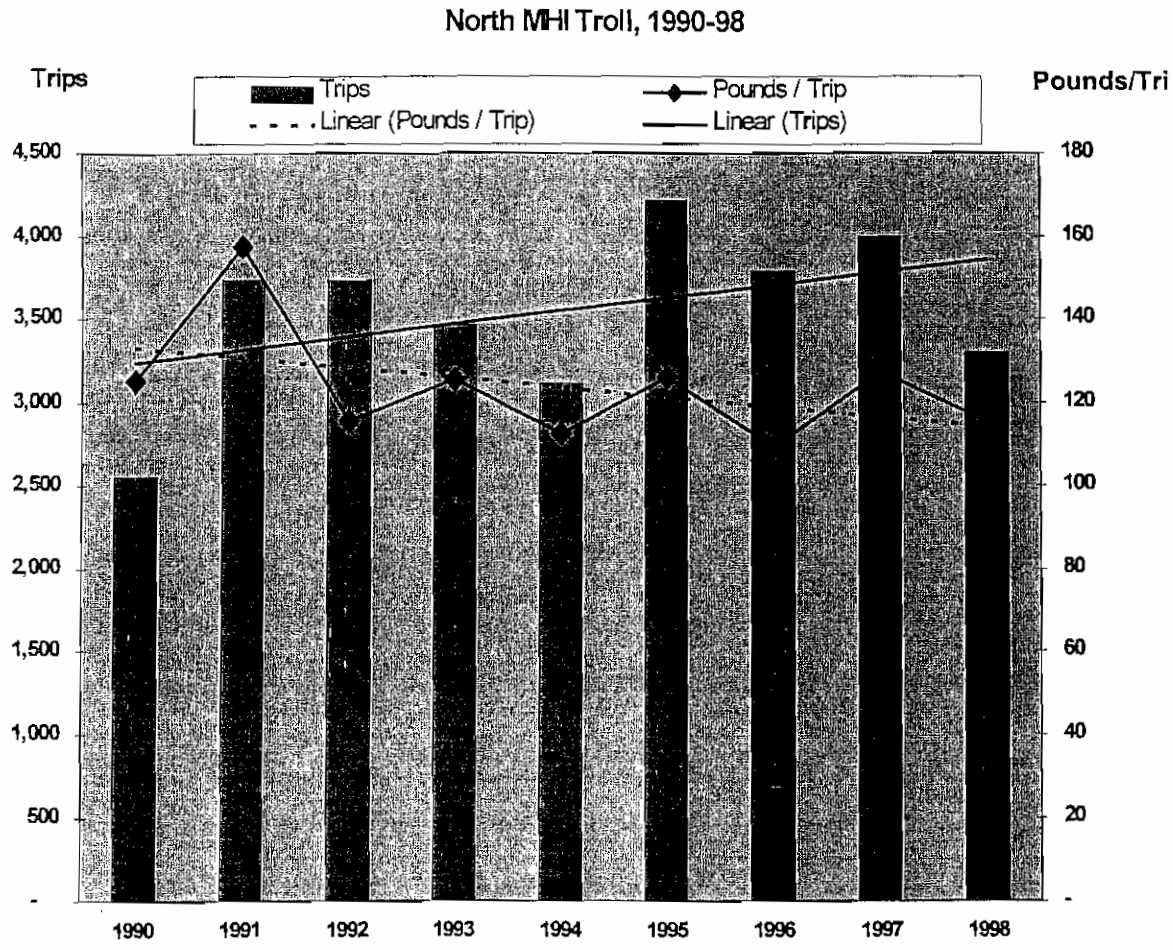
	Kahului launching ramp		North Maui fishing areas	
	Pounds	Revenue	Pounds	Revenue
1994	83,500	110,100	169,000	449,600
1995	48,500	170,700	258,000	573,200
1996	82,800	187,600	248,500	558,300
1997	108,900	247,800	264,500	548,200
1998	69,000	208,000	152,100	392,300
Average	78,540	184,840	218,420	504,320
CoV	28%	27%	24%	16%

In our earlier report, we constructed a "resource density equation" as a proxy for the short-term interaction of the number of fishing trips with the volume of landings. We replicated the basis for this analysis for the 1990-98 period for the northern coasts of Maui and the adjacent islands (Oahu, Molokai, and Hawaii) using average catch per trip for trolling gears. Figure 2 summarizes these results. There was no statistically significant relationship between Catch per Trip and the Number of Trips in the recent period.[9] This suggests that a moderate increase in fishing activity from Kahului should not affect the catch rates for the main target species, i.e., pelagics. In addition, fishing conditions for pelagic species from small boats may have improved since the period covered by the 1988 report because of area closures which restrict large commercial longline vessels from fishing within 25-50 miles of the coasts of the Hawaiian Islands which were implemented in 1990-91. Hypothetically this may have increased the relative density of pelagic species available for small boats and thus reduced the salience of the resource density equation in the current period.[10]

[9] There was a slight downward trend in Catch per Trip and a slight upward trend in the Number of Trips. However these time trends were not statistically significant.

[10] We say hypothetically since an ex post examination of the relationship has not been conducted.

Figure 2: Trips and Catch per Trip, north coasts of the main Hawaiian Islands (MHI), 1990-98.
Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.



Economic status

Hamilton and Huffman (1997) conducted field interviews with small fishing boat operators (excluding charter boats) at launching ramps and small boat harbors throughout Hawaii in 1995 and 1996. These were not random samples (the interviewers made special efforts to identify operators of active, pelagic fishing vessels) and thus the sample may reflect some avidity bias, but it also reflects the characteristics of the fishermen most likely to utilize small boat facilities. They were successful in interviewing 48 small fishing boat operators on Maui, with good cooperation from participants. Hamilton (1999) categorized the Hawaii small-boat fleet by operator motivation into full- and part-time commercial, expense fishing (covering costs), and recreational (no sales)[11]. We report those results in the following paragraphs.

Only one (1) full-time small boat fisherman was interviewed on Maui, and thus the results from that interview were not reported due to the NOAA confidentiality policy.[12] Eleven (11) part-time fishermen were interviewed on Maui, of whom 9 identified themselves as primarily pelagic fishermen. These fishermen averaged 42 commercial trips per year. Twenty four (24) "expense" fishermen were interviewed, of whom sixteen were identified as primarily pelagic. These fishermen averaged 40 commercial trips per year. Of these 33 were trolling trips with bottomfish trips being 3 trips per year. Twelve (12) recreational fishermen were also interviewed.

Breaking the data down by port indicates that the aggregate data for Maui are consistent with the data derived just from interviews of fishermen from Kahului (furthermore, because these are trailered boats, the trips recorded from the Kahului interviews could have been from any port on Maui). As a result, we will use the published Maui data for the remainder of this analysis. Since the Corps of Engineers project relies on commercial fishing income to project its benefits, we report the results from the part-time commercial and expense categories from the Hamilton and Huffman analysis (i.e., from fishermen who received income from their fish).

The average small boat used for part-time pelagic fishing on Maui is 23 feet in length overall, valued at $32,000 (purchase price) with $3,000 for trailer costs and $11,000 in additional capital costs (additional electronics, other upgrades, and major fishing gear). Fixed costs per year were $5,500. Trip costs (fuel, bait, etc) were $185 per trip for Maui small boats, the highest amongst the Hawaii small boat fisheries, probably reflecting the importance of trolling for Maui small boat operators. Most vessels operated with 2-3 fishermen (including the captain).

Maui part-time small boat operators fished an average 13 miles from shore (but up to 25-40 miles from shore). Average total catch for the year was 3,800 pounds, of which 3,300 pounds were from trolling. 3,000 pounds were sold for an ex-vessel value of $6,500.

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[11] Hamilton, Marcia. 1999. A system for classifying small boat fishermen in Hawaii. Marine Resource Economics 13:289-291.

[12] We return to the question of full-time commercial fishing operations on Maui later in this report.

The average small boat used for expense fishing on Maui is 23 feet in length overall, valued at $16,000 (purchase price) with $3,800 for trailer costs and $12,000 in additional capital costs (additional electronics, other upgrades, and major fishing gear). Fixed costs per year were $2,750 annually. Trip costs (fuel, bait, etc) were $165 on Maui, the highest amongst the Hawaii small boat expense fisheries, probably reflecting the importance of trolling for Maui small boat operators. Most vessels operated with 2-3 fishermen (including the captain).

Maui small boat expense fishermen fished an average 12 miles from shore (but up to 25-30 miles from shore), both the furthest for Hawaii small boat operators. Average total catch for the year was 2,300 pounds, of which 2,100 pounds were from trolling.

The following table summarizes the economic information from the Hamilton and Huffman research.

Table 6: Summary of economic information from Maui small-boat surveys, 1995-96.[13] (Hamilton and Huffman, 1997)

	Maui small-boats		
	part-time pelagic	part-time trollers	*expense* pelagic
N =	9	6	16
Vessel length (feet in length overall)	23	24	23
Investment	$ 46,000	$ 46,100	$32,555
Commercial trips	42	49	40
Annual Pounds	3,800	3,800	2,300
Annual Revenue	$ 6,400	$ 6,350	$ 2,035
Annual Fixed costs	$ 5,405	$ 5,535	$ 2,745
*Pounds/Trip	90	78	58
*Revenue/Trip	$ 152	$ 130	$ 51
Cost/Trip	185	237	165
*Net/Trip	(33)	(107)	(114)
Tables	C8-13	F8-F13	H1-6
* = calculated			

It is clear from the above table that the average Maui small-boat fisherman is not making a living from their reported fishing revenue. However averages do not reveal the distribution of net revenue (i.e., some of these fishermen are making more than others) and seeking revenue information through surveys is inherently difficult. Since it may well be that the harbor and

[13] Part-time pelagic includes the part-time trollers.

launching ramp situation precludes full-time small-boat fishing in Maui[14], we report the State-wide average figures for full-time pelagic fishing boats. These full-time small-boat fishermen (33 interviews statewide) averaged 159 trips per year, of which 70.7 are trolling trips. (Statewide there is a higher use of pelagic and bottom handline gear than on Maui.) These vessels are also quite small, 26 feet in length overall, with a purchase price of $34,000 and an additional $21,000 invested in the operation. Average annual fixed costs were $8,100 and variable (trip) costs were $135 per trip. Total landings were 25,000 pounds, of which 21,000 pounds were pelagic species. Ex-vessel revenue was $53,000 per vessel per year. These fishermen reported 95% of their personal income was derived from fishing, compared to 14% for part-time fishermen. The following table summarizes the Maui-wide results from Hamilton and Huffman's cost-earnings research.

Table 7: Summary of economic information from Hawaii (statewide) small-boat surveys, 1995-96 (Hamilton and Huffman, 1997).

	Statewide small-boats		
	full-time pelagic	part-time pelagic	*expense*
N =	33	84	55
Vessel length	26	34	23
Investment	54,700	46,200	41,200
Commercial trips	153	81	53
Annual Pounds	25,600	7,400	3,680
Annual Revenue	53,000	14,700	4,060
Annual Fixed Costs	8,150	5,600	3,500
Pounds/Trip	167	91	69
Revenue/Trip	$ 346	$ 181	$ 77
Cost/Trip	135	131	107
Net/Trip	211	50	(30)

[14] One peculiarity with Maui launching ramps and harbors compared to other islands is the distance from the launching ramp to deep-water (greater than 500 fathoms) is further than most areas in the main Hawaiian Islands. This reduces the amount of smaller-boat traffic from Kahului which might be off-set by an improved launching ramp/mooring area which allowed larger vessels to operate from Kahului.

Comparison

It is useful to compare the data derived from the economic surveys with the HDAR commercial catch reports and with the survey reported in the earlier net benefit estimates (Pooley, 1988). The HDAR data show an average reported catch per trip for Maui small boats of 102 pounds per trip (1996-98 average), compared to the Hamilton-Huffman average of 90 pounds per trip for part-time pelagic vessels. As indicated by Hamilton (personal communication), their survey focused on the cost components of small vessel operations since alternative sources of information (i.e., HDAR data) were available for operations, catch and revenue. Furthermore, there is a tendency in economic surveys to under-estimate revenue. In contrast, however, the 1987 Corps of Engineers survey of Maui fishermen estimated average catch per trip for all commercial small boats as 149 pounds per trip (272 pounds for full-time commercial and 86 pounds for part-time commercial). Thus all three surveys show quite comparable figures for the overall average or part-time commercial component of the Maui small boat fishery but the HDAR and Hamilton-Huffman surveys do not identify full-time commercial operations on Maui, and the Hamilton-Huffman statewide estimated averages for full-time commercial boats is substantially less than the 1988 report findings for Kahului.[15] However the time-series evidence using HDAR commercial catch reports data shows no statistically significant downward trend in overall catch rates on north Maui, with indeed larger catch per trip landings in the 1990s compared to the 1980s. Our conclusion at this point is that either full-time commercial small-boat operators on Maui are under-reporting (which appeared to be the case in 1987 based on the survey results) or that the existing fishing and market conditions do not promote full-time commercial operations (which would appear to be the case based on the Hamilton-Huffman survey).

Conclusion

This report updates vessel activity patterns and fishery resource situation on Maui using readily available published sources and HDAR commercial catch reports. We have not updated the net benefit estimates from our 1988 report because that was beyond the scope of the assignment. However the information provided in this report is consistent with the basic information provided over ten years ago. In the 1988 report we indicated that the project might increase fishing trips from Kahului from a baseline of 1,302 trips per year to 2,740 trips per year (Tables 1 and 5 of the 1988 report). However these would be much higher intensity trips since they would represent a development of full-time commercial fishing potential from Kahului. The 1988 report indicated total catch would increase from 186,600 pounds *without* the project to 631,200 pounds *with* the project. While this is a dramatic increase in total pounds, since most of the north Maui fishery is based on pelagic species for which Hawaii-directed effort is a small percentage of Pacific-wide

[15] For example, examining HDAR data for 1998, only 26 Maui boats recorded 52 or more trips in the year (assuming each landings record is a trip) and only 29 boats landed more than $10,000 in the year.

stocks[16], there is no biological resource constraint per se. The resource density equations provided in the 1988 report would appear to be consistent with current information (and subject to the same scaling issues). Project benefits and costs could be updated proportionally to current price levels.[17]

[16] In the 1988 report we wrote: "the Maui fishery would have an infinitesimal effect on the Pacific wide stocks of these species." (Pooley, 1988, p. 10.)

[17] The average price of fish by Maui vessels in 1998 was $3.05/ pound, compared to $1.70/ per pound in 1986 ($2.67 adjusted for inflation). The Honolulu CPI-W has increased from 110.3 to 172.7 in that period (for fishing cost adjustments).

Appendixes

Appendix Table A: North Maui landings by Species Group, 1998.

Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

Appendix Table B: Maui commercial landings, 1998-6 and 1986-84.

Hawaii Division of Aquatic Resources (HDAR) commercial catch reports summarized by NMFS Honolulu Laboratory.

Appendix Table A: North Maui landings by Species Group, 1998

North Maui HDAR landings, 1998

SPECIES	POUNDS	LBSOLD	REVENUE
Bottomfish			
buta	33	33	53
ehu	484	471	1,619
hapuupuu	388	378	805
onaga	1,252	1,240	6,329
opakapaka	4,619	4,493	20,937
other bmus	1,986	1,780	3,803
other bott	1,674	1,505	3,650
uku	1,164	1,117	3,999
Coastal			
akule	5,858	5,796	9,193
opelu	4,418	4,391	8,771
Other			
all other	14,710	13,351	21,936
mollusk	2,551	2,128	8,865
other crus	1,506	1,171	5,049
shrimp l	7,000	7,000	28,000
slipper	10	0	0
spiny	1,980	1,867	18,276
tako	5,299	3,660	11,714
Pelagics			
aku	12,693	5,272	11,107
albacore	12,294	12,282	13,809
bigeye	26,307	26,076	107,167
billfish	1,970	1,907	1,449
blue mar	4,048	3,698	4,065
broadbill	94	94	235
mahimahi	30,962	25,859	83,159
ono	14,382	11,041	32,668
other pelagics	6,063	6,028	7,416
other tuna	496	83	153
sailfish	71	71	107
shark	11,515	2,479	5,881
striped	3,627	3,357	3,299
yellowfin	12,090	9,632	32,106
All species	191,544	158,260	455,620

Appendix Table B: Maui commercial landings, 1998-6 and 1986-84[18]

Maui commercial landings

	Pounds	Licenses	Trips	per Trip Pounds	per License Pounds	per License Trips
Maui ports						
1998	706,934	330	6,454	110	2,142	20
1997	615,756	321	6,367	97	1,918	20
1996	619,111	313	6,269	99	1,978	20
average	647,267	321	6,363	102	2,014	20
1986	1,116,685	318	5,535	202	3,512	17
1985	652,448	330	5,033	130	1,977	15
1984	941,995	300	4,600	205	3,140	15
average	903,709	316	5,056	179	2,860	16
Kahului						
1998	69,067	91	582	119	759	6
1997	108,855	96	808	135	1,134	8
1996	82,835	96	657	126	863	7
average	86,919	94	682	127	921	7
1986	103,898	98	612	170	1,060	6
1985	66,578	89	566	118	748	6
1984	44,901	95	634	71	473	7
average	71,792	94	604	119	764	6
North Maui areas						
1998	191,544	169	1,562	123	1,133	9
1997	264,487	190	1,943	136	1,392	10
1996	248,456	174	1,661	150	1,428	10
average	234,829	178	1,722	136	1,322	10
1986	234,875	194	1,625	145	1,211	8
1985	189,940	192	1,614	118	989	8
1984	101,281	171	1,323	77	592	8
average	175,365	186	1,521	115	945	8

[18] Data source: maui98a.xls (5/8/2000)

DECISION DOCUMENT
KAHULUI LIGHT DRAFT
NAVIGATION IMPROVEMENTS PROJECT

APPENDIX F - MCACES COST ESTIMATE

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENT
MAUI, HAWAII

Est: Ronald Pang
Chk'd by:

Bid Item	23-Jul-~~00~~ 01	QTY	UNIT	AMOUNT	CONT. PERCENT	CONT.	TOTAL
	FEDERAL FEATURES						
BI-1	Mob and Demob	1	LS	$111,800	10%	$11,200	$123,000
BI-2	Dredge	1	LS	$794,600	10%	$79,500	$874,100
BI-3	Breakwater	1	LS	$398,600	10%	$39,900	$438,500
	TOTAL FEDERAL FEATURES			**$1,305,000**		**$130,600**	**$1,435,600**
	NON-FEDERAL FEATURES						
BI-4	Ramp and Docks			$694,400	10%	$69,400	$763,800
BI-5	Access Road			$137,700	10%	$13,800	$151,500
	TOTAL NON FEDERAL COSTS			**$832,100**		**$83,200**	**$915,300**
	GOVERNMENT OPTIONS						
BI-6	Landscape	1	LS	$107,000	10%	$10,700	$117,700
BI-7	Trailer Turnaround	1	LS	$35,300	10%	$3,500	$38,800
BI-8	Electrical	1	LS	$34,500	10%	$3,500	$38,000
	TOTAL GOVERNMENT OPTIONS			**$176,800**		**$17,700**	**$194,500**
	TOTAL PROJECT COST			**$2,313,900**		**$231,500**	**$2,545,400**

JULY
~~JUNE~~ 2002 PRICE LEVEL

Work will be by Oahu contractor with Marine construction capability.

Construction period 10 months for base schedule, including 3 months for submittals and mobilization. 12 months for base plus all options including 3 months turf establishment period.

Assume award in late calendar year 2001.

Estimate assumes all rock will be mechanically broken. And dredged material will be hauled off site to a designated area within 3 miles of the project.

Actual construction time is estimated to be 6 months.

Estimate assumes boat ramp can be shut down during construction of new ramp and docks. Approximately 2 to 3 months.

Changes incorporated in this estimate:
1. Basin Dredging increased from 900 cy to 1055 cy.
2. Landscaping area reduced from 75,000 sf to 42,000 sf.
3. Minor modification to docks reducing size of landings and increasing size of fendering system.
4. Price level increased from March 2001 to July 2002.

KAHULUI LIGHT DRAFT NAVIGATION IMPROVEMENT
MAUI, HAWAII

Est: Ronald Pang
Chk'd by:____

23-Jul-01

Bid Item		QTY	UNIT	UNIT PRICE	AMOUNT	CONT. PERCENT	CONT.	TOTAL
	FEDERAL FEATURES							
BI-1	Mob and Demob	1	LS		$111,800	10%	$11,200	$123,000
BI-2	Dredge							
	a Turning Basin	1,055	CY	$124.80	$131,700	10%	$13,200	$144,900
	b Entrance Channel	7,650	CY	$85.80	$656,400	10%	$65,600	$722,000
	c Post dredge survey	1	LS		$6,500	10%	$700	$7,200
BI-3	Breakwater	1	LS		$398,600	10%	$39,900	$438,500
	TOTAL FEDERAL FEATURES				**$1,305,000**		**$130,600**	**$1,435,600**
	NON-FEDERAL FEATURES							
BI-4	Ramp and Docks							
	a Sitework	1	LS		$45,800	10%	$4,600	$50,400
	b Dock A	1	LS		$275,200	10%	$27,500	$302,700
	c Dock B	1	LS		$53,600	10%	$5,400	$59,000
	d Boat Ramp	1	LS		$238,600	10%	$23,900	$262,500
	e Revetment	1	LS		$81,200	10%	$8,100	$89,300
					$694,400		$69,500	$763,900
BI-5	Access Road							
	a Prime	1	LS		$16,000	10%	$1,600	$17,600
	b Paving	1	LS		$105,700	10%	$10,600	$116,300
	c Striping	1	LS		$6,000	10%	$600	$6,600
	d Electrical	1	LS		$10,000	10%	$1,000	$11,000
					$137,700		$13,800	$151,500
	TOTAL NON FEDERAL COSTS				**$832,100**		**$83,300**	**$915,400**
	GOVERNMENT OPTIONS							
BI-6	Landscape	1	LS		$107,000	10%	$10,700	$117,700
BI-7	Trailer Turnaround	1	LS		$35,300	10%	$3,500	$38,800
BI-8	Electrical	1	LS		$34,500	10%	$3,500	$38,000
	TOTAL GOVERNMENT OPTIONS				**$176,800**		**$17,700**	**$194,500**
	TOTAL PROJECT COST				**$2,313,900**		**$231,600**	**$2,545,500**

JULY 2002 PRICE LEVEL

Kahului Small Boat Harbor
~~MAALAEA, MAUI~~
ASSUME AWARD Mar 02
PRICE LEVEL Jul 02

Designed By: Honolulu District
Estimated By: Ronald Pang

Prepared By: CEPOD-EC-S

Preparation Date: 07/06/01
Effective Date of Pricing: 00/00/00

Sales Tax: 0.00%

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

** PROJECT INDIRECT SUMMARY - Bid Item **

		QUANTITY	UOM	DIRECT	DISTR	HOME OH	PROFIT	TAX	BOND	TOTAL COST	UNIT COST
1	Mob and demob	1.00	EA	88,341	6,716	2,852	7,833	4,409	1,652	111,803	111803.33
2	Dredge	1.00	JOB	627,819	47,729	20,266	55,665	31,337	11,742	794,559	794558.54
4	Breakwater	1.00	EA	314,954	23,944	10,167	27,925	15,721	5,891	398,602	398601.85
10	Structures	1.00	EA	548,890	41,729	17,719	48,667	27,397	10,266	694,668	694667.76
12	Access Road work	1.00	EA	109,540	7,311	3,773	9,650	5,432	2,036	137,742	137741.79
30	Option 1 Landscaping	1.00	JOB	89,244	0	4,462	7,497	4,220	1,581	107,004	107004.50
35	Option 2 Turnaround	1.00	JOB	29,436	0	1,472	2,473	1,392	522	35,294	35294.41
40	Option 3 Electrical	1.00	JOB	27,246	2,071	880	2,416	1,360	510	34,482	34481.88
	Kahului Small Boat Harbor	1.00	EA	1,835,471	129,500	61,590	162,125	91,268	34,199	2,314,154	2314154

** PROJECT INDIRECT SUMMARY - FACILITY **

	QUANTITY	UOM	DIRECT	DISTR	HOME OH	PROFIT	TAX	BOND	TOTAL COST	UNIT COST
1 Mob and demob										
1. A MOBILIZATION	1.00	EA	52,860	4,019	1,706	4,687	2,638	989	66,899	66898.97
1. D DEMOBILIZATION	1.00	EA	35,481	2,697	1,145	3,146	1,771	664	44,904	44904.36
TOTAL Mob and demob	1.00	EA	88,341	6,716	2,852	7,833	4,409	1,652	111,803	111803.33
2 Dredge										
2. 1 Dredge Basin	1055.00	CY	104,054	7,911	3,359	9,226	5,194	1,946	131,689	124.82
2. 5 DREDGE CHANNEL	7650.00	CY	518,615	39,427	16,741	45,983	25,886	9,700	656,352	85.80
2. 8 Post dredge survey	1.00	JOB	5,150	392	166	457	257	96	6,518	6517.77
TOTAL Dredge	1.00	JOB	627,819	47,729	20,266	55,665	31,337	11,742	794,559	794558.54
4 Breakwater										
4. A Armor 3 to 5 ton	2751.00	TON	154,696	11,761	4,994	13,716	7,721	2,893	195,781	71.17
4. B Underlayer 400 to 1000 lb	570.00	TON	33,211	2,525	1,072	2,945	1,658	621	42,031	73.74
4. C Core 2 to 30 lb	298.00	TON	13,487	1,025	435	1,196	673	252	17,069	57.28
4. D Excavate	550.00	CY	10,560	803	341	936	527	198	13,365	24.30
4. F Water Quality Monitoring	1.00	JOB	103,000	7,830	3,325	9,132	5,141	1,926	130,355	130355.31
TOTAL Breakwater	1.00	EA	314,954	23,944	10,167	27,925	15,721	5,891	398,602	398601.85
.0 Structures										
10. A SITEWORK (Non Fed)	1.00	EA	36,423	2,769	1,176	3,229	1,818	681	46,097	46096.61
10. B DOCK A (Non Fed)	1.00	EA	217,439	16,531	7,019	19,279	10,853	4,067	275,188	275188.05
10. C DOCK B (Non Fed)	1.00	EA	42,316	3,217	1,366	3,752	2,112	791	53,555	53554.87
10. D BOAT RAMP (Non Fed)	1.00	EA	188,530	14,333	6,086	16,716	9,410	3,526	238,601	238601.35
10. E REVETMENT (Non Fed)	1.00	EA	64,181	4,879	2,072	5,691	3,204	1,200	81,227	81226.89
TOTAL Structures	1.00	EA	548,890	41,729	17,719	48,667	27,397	10,266	694,668	694667.76
12 Access Road work										
12. 1 Prime	1.00	JOB	13,374	0	669	1,123	632	237	16,036	16035.61
12. 5 Paving	1.00	EA	83,504	6,348	2,696	7,404	4,168	1,562	105,682	105681.91
12. 7 Striping	1.00	EA	4,741	360	153	420	237	89	6,000	6000.13
12. 9 Electrical	1.00	EA	7,921	602	256	702	395	148	10,024	10024.13
TOTAL Access Road work	1.00	EA	109,540	7,311	3,773	9,650	5,432	2,036	137,742	137741.79
30 Option 1 Landscaping										

** PROJECT INDIRECT SUMMARY - FACILITY **

	QUANTITY	UOM	DIRECT	DISTR	HOME OH	PROFIT	TAX	BOND	TOTAL COST	UNIT COST
30. A Topsoil	1.00	JOB	18,139	0	907	1,524	858	321	21,748	21748.35
30. B Landscaping	1.00	JOB	71,106	0	3,555	5,973	3,362	1,260	85,256	85256.15
TOTAL Option 1 Landscaping	1.00	JOB	89,244	0	4,462	7,497	4,220	1,581	107,004	107004.50
35 Option 2 Turnaround										
35. A Prime work	1.00	JOB	4,741	0	237	398	224	84	5,684	5684.31
35. B Paving	1.00	JOB	24,696	0	1,235	2,074	1,168	438	29,610	29610.10
TOTAL Option 2 Turnaround	1.00	JOB	29,436	0	1,472	2,473	1,392	522	35,294	35294.41
40 Option 3 Electrical										
40. A ELECTRICAL (Non Fed)	1.00	EA	27,246	2,071	880	2,416	1,360	510	34,482	34481.88
TOTAL Option 3 Electrical	1.00	JOB	27,246	2,071	880	2,416	1,360	510	34,482	34481.88
TOTAL Kahului Small Boat Harbor	1.00	EA	1,835,471	129,500	61,590	162,125	91,268	34,199	2,314,154	2314154

** PROJECT DIRECT SUMMARY - Bid Item **

		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
1	Mob and demob	1.00	EA	0	7,416	16,550	64,375	88,341	88341.18
2	Dredge	1.00	JOB	5,225	334,553	288,116	5,150	627,819	627818.90
4	Breakwater	1.00	EA	1,459	78,141	40,624	196,189	314,954	314954.48
10	Structures	1.00	EA	3,435	199,986	69,026	279,878	548,890	548890.39
12	Access Road work	1.00	EA	0	38,152	12,678	58,710	109,540	109539.97
30	Option 1 Landscaping	1.00	JOB	168	7,983	15,099	66,162	89,244	89244.26
35	Option 2 Turnaround	1.00	JOB	0	10,103	4,393	14,940	29,436	29436.36
40	Option 3 Electrical	1.00	JOB	192	13,505	4,056	9,684	27,246	27245.79
TOTAL Kahului Small Boat Harbor		1.00	EA	10,480	689,839	450,544	695,089	1,835,471	1835471
	OVERHEAD							129,500	
	SUBTOTAL							1,964,971	
	HOME OFC							61,590	
	SUBTOTAL							2,026,562	
	PROFIT							162,125	
	SUBTOTAL							2,188,686	
	TAX							91,268	
	SUBTOTAL							2,279,955	
	BOND							34,199	
	TOTAL INCL INDIRECTS							2,314,154	

** PROJECT DIRECT SUMMARY - FACILITY **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
1 Mob and demob								
1. A MOBILIZATION	1.00	EA	0	4,120	7,540	41,200	52,860	52860.09
1. D DEMOBILIZATION	1.00	EA	0	3,296	9,010	23,175	35,481	35481.09
TOTAL Mob and demob	1.00	EA	0	7,416	16,550	64,375	88,341	88341.18
2 Dredge								
2. 1 Dredge Basin	1055.00	CY	800	51,355	52,699	0	104,054	98.63
2. 5 DREDGE CHANNEL	7650.00	CY	4,425	283,198	235,417	0	518,615	67.79
2. 8 Post dredge survey	1.00	JOB	0	0	0	5,150	5,150	5150.00
TOTAL Dredge	1.00	JOB	5,225	334,553	288,116	5,150	627,819	627818.90
4 Breakwater								
4. A Armor 3 to 5 ton	2751.00	TON	1,032	55,191	28,667	70,838	154,696	56.23
4. B Underlayer 400 to 1000 lb	570.00	TON	228	12,198	6,336	14,678	33,211	58.26
4. C Core 2 to 30 lb	298.00	TON	72	3,826	1,987	7,674	13,487	45.26
4. D Excavate	550.00	CY	128	6,926	3,634	0	10,560	19.20
4. F Water Quality Monitoring	1.00	JOB	0	0	0	103,000	103,000	103000.00
TOTAL Breakwater	1.00	EA	1,459	78,141	40,624	196,189	314,954	314954.48
10 Structures								
10. A SITEWORK (Non Fed)	1.00	EA	356	19,994	11,685	4,744	36,423	36423.14
10. B DOCK A (Non Fed)	1.00	EA	1,480	87,726	27,129	102,584	217,439	217439.30
10. C DOCK B (Non Fed)	1.00	EA	270	16,891	2,620	22,805	42,316	42316.27
10. D BOAT RAMP (Non Fed)	1.00	EA	866	50,999	16,626	120,906	188,530	188530.40
10. E REVETMENT (Non Fed)	1.00	EA	463	24,375	10,966	28,840	64,181	64181.27
TOTAL Structures	1.00	EA	3,435	199,986	69,026	279,878	548,890	548890.39
12 Access Road work								
12. 1 Prime	1.00	JOB	0	5,343	2,570	5,461	13,374	13374.07
12. 5 Paving	1.00	EA	0	23,600	9,305	50,600	83,504	83504.36
12. 7 Striping	1.00	EA	0	3,546	0	1,195	4,741	4740.99
12. 9 Electrical	1.00	EA	0	5,664	803	1,454	7,921	7920.55
TOTAL Access Road work	1.00	EA	0	38,152	12,678	58,710	109,540	109539.97
30 Option 1 Landscaping								

** PROJECT DIRECT SUMMARY - FACILITY **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
30. A Topsoil	1.00	JOB	168	5,408	3,089	9,641	18,139	18138.63
30. B Landscaping	1.00	JOB	0	2,575	12,009	56,521	71,106	71105.63
TOTAL Option 1 Landscaping	1.00	JOB	168	7,983	15,099	66,162	89,244	89244.26
35 Option 2 Turnaround								
35. A Prime work	1.00	JOB	0	2,220	1,285	1,236	4,741	4740.85
35. B Paving	1.00	JOB	0	7,883	3,108	13,704	24,696	24695.51
TOTAL Option 2 Turnaround	1.00	JOB	0	10,103	4,393	14,940	29,436	29436.36
40 Option 3 Electrical								
40. A ELECTRICAL (Non Fed)	1.00	EA	192	13,505	4,056	9,684	27,246	27245.79
TOTAL Option 3 Electrical	1.00	JOB	192	13,505	4,056	9,684	27,246	27245.79
TOTAL Kahului Small Boat Harbor	1.00	EA	10,480	689,839	450,544	695,089	1,835,471	1835471
OVERHEAD							129,500	
SUBTOTAL							1,964,971	
HOME OFC							61,590	
SUBTOTAL							2,026,562	
PROFIT							162,125	
SUBTOTAL							2,188,686	
TAX							91,268	
SUBTOTAL							2,279,955	
BOND							34,199	
TOTAL INCL INDIRECTS							2,314,154	

No errors detected...

* * * END OF ERROR REPORT * * *

PRIME CONTRACTOR	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
PRIME CONTRACTOR										
Overhead Items - AA										
SUPERINTENDANT	7.00	MO		0.00	0	57,680	0	0	57,680	8240.00
Project Engineer/CQC	6.00	MO		0.00	45,000	0	0	0	0	0.00
Sup during grass maint. period	6.00	DYS		0.00	0	3,090	0	618	3,708	618.00
Best management plan	1.00	JOB		0.00	0	0	5,250	0	5,250	5250.00
AIR FARE	12.00	RT		0.00	0	0	0	1,360	1,360	113.30
Field Office	6.00	MO		0.00	0	0	0	3,708	3,708	618.00
Block, level & tie-down	1.00	JOB		0.00	0	0	0	2,060	2,060	2060.00
Deliver & pickup	1.00	JOB		0.00	0	0	0	412	412	412.00
Office equipment	1.00	JOB		0.00	0	0	1,575	0	1,575	1575.00
Sanitoi	6.00	MO		0.00	0	0	0	618	618	103.00
Container	6.00	MO		0.00	0	0	0	18,540	18,540	3090.00
Utilities	6.00	MO		0.00	0	0	0	1,854	1,854	309.00
Utility tie-in	1.00	JOB		0.00	0	1,030	105	515	1,650	1650.00
Rent house (2 houses)	6.00	MO		0.00	0	0	0	24,720	24,720	4120.00
PICK-UP	6.00	MO		0.00	0	0	0	6,180	6,180	1030.00
OFFICE SUPPLIES	6.00	MO		0.00	0	0	0	93	93	15.45
ENGINEERING SUPPLIES	6.00	MO		0.00	0	0	0	62	62	10.30
FIRST AID SUPPLIES	6.00	MO		0.00	0	0	0	31	31	5.15
Water quality monitoring	1.00	JOB		0.00	0	0	0	0	0	0.00
Overhead Items - AA					45,000	61,800	6,930	60,770	129,500	

BILIZATION	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Mob and demob										
MOBILIZATION										
TEMPORARY FENCING	300.00	LF		0.00	0	0	0	1,545	1,545	5.15
Silt curtains	300.00	LF		0.00	0	0	0	12,360	12,360	41.20
Ship silt curtains	1.00	LS		0.00	0	0	0	2,575	2,575	2575.00
Stevadore costs	1.00	LS		0.00	0	0	0	4,120	4,120	4120.00
Barge Oahu to Maui	1.00	LS		0.00	0	0	0	15,450	15,450	15450.00
Crane	40.00	HR		0.00	0	0	1,050	0	1,050	26.25
Flexifloat	40.00	HR		0.00	0	0	840	0	840	21.00
Loader	40.00	HR		0.00	0	0	798	0	798	19.95
Labor	80.00	HR		0.00	0	4,120	0	0	4,120	51.50
Backhoe	40.00	HR		0.00	0	0	1,050	0	1,050	26.25
CRANE 50 TON TRACK AVE COND	24.00	HR	XCRT050A	1.00	0	0	1,870	0	1,870	77.92
LOWBOY 70 TON SUB	16.00	HR	XTKLB70	1.00	0	0	1,932	0	1,932	120.75
Insurance	1.00	LS		0.00	0	0	0	5,150	5,150	5150.00
Miscellaneous										
DEMOBILIZATION										
Ship silt curtains	1.00	LS		0.00	0	0	0	2,575	2,575	2575.00
Stevadore costs	1.00	LS		0.00	0	0	2,100	0	2,100	2100.00
Barge Oahu to Maui	1.00	LS		0.00	0	0	0	15,450	15,450	15450.00
Crane	40.00	HR		0.00	0	0	1,050	0	1,050	26.25
Drill	40.00	HR		0.00	0	0	252	0	252	6.30
Compressor	40.00	HR		0.00	0	0	168	0	168	4.20
Flexifloat	40.00	HR		0.00	0	0	840	0	840	21.00
Loader	40.00	HR		0.00	0	0	798	0	798	19.95
Labor	64.00	HR		0.00	0	3,296	0	0	3,296	51.50
CRANE 50 TON TRACK AVE COND	24.00	HR	XCRT050A	1.00	0	0	1,870	0	1,870	77.92
LOWBOY 70 TON SUB	16.00	HR	XTKLB70	1.00	0	0	1,932	0	1,932	120.75
Insurance	1.00	LS		0.00	0	0	0	5,150	5,150	5150.00
Mob and demob	1.00	EA			0	7,416	16,550	64,375	88,341	88341.18

Dredge Basin	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Dredge										
Dredge Basin										
Dredge (XDRDB1)										
BOAT OPERATOR	46.00	HR	XMBOAT	1.00	46	3,009	0	0	3,009	65.42
MARINE CLAM OPERATOR	46.00	HR	XMCLAM	1.00	46	3,050	0	0	3,050	66.30
CAPTAIN	46.00	HR	XMCPT	1.00	46	3,091	0	0	3,091	67.19
MATE	46.00	HR	XMMATE	1.00	46	2,965	0	0	2,965	64.45
MARINE OILER(GR3)	46.00	HR	XMOIL	1.00	46	2,832	0	0	2,832	61.56
WORK BOAT	46.00	HR	XMAWB	1.00	0	0	1,546	0	1,546	33.60
Flexifloat 4 section	46.00	HR	XMABFLX	1.00	0	0	1,449	0	1,449	31.50
Flexifloat 4 section scow	46.00	HR	XMABFLX	1.00	0	0	1,449	0	1,449	31.50
MOORING SYSTEM AVERAGE BARGE	46.00	HR	XMABMSA	1.00	0	0	1,787	0	1,787	38.85
BACKHOE 2 CY SEV H25KM005	46.00	HR	XEXBH1.5S	1.00	0	0	4,136	0	4,136	89.91
PICKUP	46.00	HR	XTKPU	1.00	0	0	386	0	386	8.40
Haul to disposal (XDRDI)										
OPERATOR GROUP 6	42.81	HR	XE06	1.00	43	2,431	0	0	2,431	56.78
OPERATOR GROUP 10A	8.56	HR	XE10A	1.00	9	499	0	0	499	58.24
LABORER 1	8.56	HR	XLAB1	1.00	9	382	0	0	382	44.63
LOADER 3.0 CY WHEEL SEV CAT 950	8.56	HR	XTRLW3.0S	1.00	0	0	537	0	537	62.72
SEMI 20 CY AVE	34.25	HR	XTKSEMA	1.00	0	0	1,259	0	1,259	36.75
Break Rock Assume 80% (XDRDB1)										
BOAT OPERATOR	85.00	HR	XMBOAT	1.00	85	5,561	0	0	5,561	65.42
MARINE CLAM OPERATOR	85.00	HR	XMCLAM	1.00	85	5,635	0	0	5,635	66.30
CAPTAIN	85.00	HR	XMCPT	1.00	85	5,711	0	0	5,711	67.19
MATE	170.00	HR	XMMATE	1.00	170	10,957	0	0	10,957	64.45
MARINE OILER(GR3)	85.00	HR	XMOIL	1.00	85	5,233	0	0	5,233	61.56
Flexifloat 4 section	340.00	HR	XMABFLX	1.00	0	0	10,710	0	10,710	31.50
Flexifloat 4 section scow	340.00	HR	XMABFLX	1.00	0	0	10,710	0	10,710	31.50
MOORING SYSTEM AVERAGE BARGE	144.00	HR	XMABMSA	1.00	0	0	5,594	0	5,594	38.85
BACKHOE 2 CY SEV H25KM005	85.00	HR	XEXBH1.5S	1.00	0	0	7,642	0	7,642	89.91
HOE RAM 4000#	85.00	HR	XAIBU4K	1.00	0	0	1,923	0	1,923	22.63
WORK BOAT	85.00	HR	XMAWB	1.00	0	0	2,856	0	2,856	33.60
PICKUP	85.00	HR	XTKPU	1.00	0	0	714	0	714	8.40
DREDGE CHANNEL										
Dredge (XDRDB1)										
BOAT OPERATOR	510.00	HR	XMBOAT	1.00	510	33,363	0	0	33,363	65.42
MARINE CLAM OPERATOR	510.00	HR	XMCLAM	1.00	510	33,813	0	0	33,813	66.30
CAPTAIN	510.00	HR	XMCPT	1.00	510	34,266	0	0	34,266	67.19
MATE	510.00	HR	XMMATE	1.00	510	32,871	0	0	32,871	64.45
MARINE OILER(GR3)	510.00	HR	XMOIL	1.00	510	31,396	0	0	31,396	61.56
WORK BOAT	510.00	HR	XMAWB	1.00	0	0	17,136	0	17,136	33.60
Flexifloat 4 section	510.00	HR	XMABFLX	1.00	0	0	16,065	0	16,065	31.50
Flexifloat 4 section scow	510.00	HR	XMABFLX	1.00	0	0	16,065	0	16,065	31.50
MOORING SYSTEM AVERAGE BARGE	510.00	HR	XMABMSA	1.00	0	0	19,814	0	19,814	38.85
BACKHOE 2 CY SEV H25KM005	510.00	HR	XEXBH1.5S	1.00	0	0	45,855	0	45,855	89.91
PICKUP	510.00	HR	XTKPU	1.00	0	0	4,284	0	4,284	8.40
Haul to disposal (XDRDI)										
OPERATOR GROUP 6	310.78	HR	XE06	1.00	311	17,646	0	0	17,646	56.78
OPERATOR GROUP 10A	62.16	HR	XE10A	1.00	62	3,620	0	0	3,620	58.24
LABORER 1	62.16	HR	XLAB1	1.00	62	2,774	0	0	2,774	44.63
LOADER 3.0 CY WHEEL SEV CAT 950	62.16	HR	XTRLW3.0S	1.00	0	0	3,898	0	3,898	62.72

EDGE CHANNEL	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
SEMI 20 CY AVE	248.63	HR	XTKSEMA	1.00	0	0	9,137	0	9,137	36.75
Break Rock (XDRDB1)										
BOAT OPERATOR	240.00	HR	XMBOAT	1.00	240	15,700	0	0	15,700	65.42
MARINE CLAM OPERATOR	240.00	HR	XMCLAM	1.00	240	15,912	0	0	15,912	66.30
CAPTAIN	240.00	HR	XMCPT	1.00	240	16,125	0	0	16,125	67.19
MATE	480.00	HR	XMMATE	1.00	480	30,937	0	0	30,937	64.45
MARINE OILER(GR3)	240.00	HR	XMOIL	1.00	240	14,774	0	0	14,774	61.56
Flexifloat 4 section	960.00	HR	XMABFLX	1.00	0	0	30,240	0	30,240	31.50
Flexifloat 4 section scow	960.00	HR	XMABFLX	1.00	0	0	30,240	0	30,240	31.50
MOORING SYSTEM AVERAGE BARGE	144.00	HR	XMABMSA	1.00	0	0	5,594	0	5,594	38.85
BACKHOE 2 CY SEV H25KM005	240.00	HR	XEXBH1.5S	1.00	0	0	21,579	0	21,579	89.91
HOE RAM 4000#	240.00	HR	XAIBU4K	1.00	0	0	5,431	0	5,431	22.63
WORK BOAT	240.00	HR	XMAWB	1.00	0	0	8,064	0	8,064	33.60
PICKUP	240.00	HR	XTKPU	1.00	0	0	2,016	0	2,016	8.40
Post dredge survey										
Dredge survey (sub contract)	1.00	JOB		0.00	0	0	0	5,150	5,150	5150.00
Dredge	1.00	JOB			5,225	334,553	288,116	5,150	627,819	627818.90

Armor 3 to 5 ton	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Breakwater										
Armor 3 to 5 ton (XRKSB)										
OPERATOR GROUP 7	171.94	HR	XE07	1.00	172	9,845	0	0	9,845	57.26
LABORER 1	343.88	HR	XLAB1	1.00	344	15,347	0	0	15,347	44.63
CRANE 50 TON TRACK SEV COND	171.94	HR	XCRT050S	1.00	0	0	16,439	0	16,439	95.61
LOADER 3.0 CY WHEEL SEV	171.94	HR	XTRLW3.0S	1.00	0	0	10,783	0	10,783	62.72
ROCKSETTER	171.94	HR	XRKS	1.00	172	10,277	0	0	10,277	59.77
OPERATOR GROUP 3	171.94	HR	XE03	1.00	172	9,446	0	0	9,446	54.94
Armor 3 to 5 ton	2751.00	TON		0.00	0	0	0	70,838	70,838	25.75
PICKUP	171.94	HR	XTKPU	1.00	0	0	1,444	0	1,444	8.40
OPERATOR FOREMAN	171.94	HR	XOPERFM	1.00	172	10,277	0	0	10,277	59.77
Underlayer 400 to 1000 lb (XRKSB)										
OPERATOR GROUP 7	38.00	HR	XE07	1.00	38	2,176	0	0	2,176	57.26
LABORER 1	76.00	HR	XLAB1	1.00	76	3,392	0	0	3,392	44.63
CRANE 50 TON TRACK SEV COND	38.00	HR	XCRT050S	1.00	0	0	3,633	0	3,633	95.61
LOADER 3.0 CY WHEEL SEV	38.00	HR	XTRLW3.0S	1.00	0	0	2,383	0	2,383	62.72
ROCKSETTER	38.00	HR	XRKS	1.00	38	2,271	0	0	2,271	59.77
OPERATOR GROUP 3	38.00	HR	XE03	1.00	38	2,088	0	0	2,088	54.94
Underlayer 400 to 1000 lb	570.00	TON		0.00	0	0	0	14,678	14,678	25.75
PICKUP	38.00	HR	XTKPU	1.00	0	0	319	0	319	8.40
OPERATOR FOREMAN	38.00	HR	XOPERFM	1.00	38	2,271	0	0	2,271	59.77
Core 2 to 30 lb (XRKSB)										
OPERATOR GROUP 7	11.92	HR	XE07	1.00	12	683	0	0	683	57.26
LABORER 1	23.84	HR	XLAB1	1.00	24	1,064	0	0	1,064	44.63
CRANE 50 TON TRACK SEV COND	11.92	HR	XCRT050S	1.00	0	0	1,140	0	1,140	95.61
LOADER 3.0 CY WHEEL SEV	11.92	HR	XTRLW3.0S	1.00	0	0	748	0	748	62.72
ROCKSETTER	11.92	HR	XRKS	1.00	12	712	0	0	712	59.77
OPERATOR GROUP 3	11.92	HR	XE03	1.00	12	655	0	0	655	54.94
Core 2 to 30 lb	298.00	TON		0.00	0	0	0	7,674	7,674	25.75
PICKUP	11.92	HR	XTKPU	1.00	0	0	100	0	100	8.40
OPERATOR FOREMAN	11.92	HR	XOPERFM	1.00	12	712	0	0	712	59.77
Excavate (XRKSB)										
OPERATOR GROUP 7	18.33	HR	XE07	1.00	18	1,050	0	0	1,050	57.26
LABORER 1	36.67	HR	XLAB1	1.00	37	1,636	0	0	1,636	44.63
CRANE 50 TON TRACK SEV COND	18.33	HR	XCRT050S	1.00	0	0	1,753	0	1,753	95.61
LOADER 3.0 CY WHEEL SEV	18.33	HR	XTRLW3.0S	1.00	0	0	1,150	0	1,150	62.72
ROCKSETTER	18.33	HR	XRKS	1.00	18	1,096	0	0	1,096	59.77
OPERATOR GROUP 3	18.33	HR	XE03	1.00	18	1,007	0	0	1,007	54.94
TANDEM 12 CY AVE	18.33	HR	XTKTNDA	1.00	0	0	577	0	577	31.50
OPERATOR GROUP 6	18.33	HR	XE06	1.00	18	1,041	0	0	1,041	56.78
PICKUP	18.33	HR	XTKPU	1.00	0	0	154	0	154	8.40
OPERATOR FOREMAN	18.33	HR	XOPERFM	1.00	18	1,096	0	0	1,096	59.77
Water Quality Monitoring										
Water Quality Monitoring	1.00	JOB		0.00	0	0	0	103,000	103,000	103000.00
Breakwater	1.00	EA			1,459	78,141	40,624	196,189	314,954	314954.48

TEWORK (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Structures										
SITEWORK (Non Fed)										
Remove Revetment (XRKSG)										
LABORER 1	18.00	HR	XLAB1	1.00	18	803	0	0	803	44.63
ROCKSETTER	18.00	HR	XRKS	1.00	18	1,076	0	0	1,076	59.77
CRANE 50 TON TRACK SEV COND	18.00	HR	XCRT050S	1.00	0	0	1,721	0	1,721	95.61
LOADER 5.0 CY WHEEL SEV	9.00	HR	XTRLW5.0S	1.00	0	0	899	0	899	99.91
OPERATOR GROUP 7	9.00	HR	XE07	1.00	9	515	0	0	515	57.26
OPERATOR GROUP 3	18.00	HR	XE03	1.00	18	989	0	0	989	54.94
OPERATOR FOREMAN	18.00	HR	XOPERFM	1.00	18	1,076	0	0	1,076	59.77
PICKUP	18.00	HR	XTKPU	1.00	0	0	151	0	151	8.40
OPERATOR GROUP 6	9.00	HR	XE06	1.00	9	511	0	0	511	56.78
TANDEM 12 CY AVE	9.00	HR	XTKTNDA	1.00	0	0	284	0	284	31.50
Miscellaneous removal (XRKSG)										
LABORER 1	16.67	HR	XLAB1	1.00	17	744	0	0	744	44.63
ROCKSETTER	16.67	HR	XRKS	1.00	17	996	0	0	996	59.77
CRANE 50 TON TRACK SEV COND	16.67	HR	XCRT050S	1.00	0	0	1,594	0	1,594	95.61
LOADER 5.0 CY WHEEL SEV	8.33	HR	XTRLW5.0S	1.00	0	0	833	0	833	99.91
OPERATOR GROUP 7	8.33	HR	XE07	1.00	8	477	0	0	477	57.26
OPERATOR GROUP 3	16.67	HR	XE03	1.00	17	916	0	0	916	54.94
OPERATOR FOREMAN	16.67	HR	XOPERFM	1.00	17	996	0	0	996	59.77
PICKUP	16.67	HR	XTKPU	1.00	0	0	140	0	140	8.40
OPERATOR GROUP 6	8.33	HR	XE06	1.00	8	473	0	0	473	56.78
TANDEM 12 CY AVE	8.33	HR	XTKTNDA	1.00	0	0	262	0	262	31.50
Excavate for boat ramp (XRKSG)										
LABORER 1	29.71	HR	XLAB1	1.00	30	1,326	0	0	1,326	44.63
ROCKSETTER	29.71	HR	XRKS	1.00	30	1,776	0	0	1,776	59.77
CRANE 50 TON TRACK SEV COND	29.71	HR	XCRT050S	1.00	0	0	2,840	0	2,840	95.61
LOADER 5.0 CY WHEEL SEV	14.85	HR	XTRLW5.0S	1.00	0	0	1,484	0	1,484	99.91
OPERATOR GROUP 7	14.85	HR	XE07	1.00	15	850	0	0	850	57.26
OPERATOR GROUP 3	29.71	HR	XE03	1.00	30	1,632	0	0	1,632	54.94
OPERATOR FOREMAN	29.71	HR	XOPERFM	1.00	30	1,776	0	0	1,776	59.77
PICKUP	29.71	HR	XTKPU	1.00	0	0	250	0	250	8.40
OPERATOR GROUP 6	14.85	HR	XE06	1.00	15	843	0	0	843	56.78
TANDEM 12 CY AVE	14.85	HR	XTKTNDA	1.00	0	0	468	0	468	31.50
Paving										
TRENCH HOPTO	33.00	CY	XPIPA	10.00	17	1,031	109	0	1,140	34.54
Sawcut	100.00	LF		0.00	0	0	0	128	128	1.28
BASE COURSE	46.00	TON	XEQLA	37.50	5	334	268	1,005	1,606	34.92
PAVING	18.00	TON	XEQLB	20.00	13	854	384	925	2,163	120.16
PRIME COAT .25 GAL/SY	37.00	GAL		0.00	0	0	0	71	71	1.93
TACK COAT .15 GAL/SY	23.00	GAL		0.00	0	0	0	44	44	1.93
Mob & demob	1.00	LS		0.00	0	0	0	2,570	2,570	2569.64
DOCK A (Non Fed)										
Temporary causeway (XRKSG)										
LABORER 1	19.00	HR	XLAB1	1.00	19	848	0	0	848	44.63
ROCKSETTER	19.00	HR	XRKS	1.00	19	1,136	0	0	1,136	59.77
CRANE 50 TON TRACK SEV COND	19.00	HR	XCRT050S	1.00	0	0	1,817	0	1,817	95.61
LOADER 5.0 CY WHEEL SEV	19.00	HR	XTRLW5.0S	1.00	0	0	1,898	0	1,898	99.91
OPERATOR GROUP 7	19.00	HR	XE07	1.00	19	1,088	0	0	1,088	57.26
OPERATOR GROUP 3	19.00	HR	XE03	1.00	19	1,044	0	0	1,044	54.94

DOCK A (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Remove causeway (XRKSG)										
LABORER 1	11.88	HR	XLAB1	1.00	12	530	0	0	530	44.63
ROCKSETTER	11.88	HR	XRKS	1.00	12	710	0	0	710	59.77
CRANE 50 TON TRACK SEV COND	11.88	HR	XCRT050S	1.00	0	0	1,135	0	1,135	95.61
OPERATOR GROUP 3	11.88	HR	XE03	1.00	12	652	0	0	652	54.94
TANDEM 12 CY AVE	11.88	HR	XTKTNDA	1.00	0	0	374	0	374	31.50
OPERATOR GROUP 6	11.88	HR	XE06	1.00	12	674	0	0	674	56.78
Pre-drill for piles (XJMED)										
COMPRESSOR 600 CFM	40.00	HR	XAICMPR600	1.00	0	0	976	0	976	24.39
AIR TRAC DRILL	40.00	HR	XAITDRL	1.00	0	0	1,040	0	1,040	26.01
FLATBED	40.00	HR	XTKFB	1.00	0	0	378	0	378	9.45
LABORER 1	20.00	HR	XLAB1	1.00	20	893	0	0	893	44.63
SITEWORK FOREMAN	40.00	HR	XOPERFM	1.00	40	2,391	0	0	2,391	59.77
Steel and bits	8.00	EA		0.00	0	0	0	41	41	5.15
Concrete piles 20" octagonal										
Pile template	1.00	LS		0.00	0	1,545	525	515	2,585	2585.00
OPERATOR GROUP 3	40.00	HR	XE03	1.00	40	2,198	0	0	2,198	54.94
OPERATOR GROUP 11	80.00	HR	XE11	1.00	80	4,677	0	0	4,677	58.47
LABORER 1	80.00	HR	XLAB1	1.00	80	3,570	0	0	3,570	44.63
SITEWORK FOREMAN	40.00	HR	XOPERFM	1.00	40	2,391	0	0	2,391	59.77
CRANE 50 TON TRACK AVE COND	40.00	HR	XCRT050A	1.00	0	0	3,117	0	3,117	77.92
FLATBED	40.00	HR	XTKFB	1.00	0	0	378	0	378	9.45
PILE HAMMER 13,100 FT-LB	40.00	HR	XMIPH13	1.00	0	0	889	0	889	22.22
COMPRESSOR 750 CFM	40.00	HR	XAICMPR750	1.00	0	0	1,051	0	1,051	26.27
CARPENTER	40.00	HR	XCAR	1.00	40	2,313	0	0	2,313	57.84
20" Octagonal piles (40')	10.00	EA		0.00	0	0	0	24,205	24,205	2420.50
WORK BOAT	40.00	HR	XMAWB	1.00	0	0	1,344	0	1,344	33.60
CUT-OFF PILE	10.00	EA	XLBLA	0.50	40	1,785	105	0	1,890	189.02
OPERATOR GROUP 11	40.00	HR	XE11	1.00	40	2,339	0	0	2,339	58.47
LABORER 1	40.00	HR	XLAB1	1.00	40	1,785	0	0	1,785	44.63
SITEWORK FOREMAN	20.00	HR	XOPERFM	1.00	20	1,195	0	0	1,195	59.77
FLATBED	20.00	HR	XTKFB	1.00	0	0	189	0	189	9.45
Tremie	5.00	CY		0.00	0	0	0	618	618	123.60
DIVER	40.00	HR	XMDIV	1.00	40	3,467	0	0	3,467	86.67
Test pile										
TEST PILE	1.00	EA	XEQEU	0.03	300	16,374	7,065	1,030	24,469	24468.84
TEST PILE READING (SUB)	1.00	EA		0.00	0	0	0	4,120	4,120	4120.00
Cast in place pilecaps										
SMALL TOOLS	23.07	HR	XMIST	1.00	0	0	121	0	121	5.25
FLATBED	23.07	HR	XTKFB	1.00	0	0	218	0	218	9.45
CARPENTER	46.13	HR	XCAR	1.00	46	2,668	0	0	2,668	57.84
CARPENTER FOREMAN	23.07	HR	XCARFM	1.00	23	1,366	0	0	1,366	59.20
OPERATOR GROUP 11	11.53	HR	XE11	1.00	12	674	0	0	674	58.47
LABORER 1	46.13	HR	XLAB1	1.00	46	2,059	0	0	2,059	44.63
CRANE HYDRAULIC 10 TON	11.53	HR	XCRH10	1.00	0	0	350	0	350	30.33
Side forms	238.00	SF		0.00	0	0	0	1,226	1,226	5.15
Bottom forms	108.00	SF		0.00	0	556	113	222	892	8.26
SMALL TOOLS	2.00	HR	XMIST	1.00	0	0	11	0	11	5.25
FLATBED	2.00	HR	XTKFB	1.00	0	0	19	0	19	9.45
CARPENTER	4.00	HR	XCAR	1.00	4	231	0	0	231	57.84
CARPENTER FOREMAN	2.00	HR	XCARFM	1.00	2	118	0	0	118	59.20

K A (Non Ped)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
OPERATOR GROUP 11	1.00	HR	XE11	1.00	1	58	0	0	58	58.47
LABORER 1	4.00	HR	XLAB1	1.00	4	179	0	0	179	44.63
CRANE HYDRAULIC 10 TON	1.00	HR	XCRH10	1.00	0	0	30	0	30	30.33
Rebars	910.00	LB		0.00	0	0	0	1,406	1,406	1.55
Concrete 4000 psi	9.00	CY		0.00	0	0	0	1,020	1,020	113.30
Cylinder test	3.00	EA		0.00	0	0	0	77	77	25.75
Place precast channels (XJMEO)										
CRANE 60 TON TRACK AVE COND	20.00	HR	XCRT060A	1.00	0	0	2,162	0	2,162	108.12
SMALL TOOLS	20.00	HR	XMIST	1.00	0	0	105	0	105	5.25
FLATBED	20.00	HR	XTKFB	1.00	0	0	189	0	189	9.45
CARPENTER	40.00	HR	XCAR	1.00	40	2,313	0	0	2,313	57.84
CARPENTER FOREMAN	20.00	HR	XCARFM	1.00	20	1,184	0	0	1,184	59.20
OPERATOR GROUP 3	20.00	HR	XE03	1.00	20	1,099	0	0	1,099	54.94
OPERATOR GROUP 11	20.00	HR	XE11	1.00	20	1,169	0	0	1,169	58.47
LABORER 1	40.00	HR	XLAB1	1.00	40	1,785	0	0	1,785	44.63
Precast channels 3'-7" x 1'-9"	10.00	EA		0.00	0	0	0	56,650	56,650	5665.00
Pipe sleeve & tie bolts	10.00	EA		0.00	0	0	0	515	515	51.50
Miscellaneous	1.00	LS		0.00	0	0	0	618	618	618.00
Fenders (XJMEO)										
SMALL TOOLS	35.50	HR	XMIST	1.00	0	0	186	0	186	5.25
FLATBED	35.50	HR	XTKFB	1.00	0	0	335	0	335	9.45
CARPENTER	71.00	HR	XCAR	1.00	71	4,106	0	0	4,106	57.84
CARPENTER FOREMAN	35.50	HR	XCARFM	1.00	36	2,102	0	0	2,102	59.20
OPERATOR GROUP 11	35.50	HR	XE11	1.00	36	2,076	0	0	2,076	58.47
LABORER 1	71.00	HR	XLAB1	1.00	71	3,169	0	0	3,169	44.63
HOPTO	35.50	HR	XEXHPT	1.00	0	0	642	0	642	18.08
OPERATOR GROUP 6	35.50	HR	XE06	1.00	36	2,016	0	0	2,016	56.78
Fabricate plastic fenders	2840.00	BF		0.00	0	4,680	298	8,776	13,754	4.84
Cleats (XJMEZ)										
CARPENTER	5.00	HR	XCAR	1.00	5	289	0	0	289	57.84
LABORER 1	5.00	HR	XLAB1	1.00	5	223	0	0	223	44.63
SMALL TOOLS	5.00	HR	XMIST	1.00	0	0	26	0	26	5.25
PICKUP	5.00	HR	XTKPU	1.00	0	0	42	0	42	8.40
Cleats	10.00	EA		0.00	0	0	0	1,545	1,545	154.50
DOCK B (Non Ped)										
Pre-drill for piles (XJMED)										
COMPRESSOR 600 CFM	4.00	HR	XAICMPR600	1.00	0	0	98	0	98	24.39
AIR TRAC DRILL	4.00	HR	XAITDRL	1.00	0	0	104	0	104	26.01
FLATBED	4.00	HR	XTKFB	1.00	0	0	38	0	38	9.45
LABORER 1	2.00	HR	XLAB1	1.00	2	89	0	0	89	44.63
SITEWORK FOREMAN	4.00	HR	XOPERFM	1.00	4	239	0	0	239	59.77
Steel and bits	2.00	EA		0.00	0	0	0	10	10	5.15
Concrete piles 20" octagonal										
OPERATOR GROUP 3	8.00	HR	XE03	1.00	8	440	0	0	440	54.94
OPERATOR GROUP 11	16.00	HR	XE11	1.00	16	935	0	0	935	58.47
LABORER 1	16.00	HR	XLAB1	1.00	16	714	0	0	714	44.63
SITEWORK FOREMAN	8.00	HR	XOPERFM	1.00	8	478	0	0	478	59.77
CRANE 50 TON TRACK AVE COND	8.00	HR	XCRT050A	1.00	0	0	623	0	623	77.92
FLATBED	8.00	HR	XTKFB	1.00	0	0	76	0	76	9.45
PILE HAMMER 13,100 FT-LB	8.00	HR	XMIPH13	1.00	0	0	178	0	178	22.22
COMPRESSOR 750 CFM	8.00	HR	XAICMPR750	1.00	0	0	210	0	210	26.27

DOCK B (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
CARPENTER	8.00	HR	XCAR	1.00	8	463	0	0	463	57.84
20" Octagonal piles (40')	2.00	EA		0.00	0	0	0	4,841	4,841	2420.50
CUT-OFF PILE	2.00	EA	XLBLA	0.50	8	357	21	0	378	189.02
OPERATOR GROUP 11	8.00	HR	XE11	1.00	8	468	0	0	468	58.47
LABORER 1	8.00	HR	XLAB1	1.00	8	357	0	0	357	44.63
SITEWORK FOREMAN	4.00	HR	XOPERFM	1.00	4	239	0	0	239	59.77
FLATBED	4.00	HR	XTKFB	1.00	0	0	38	0	38	9.45
Tremie	1.00	CY		0.00	0	0	0	124	124	123.60
DIVER	8.00	HR	XMDIV	1.00	8	693	0	0	693	86.67
Form (XJMEM)										
SMALL TOOLS	5.27	HR	XMIST	1.00	0	0	28	0	28	5.25
FLATBED	5.27	HR	XTKFB	1.00	0	0	50	0	50	9.45
CARPENTER	10.53	HR	XCAR	1.00	11	609	0	0	609	57.84
CARPENTER FOREMAN	5.27	HR	XCARFM	1.00	5	312	0	0	312	59.20
OPERATOR GROUP 11	2.63	HR	XE11	1.00	3	154	0	0	154	58.47
LABORER 1	10.53	HR	XLAB1	1.00	11	470	0	0	470	44.63
CRANE HYDRAULIC 10 TON	2.63	HR	XCRH10	1.00	0	0	80	0	80	30.33
Rebars	239.00	LB		0.00	0	0	0	369	369	1.55
Side forms	57.00	SF		0.00	0	0	0	294	294	5.15
Bottom forms	22.00	SF		0.00	0	113	23	45	182	8.26
Concrete (XJMEM)										
SMALL TOOLS	0.50	HR	XMIST	1.00	0	0	3	0	3	5.25
FLATBED	0.50	HR	XTKFB	1.00	0	0	5	0	5	9.45
CARPENTER	1.00	HR	XCAR	1.00	1	58	0	0	58	57.84
CARPENTER FOREMAN	0.50	HR	XCARFM	1.00	1	30	0	0	30	59.20
OPERATOR GROUP 11	0.25	HR	XE11	1.00	0	15	0	0	15	58.47
LABORER 1	1.00	HR	XLAB1	1.00	1	45	0	0	45	44.63
CRANE HYDRAULIC 10 TON	0.25	HR	XCRH10	1.00	0	0	8	0	8	30.33
Rebars	239.00	LB		0.00	0	0	0	369	369	1.55
Concrete 4000 psi	2.00	CY		0.00	0	0	0	227	227	113.30
Cylinder test	1.00	EA		0.00	0	0	0	26	26	25.75
Precast channels										
CRANE 50 TON TRACK AVE COND	4.00	HR	XCRT050A	1.00	0	0	312	0	312	77.92
SMALL TOOLS	4.00	HR	XMIST	1.00	0	0	21	0	21	5.25
FLATBED	4.00	HR	XTKFB	1.00	0	0	38	0	38	9.45
CARPENTER	8.00	HR	XCAR	1.00	8	463	0	0	463	57.84
CARPENTER FOREMAN	4.00	HR	XCARFM	1.00	4	237	0	0	237	59.20
OPERATOR GROUP 3	4.00	HR	XE03	1.00	4	220	0	0	220	54.94
OPERATOR GROUP 11	4.00	HR	XE11	1.00	4	234	0	0	234	58.47
LABORER 1	8.00	HR	XLAB1	1.00	8	357	0	0	357	44.63
Precast channels 3'-7" x 1'-9"	2.00	EA		0.00	0	0	0	11,330	11,330	5665.00
Pipe sleeve & tie bolts	2.00	EA		0.00	0	0	0	62	62	30.90
Miscellaneous	1.00	LS		0.00	0	0	0	412	412	412.00
Fenders (XJMEO)										
SMALL TOOLS	15.25	HR	XMIST	1.00	0	0	80	0	80	5.25
FLATBED	15.25	HR	XTKFB	1.00	0	0	144	0	144	9.45
CARPENTER	30.50	HR	XCAR	1.00	31	1,764	0	0	1,764	57.84
CARPENTER FOREMAN	15.25	HR	XCARFM	1.00	15	903	0	0	903	59.20
OPERATOR GROUP 11	15.25	HR	XE11	1.00	15	892	0	0	892	58.47
LABORER 1	30.50	HR	XLAB1	1.00	31	1,361	0	0	1,361	44.63
HOPTO	15.25	HR	XEXHPT	1.00	0	0	276	0	276	18.08

K B (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
OPERATOR GROUP 6	15.25	HR	XE06	1.00	15	866	0	0	866	56.78
Fabricate plastic fenders	1220.00	BF		0.00	0	2,011	128	3,770	5,908	4.84
Cleats (XJMEZ)										
CARPENTER	3.00	HR	XCAR	1.00	3	174	0	0	174	57.84
LABORER 1	3.00	HR	XLAB1	1.00	3	134	0	0	134	44.63
SMALL TOOLS	3.00	HR	XMIST	1.00	0	0	16	0	16	5.25
PICKUP	3.00	HR	XTKPU	1.00	0	0	25	0	25	8.40
Cleats	6.00	EA		0.00	0	0	0	927	927	154.50
BOAT RAMP (Non Fed)										
Bedding (XRKSG)										
LABORER 1	16.00	HR	XLAB1	1.00	16	714	0	0	714	44.63
ROCKSETTER	16.00	HR	XRKS	1.00	16	956	0	0	956	59.77
CRANE 50 TON TRACK SEV COND	16.00	HR	XCRT050S	1.00	0	0	1,530	0	1,530	95.61
LOADER 5.0 CY WHEEL SEV	16.00	HR	XTRLW5.0S	1.00	0	0	1,599	0	1,599	99.91
OPERATOR GROUP 7	16.00	HR	XE07	1.00	16	916	0	0	916	57.26
OPERATOR GROUP 3	16.00	HR	XE03	1.00	16	879	0	0	879	54.94
DIVER	32.00	HR	XMDIV	1.00	32	2,773	0	0	2,773	86.67
OPERATOR FOREMAN	16.00	HR	XOPERFM	1.00	16	956	0	0	956	59.77
PICKUP	16.00	HR	XTKPU	1.00	0	0	134	0	134	8.40
Bedding	200.00	TON		0.00	0	0	0	3,090	3,090	15.45
Levelling frame (XRKSG)										
LABORER 1	25.00	HR	XLAB1	1.00	25	1,116	0	0	1,116	44.63
ROCKSETTER	25.00	HR	XRKS	1.00	25	1,494	0	0	1,494	59.77
CRANE 50 TON TRACK SEV COND	25.00	HR	XCRT050S	1.00	0	0	2,390	0	2,390	95.61
LOADER 5.0 CY WHEEL SEV	25.00	HR	XTRLW5.0S	1.00	0	0	2,498	0	2,498	99.91
OPERATOR GROUP 7	25.00	HR	XE07	1.00	25	1,431	0	0	1,431	57.26
OPERATOR GROUP 3	25.00	HR	XE03	1.00	25	1,374	0	0	1,374	54.94
DIVER	50.00	HR	XMDIV	1.00	50	4,333	0	0	4,333	86.67
OPERATOR FOREMAN	25.00	HR	XOPERFM	1.00	25	1,494	0	0	1,494	59.77
PICKUP	25.00	HR	XTKPU	1.00	0	0	210	0	210	8.40
Levelling frame	1.00	LS		0.00	0	0	0	44,599	44,599	44599.00
Precast slab (XRKSG)										
LABORER 1	96.00	HR	XLAB1	1.00	96	4,284	0	0	4,284	44.63
ROCKSETTER	24.00	HR	XRKS	1.00	24	1,434	0	0	1,434	59.77
CRANE 50 TON TRACK SEV COND	24.00	HR	XCRT050S	1.00	0	0	2,295	0	2,295	95.61
LOADER 5.0 CY WHEEL SEV	24.00	HR	XTRLW5.0S	1.00	0	0	2,398	0	2,398	99.91
OPERATOR GROUP 7	24.00	HR	XE07	1.00	24	1,374	0	0	1,374	57.26
OPERATOR GROUP 3	24.00	HR	XE03	1.00	24	1,319	0	0	1,319	54.94
DIVER	48.00	HR	XMDIV	1.00	48	4,160	0	0	4,160	86.67
OPERATOR FOREMAN	24.00	HR	XOPERFM	1.00	24	1,434	0	0	1,434	59.77
PICKUP	24.00	HR	XTKPU	1.00	0	0	202	0	202	8.40
Type I planks	1.00	LS		0.00	0	0	0	33,578	33,578	33578.00
Miscellaneous	1.00	LS		0.00	0	0	0	1,030	1,030	1030.00
Cast in place slab (XJMEJ)										
SMALL TOOLS	7.96	HR	XMIST	1.00	0	0	42	0	42	5.25
FLATBED	7.96	HR	XTKFB	1.00	0	0	75	0	75	9.45
CARPENTER	7.96	HR	XCAR	1.00	8	461	0	0	461	57.84
OPERATOR GROUP 11	7.96	HR	XE11	1.00	8	466	0	0	466	58.47
LABORER 1	39.81	HR	XLAB1	1.00	40	1,777	0	0	1,777	44.63
MASON	7.96	HR	XMAS	1.00	8	425	0	0	425	53.38
SITEWORK FOREMAN	7.96	HR	XOPERFM	1.00	8	476	0	0	476	59.77

BOAT RAMP (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
CRANE HYDRAULIC 15 TON	7.96	HR	XCRH15	1.00	0	0	335	0	335	42.02
Concrete 4000 psi	43.00	CY		0.00	0	0	0	4,872	4,872	113.30
Concrete 4000 psi (waste)	2.00	CY		0.00	0	0	0	227	227	113.30
Edge form	130.00	LF		0.00	0	0	0	268	268	2.06
WWM 6x6 w1.4xw1.4	1800.00	SF		0.00	0	0	0	464	464	0.26
Sawcut grooves 3" o/c	10000	LF		0.00	0	0	0	5,150	5,150	0.52
Sawcut exp. jt. 25' o/c	100.00	LF		0.00	0	0	0	103	103	1.03
Cylinder tests	3.00	EA		0.00	0	0	0	77	77	25.75
Cast in place landing Dock A (XJMEJ)										
SMALL TOOLS	3.50	HR	XMIST	1.00	0	0	18	0	18	5.25
FLATBED	3.50	HR	XTKFB	1.00	0	0	33	0	33	9.45
CARPENTER	7.00	HR	XCAR	1.00	7	405	0	0	405	57.84
OPERATOR GROUP 11	3.50	HR	XE11	1.00	4	205	0	0	205	58.47
LABORER 1	17.50	HR	XLAB1	1.00	18	781	0	0	781	44.63
MASON	3.50	HR	XMAS	1.00	4	187	0	0	187	53.38
SITEWORK FOREMAN	3.50	HR	XOPERFM	1.00	4	209	0	0	209	59.77
CRANE HYDRAULIC 15 TON	3.50	HR	XCRH15	1.00	0	0	147	0	147	42.02
Concrete 4000 psi	23.00	CY		0.00	0	0	0	2,606	2,606	113.30
Edge form	191.00	LF		0.00	0	0	0	393	393	2.06
Rebars	1470.00	LB		0.00	0	0	0	1,893	1,893	1.29
Cylinder tests	3.00	EA		0.00	0	0	0	77	77	25.75
Cast in place landing Dock B (XJMEJ)										
SMALL TOOLS	3.50	HR	XMIST	1.00	0	0	18	0	18	5.25
FLATBED	3.50	HR	XTKFB	1.00	0	0	33	0	33	9.45
CARPENTER	7.00	HR	XCAR	1.00	7	405	0	0	405	57.84
OPERATOR GROUP 11	3.50	HR	XE11	1.00	4	205	0	0	205	58.47
LABORER 1	17.50	HR	XLAB1	1.00	18	781	0	0	781	44.63
MASON	3.50	HR	XMAS	1.00	4	187	0	0	187	53.38
SITEWORK FOREMAN	3.50	HR	XOPERFM	1.00	4	209	0	0	209	59.77
CRANE HYDRAULIC 15 TON	3.50	HR	XCRH15	1.00	0	0	147	0	147	42.02
Concrete 4000 psi	23.00	CY		0.00	0	0	0	2,606	2,606	113.30
Edge form	191.00	LF		0.00	0	0	0	393	393	2.06
Rebars	1470.00	LB		0.00	0	0	0	1,893	1,893	1.29
Cylinder tests	3.00	EA		0.00	0	0	0	77	77	25.75
Rock fill at docks										
OPERATOR GROUP 7	13.33	HR	XE07	1.00	13	763	0	0	763	57.26
LABORER 1	26.67	HR	XLAB1	1.00	27	1,190	0	0	1,190	44.63
CRANE 50 TON TRACK SEV COND	13.33	HR	XCRT050S	1.00	0	0	1,275	0	1,275	95.61
LOADER 3.0 CY WHEEL SEV	13.33	HR	XTRLW3.0S	1.00	0	0	836	0	836	62.72
ROCKSETTER	13.33	HR	XRKS	1.00	13	797	0	0	797	59.77
OPERATOR GROUP 3	13.33	HR	XE03	1.00	13	733	0	0	733	54.94
250 to 2000 lb	200.00	TON		0.00	0	0	0	5,150	5,150	25.75
PICKUP	13.33	HR	XTKPU	1.00	0	0	112	0	112	8.40
OPERATOR FOREMAN	13.33	HR	XOPERFM	1.00	13	797	0	0	797	59.77
Tremie grout (XJMEZB)										
OPERATOR GROUP 6	16.75	HR	XE06	1.00	17	951	0	0	951	56.78
LABORER 1	50.25	HR	XLAB1	1.00	50	2,243	0	0	2,243	44.63
OPERATOR FOREMAN	16.75	HR	XOPERFM	1.00	17	1,001	0	0	1,001	59.77
Grout pump	16.75	HR	XMICONCPM	1.00	0	0	299	0	299	17.85
Tremie incl waste	100.00	CY		0.00	0	0	0	12,360	12,360	123.60
DIVER	33.50	HR	XMDIV	1.00	34	2,903	0	0	2,903	86.67

ETMENT (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
REVETMENT (Non Ped)										
Armor 150 to 2,000 lb										
OPERATOR GROUP 7	42.00	HR	XE07	1.00	42	2,405	0	0	2,405	57.26
LABORER 1	84.00	HR	XLAB1	1.00	84	3,749	0	0	3,749	44.63
CRANE 50 TON TRACK SEV COND	42.00	HR	XCRT050S	1.00	0	0	4,016	0	4,016	95.61
LOADER 3.0 CY WHEEL SEV	42.00	HR	XTRLW3.0S	1.00	0	0	2,634	0	2,634	62.72
ROCKSETTER	42.00	HR	XRKS	1.00	42	2,510	0	0	2,510	59.77
OPERATOR GROUP 3	42.00	HR	XE03	1.00	42	2,307	0	0	2,307	54.94
250 to 2000 lb	630.00	TON		0.00	0	0	0	16,223	16,223	25.75
PICKUP	42.00	HR	XTKPU	1.00	0	0	353	0	353	8.40
OPERATOR FOREMAN	42.00	HR	XOPERFM	1.00	42	2,510	0	0	2,510	59.77
Bedding 12" filter rock										
OPERATOR GROUP 7	22.67	HR	XE07	1.00	23	1,298	0	0	1,298	57.26
LABORER 1	45.33	HR	XLAB1	1.00	45	2,023	0	0	2,023	44.63
CRANE 50 TON TRACK SEV COND	22.67	HR	XCRT050S	1.00	0	0	2,167	0	2,167	95.61
LOADER 3.0 CY WHEEL SEV	22.67	HR	XTRLW3.0S	1.00	0	0	1,422	0	1,422	62.72
ROCKSETTER	22.67	HR	XRKS	1.00	23	1,355	0	0	1,355	59.77
OPERATOR GROUP 3	22.67	HR	XE03	1.00	23	1,245	0	0	1,245	54.94
12" filter rock	340.00	TON		0.00	0	0	0	8,755	8,755	25.75
PICKUP	22.67	HR	XTKPU	1.00	0	0	190	0	190	8.40
OPERATOR FOREMAN	22.67	HR	XOPERFM	1.00	23	1,355	0	0	1,355	59.77
Filter cloth										
FILTER CLOTH	300.00	SY	XJMLD	50.00	30	1,339	50	464	1,853	6.18
Grout toe (XJMEZB)										
OPERATOR GROUP 6	7.50	HR	XE06	1.00	8	426	0	0	426	56.78
LABORER 1	22.50	HR	XLAB1	1.00	23	1,004	0	0	1,004	44.63
MASON	7.50	HR	XMAS	1.00	8	400	0	0	400	53.38
OPERATOR FOREMAN	7.50	HR	XOPERFM	1.00	8	448	0	0	448	59.77
Grout pump	7.50	HR	XMICONCPM	1.00	0	0	134	0	134	17.85
Grout	30.00	CY		0.00	0	0	0	3,399	3,399	113.30
Structures	1.00	EA			3,435	199,986	69,026	279,878	548,890	548890.39

Prime	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Access Road work										
Prime										
Sitework	1.00	JOB		0.00	0	5,343	2,570	5,461	13,374	13374.07
Paving										
Paving	1.00	JOB		0.00	0	23,600	9,305	50,600	83,504	83504.36
Striping										
Striping	1.00	JOB		0.00	0	3,546	0	1,195	4,741	4740.99
Electrical										
Electrical	1.00	JOB		0.00	0	5,664	803	1,454	7,921	7920.55
Access Road work	1.00	EA			0	38,152	12,678	58,710	109,540	109539.97

psoil	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Option 1 Landscaping										
Topsoil										
Topsoil	780.00	CY		0.00	0	0	0	9,641	9,641	12.36
PICKUP	56.00	HR	XTKPU	1.00	0	0	470	0	470	8.40
LANDSCAPE FOREMAN	56.00	HR	XLSF	1.00	56	1,964	0	0	1,964	35.07
LANDSCAPE WORKER	112.00	HR	XLSW	1.00	112	3,444	0	0	3,444	30.75
HOPTO	56.00	HR	XEXHPT	1.00	0	0	1,013	0	1,013	18.08
D-4 AVE CONDITION	56.00	HR	XTRD4A	1.00	0	0	1,606	0	1,606	28.69
Landscaping										
Sprinkler system	42000	SF		0.00	0	0	0	32,445	32,445	0.77
Grassing	42000	SF		0.00	0	0	0	5,408	5,408	0.13
True Kamani 15' 6"-8" caliper	6.00	EA		0.00	0	0	0	9,270	9,270	1545.00
Ironwood 5 gal	7.00	EA		0.00	0	0	0	676	676	96.56
Beach Naupaka	1250.00	EA		0.00	0	0	11,484	0	11,484	9.19
Weed divider	2800.00	SF		0.00	0	0	0	3,605	3,605	1.29
Poly divider	850.00	LF		0.00	0	0	0	3,830	3,830	4.51
Maintenance	2.00	MO		0.00	0	2,575	525	1,288	4,388	2193.75
Option 1 Landscaping	1.00	JOB			168	7,983	15,099	66,162	89,244	89244.26

Prime work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Option 2 Turnaround										
Prime work										
Sitework for turnaround	1.00	JOB	N/A	0.00	0	2,220	1,285	1,236	4,741	4740.85
Paving										
Paving	1.00	JOB	N/A	0.00	0	7,883	3,108	13,704	24,696	24695.51
Option 2 Turnaround	1.00	JOB			0	10,103	4,393	14,940	29,436	29436.36

CTRICAL (Non Fed)	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	TOTAL COST	UNIT COST
Option 3 Electrical										
ELECTRICAL (Non Fed)										
Removal work (XRKSB)										
PICKUP	8.00	HR	XTKPU	1.00	0	0	84	0	84	10.50
ELECTRICIAN	16.00	HR	XELE	1.00	16	1,162	0	0	1,162	72.63
CRANE HYDRAULIC 10 TON	8.00	HR	XCRH10	1.00	0	0	303	0	303	37.92
OPERATOR GROUP 10A	8.00	HR	XE10A	1.00	8	582	0	0	582	72.81
Conduits and wiring (XRKSB)										
PICKUP	24.00	HR	XTKPU	1.00	0	0	252	0	252	10.50
ELECTRICIAN	72.00	HR	XELE	1.00	72	5,229	0	0	5,229	72.63
HOPTO	24.00	HR	XEXHPT	1.00	0	0	542	0	542	22.60
OPERATOR GROUP 6	24.00	HR	XE06	1.00	24	1,703	0	0	1,703	70.97
LABORER 1	24.00	HR	XLAB1	1.00	24	1,339	0	0	1,339	55.79
Handhole 2' x 4'	2.00	EA		0.00	0	0	2,100	0	2,100	1050.00
Conduit 2" pvc	560.00	LF		0.00	0	0	0	1,442	1,442	2.58
Conduit 1" pvc	240.00	LF		0.00	0	0	0	309	309	1.29
Wire #12	615.00	LF		0.00	0	0	0	285	285	0.46
Wire #10	840.00	LF		0.00	0	0	0	552	552	0.66
Wire #8 grnd	200.00	LF		0.00	0	0	0	64	64	0.32
Wire #6	600.00	LF		0.00	0	0	0	811	811	1.35
Concrete jacket	60.00	CY		0.00	0	0	0	0	0	0.00
Concrete manhole collar	1.00	CY		0.00	0	0	0	129	129	128.75
Poles and fixtures (XRKSB)										
PICKUP	16.00	HR	XTKPU	1.00	0	0	168	0	168	10.50
ELECTRICIAN	32.00	HR	XELE	1.00	32	2,324	0	0	2,324	72.63
CRANE HYDRAULIC 10 TON	16.00	HR	XCRH10	1.00	0	0	607	0	607	37.92
OPERATOR GROUP 10A	16.00	HR	XE10A	1.00	16	1,165	0	0	1,165	72.81
Wood pole Cl-3 35'	2.00	EA		0.00	0	0	0	1,159	1,159	579.38
HPS fixture 400W	4.00	EA		0.00	0	0	0	2,833	2,833	708.13
Mounting bracket	2.00	EA		0.00	0	0	0	52	52	25.75
Angle bracket	10.00	EA		0.00	0	0	0	129	129	12.88
Mesh pole sock	2.00	EA		0.00	0	0	0	116	116	57.94
Protctive cloth	2.00	EA		0.00	0	0	0	52	52	25.75
SS band	2.00	EA		0.00	0	0	0	13	13	6.44
Plastic strap	4.00	EA		0.00	0	0	0	3	3	0.64
SS jb 8x8x6	2.00	EA		0.00	0	0	0	90	90	45.06
Conduit 1" sched 80 pvc	50.00	LF		0.00	0	0	0	64	64	1.29
NEMA 3R SS meter socket/brkt	1.00	EA		0.00	0	0	0	451	451	450.63
SS mounting frame	1.00	EA		0.00	0	0	0	39	39	38.63
Panel P NEMA 4x SS	1.00	EA		0.00	0	0	0	1,094	1,094	1094.38
Option 3 Electrical	1.00	JOB			192	13,505	4,056	9,684	27,246	27245.79
Kahului Small Boat Harbor	1.00	EA			10,480	689,839	450,544	695,089	1,835,471	1835471