



US Army Corps
of Engineers
Honolulu District

Public Notice of Application for Permit

Regulatory Branch (1145b)
Building 230
Fort Shafter, Hawaii 96858-5440

Public Notice Date: January 17, 2013
Expiration Date: February 17, 2014
Permit File Number: POH-2013-00138

Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States as described below and shown on the attached drawings.

APPLICANT: Mr. Derek George, Marine Corps Base Hawaii

AGENT: Mr. Aaron Poentis, Naval Facilities Engineering Command, Hawaii

LOCATION: Waterfront Operations Facility at the end of Sumner Road at the extreme western end of Marine Corps Base Hawaii on Kaneohe Bay, Island of Oahu, Hawaii (TMK: (1) 4-4-08:001). Latitude: 21.450070 N; Longitude: -157.777581 W

PROPOSED WORK: The proposed work includes the demolition of an existing 11.8-foot-wide by 61.4-foot-long, concrete boat ramp followed by the construction of a new boat ramp which would be 15.7-foot wide and 82.7-foot long. To accomplish this, the proposed work plan includes the relocation of corals in the vicinity of the boat ramp located on both existing rip rap and natural substrate, as detailed in the attachments and the Navy's letter dated March 14, 2013, to the National Marine Fisheries Service (see also Mitigation below).

Once coral relocation is complete, full-depth silt/turbidity curtains would be deployed around the construction area prior to in-water work. Existing rip-rap material would be relocated by hand to adjacent areas outside of the construction area. Demolition of the existing concrete boat ramp would include the removal of 637 square feet of existing concrete ramp slabs by using an excavator to "bite" off pieces to be lifted safely out of the water. After removal of the concrete slabs, the same excavator would be used to excavate the footprint of the new boat ramp, which would include the removal and disposal of 21.5 cubic yards of material. The Manitowoc M80 crane with clamshell bucket would be used to excavate the pocket for the toe of the ramp.

The Manitowoc M80 crane would be used to lay 20.5 cubic yards of the new graded granular fill base cushion for the new boat ramp, and a weighted screed beam would be used to level the granular fill into the final position underwater on a steel beam leveling frame. The crane would then be used to place rip rap at the base of the ramp to lock in and support the weight of the pre-cast panels. Using the crane, new precast concrete panels would be lowered into place on top of the leveling frame to form the deck surface of the new boat ramp.

All heavy equipment would remain on land above the mean high tide line, and only the cable rigging and bucket of the crane/arm and bucket of the excavator would enter the water during the course of the work. Please see the attached for additional information on the proposed demolition and reconstruction of the boat ramp.

PURPOSE: To provide adequate access from the Waterfront Operations Facility on Marine Corps Base Hawaii to Kaneohe Bay for emergency responders and capability for launch and recovery of vessels as efficiently and safely as possible for daily training and operations.

ADDITIONAL INFORMATION: The discharge of fill material would be necessary to construct the replacement boat ramp and to ensure its stability after construction. Fill materials that would be discharged include new geotextile, granular fill base course and steel leveling frame to support the new boat ramp, pre-cast concrete slabs, and new rock rip rap to be installed around the sides of the new boat ramp to prevent erosion.

PLEASE NOTE: Application included the proposed construction of an outfall in addition to the reconstruction of the boat ramp. The outfall construction was provisionally authorized under Nationwide Permit #7 at an earlier date pending receipt of Water Quality Certification from the Department of Health – Clean Water Branch. Therefore, the proposed information being reviewed is only for the proposed boat ramp reconstruction per this public notice.

MITIGATION: Best management practices (BMPs) that would be implemented during construction include the use of full-depth silt curtains to enclose all in-water work; bermed drying area where excavated material will be dried out in a designated containment cell, which would be bermed on all sides and lined with impermeable plastic sheeting to prevent return water to the bay; relocation of rip rap by divers rather than machinery for minimal disturbance to the adjacent aquatic environment; secondary containment for fuel; and avoidance measures for the protection of marine life.

Avoidance and minimization of effects to coral reef adjacent to the proposed project site would include the transplantation of coral colonies to suitable receptor sites on the adjacent reef. This action would occur prior to the start of in-water construction work. All transplanting would be done during high tide. Trained divers would carefully count, identify, label, and move corals a short distance (less than 75 feet) to a nearby reef. Divers would remove coral by hand using chisels and prying. The corals would not be removed from the water at any time, would be kept at the same depth during relocation to avoid stress, and would be moved to a non-marginal habitat for increased likelihood of survival. Divers would assess the receiving area and mark suitable areas with floats/tags. Coral colonies would be wedged and secured into the interstitial spaces in the receiving areas. Markers would be installed for future identification and monitoring. No chemicals would be used. Please see the attached letter from the Navy to the National Marine Fisheries Service for additional details on the coral transplantation plan.

The applicant's proposed work did not specifically identify any compensatory mitigation.

WATER QUALITY CERTIFICATION: The Corps may not issue a DA permit for any activity that may result in a discharge into waters of the United States until the applicant has obtained

from the **State of Hawaii Department of Health** a certification or waiver of certification as required under Section 401 of the Clean Water Act.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: Section 307 of the Coastal Zone Management Act of 1972, as amended, requires federal activities directly affecting land or water uses in the Coastal Zone to be conducted in a manner which is, to the maximum extent practicable, consistent with the enforceable policies of the State's approved Coastal Zone Management Program. Marine Corps Base Hawaii (MCBH) has determined, by letter dated March 5, 2009, that the proposed project is located on Federal land and within the "Defensive Sea Area", which are excluded from the State's coastal zone. In addition, MCBH has determined there would be no reasonable, foreseeable direct or indirect effects on any coastal use or resources of the State's coastal zone.

CULTURAL RESOURCES: MCBH has determined, by letter dated February 11, 2009, that the proposed project would result in no historic properties affected within the area of potential affect. By letter dated February 23, 2009, the State Historic Preservation Office concurred with MCBH's determination.

ENDANGERED SPECIES: Section 7 of the Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of species listed as threatened or endangered under the ESA or result in the destruction or adverse modification of designated critical habitat.

By letter dated March 5, 2009 to NMFS, MCBH determined that the proposed project would not adversely affect species listed as threatened or endangered and requested concurrence. By letter dated April 20, 2009, NMFS concurred with MCBH's determination that the proposed project may affect, but would not likely adversely affect ESA-listed marine species or their designated critical habitat.

By letter dated January 14, 2009 to USFWS, MCBH determined that the proposed project may affect, but would not likely adversely affect species listed as threatened or endangered, specifically the Hawaiian stilt, and requested concurrence. By letter dated March 12, 2009, the USFWS concurred with MCBH's determination the proposed project may affect, but would not likely adversely affect the Hawaiian stilt.

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (MSFCMA) (16 U.S.C. 1855 (b)) and associated federal regulations found at 50 CFR Part 600 Subpart K. The Honolulu District area of responsibility includes EFH for species managed under Fishery Management Plans.

By letter dated March 14, 2013, MCBH determined that the proposed project would adversely affect EFH, requested consultation for effects to EFH with NMFS, and detailed in the letter the avoidance and minimization efforts, including coral transplantation, that are proposed to reduce adverse effects. By letter dated April 23, 2013, NMFS responded and concurred with MCBH's effects determination, as well as offering 5 conservation recommendations for MCBH to consider when implementing the avoidance and minimization plan.

AUTHORITY: This permit application will be reviewed under the following authorities:

(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). The Corps' public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

() Transport dredged material for the purpose of dumping it into ocean waters - Section 103 Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413). The Corps' public interest review will consider the criteria established under authority of Section 102(a) of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (40 CFR Parts 220 to 229), as appropriate.

EVALUATION: 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 benefits, 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 those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, 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.

The U.S. Army Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

PUBLIC HEARING: Any person may request that a public hearing be held to consider this application. Requests for public hearings must be in writing, within the comment period specified in this notice, and state clearly and concisely, the reasons and rationale for holding a public hearing.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as

shown below. All e-mail comments should be sent to emilee.r.stevens2@usace.army.mil. Conventional mail comments should be sent U.S. Army Corps of Engineers, Honolulu District, Building 230 (Attn: CEPOH-EC-R), Ft. Shafter, HI 96858-5440. Both conventional mail and e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration. Please include the following name and reference number: **MCBH Waterfront Operations Facility Boat Ramp Reconstruction; POH-2013-00138.**

Comments on the described work, with the reference number, should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Emilee Stevens at (808) 835-4310 if further information is desired concerning this notice.

Supplemental information and project drawings (**53 pages**) are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

Attachments

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)**

OMB APPROVAL NO. 0710-0003
EXPIRES: 31 AUGUST 2012

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

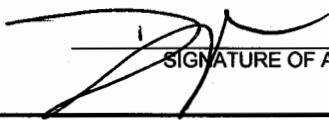
1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Derek Middle - Roshom Last - George Company - Marine Corps Base Hawaii E-mail Address - derek.george@usmc.mil			8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Aaron Middle - Y Last - Poentis Company - Naval Facilities Engineering Command, Hawaii E-mail Address - aaron.poentis@navy.mil		
6. APPLICANT'S ADDRESS: Address- 63002 (Attn: LE) City - Kaneohe Bay State - HI Zip - 96863 Country - USA			9. AGENT'S ADDRESS: Address- 400 Marshall Road City - JBPHH State - HI Zip - 96860 Country - USA		
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax N/A 808 257-5640 808 257-2794			10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax N/A 808-471-1171, x226 808-471-1160		

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Aaron Poentis, NAVFAC HI EV to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


7-1-2013

 SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Military Construction Project P-816, Waterfront Operations Facility, Marine Corps Base Hawaii, Kaneohe Bay	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Kaneohe Bay	14. PROJECT STREET ADDRESS (if applicable) Address End of Sumner Road at extreme western end of MCB HI City - Kaneohe Bay State- HI Zip- 96863
15. LOCATION OF PROJECT Latitude: °N 21o26'58"/21o27'00" Longitude: °W 157o46'36"/40"	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID (1) 4-4-08:001 Municipality City and County of Honolulu Section - Township - Range -	

17. DIRECTIONS TO THE SITE

Coming from Honolulu on H-3 Freeway, the guard shack for the Marine Corps base will be at the end of the freeway. After going through the guard shack, make a left turn at the second traffic light on to Mokapu Road. Follow Mokapu Road across the runway, and make the first left turn onto Sumner Road. When Sumner Road ends, make a left turn. Waterfront Operations complex is at the end of the road. Check in at the quarterdeck (Bldg 1372). Boat ramp and outfall locations are to the south.

18. Nature of Activity (Description of project, include all features)

Replace existing boat ramp with larger boat ramp, and replace collapsed storm water outfall.

Work below the mean higher high water (MHHW) mark will involve

- Demolition of an existing small concrete boat ramp 3.6 meters (11.8 feet) wide x 18.7 meters (61.4 feet) long
- Construction of a new small boat ramp 4.8 meters (15.7 feet) x 25.2 meters (82.7 feet) long
- Construction of a new headwall and wing walls for storm water drainage outlet

The new boat ramp was designed to minimize in-water disturbances, including concrete pouring and pile driving.

Further information provided in attached Questionnaire, Maps, and Drawings (Attachments 1 and 2).

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to consolidate and modernize Waterfront Operations facilities to meet current structural code regulations/standards and to provide adequate boat haul-out, storage, and maintenance facilities. An adequate boat haul-out facility would consist of a boat ramp with sufficient depth and width to enable the launch and recovery of vessels at any time of the day or night, as efficiently and safely as possible. The boat ramp was installed with no intent of providing access to Kaneohe Bay for emergency responders. Use of boat ramp at the waterfront operations is critical to their operations and training. The current boat ramp is too narrow for personnel to work effectively around a large boat trailer. It terminates at an insufficient depth to launch boats safely away from nearby rip rap. Its deteriorated condition makes it challenging for personnel to work around the boats as they enter and exit the water, especially at low tide. An abrupt change in the slope of the ramp approximately 2/3 of the way out of the water damages and occasionally breaks the axles of trucks towing the boat trailers. The existing storm drain outfall is collapsed and needs to be replaced to reduce flooding hazards at the site.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Discharge is needed to construct the replacement small boat ramp and outfall, and to ensure their stability after construction. Discharge consists of new geotextile, granular fill base course and steel leveling frame to support the new boat ramp, pre-cast concrete slabs used for construction of boat ramp, and new rock rip rap to be installed around the sides of the new boat ramp to prevent erosion. Discharge for construction of the outfall consists of new granular fill base course beneath new cast-in-place concrete headwall and wingwalls, with new rock rip to be installed at the drainage pipe outlet to prevent erosion.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

See Section B in Attach 1 (Questionnaire)

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.06 total fill area (0.02 of which is over existing boat ramp + rip rap) ; not wetland

or

Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Section G in Attachment 1 (Questionnaire). Adverse effects to EFH are being minimized to the greatest extent practicable. Post-construction monitoring will be conducted to assess the success of transplanted corals. The amount of unavoided and impacted coral will be small and will not jeopardize the functionality of the reef and ecosystem in accordance to EFH. Through avoidance and minimization efforts described above, the proposed project will result in insignificant impact to EFH. Compensatory mitigation is not required; however, debris removal within the area can be implemented into the coral transplant monitoring to further ensure a benefit to the resource.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

Construction of the portion of the Waterfront Operations Facility above the mean higher high water mark are underway. Construction of the pier and outfall will not commence until Department of Army permit and State Water Quality Certification are issued.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- No other property owners in immediate vicinity. The nearest neighbor is 1.1 miles (1.9 km) away, not expect to be affected.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
SHPO	Section 106 concur	0902WT30	2009-02-11	2009-02-23	N/A
USFWS	Section 7 concur	N/A	2009-01-14	2009-03-12	N/A
NMFS PRD	Section 7 concur	N/A	2009-01-14	2009-04-20	N/A
See Questionnaire for more detail + EFH + CZMA					

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.


SIGNATURE OF APPLICANT

7-1-2013
DATE


SIGNATURE OF AGENT

7/16/13
DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

3 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

**Department of Army Permit Application for
Military Construction Project P-816, Waterfront Operations Facility, Marine
Corps Base Hawaii, Kaneohe Bay**

**Attachment 1
Questionnaire**

QUESTIONNAIRE

DA Permit Application for Military Construction Project P-816, Waterfront Operations Facility, Marine Corps Base Hawaii, Kaneohe Bay

A complete Department of the Army Permit Application consists of the application form (ENG Form 4345, <http://usace.army.mil/CEDW/Documents/cecwo/reg/eng4345a.pdf>), drawings and environmental information necessary to determine a project's probable impact on the public interest (33 CFR Part 325.1 (d)(1) and Part 325.3(a)). Based on our experience, the environmental information necessary to make the public interest determination is often inadequate when only the ENG Form 4345 form is submitted by applicants. Project managers must then request additional information from applicants, resulting in delays in project evaluation. In order to provide more efficient processing of your application, this questionnaire has been developed to supplement the information required in ENG Form 4345 and to simplify your submittal of environmental assessment information.

A. LOCATION (supplement to Blocks 15-16 of ENG Form 4345):

1. Please provide the Tax Map Key number(s) for the project site:
(1) 4-4-08:001
 2. Please provide the Latitude and Longitude.
Outfall: Latitude 21° 26' 58" N and Longitude 157° 46' 36" W.
Boat Ramp: Latitude 21° 27' 00" N and Longitude 157° 46' 40" W.
 3. Please provide the watershed in which work is proposed:
Kaneohe Bay
-

B. PROPOSED ACTION (supplement to Block 18 of ENG Form 4345)

1. Please provide a detailed description of the scope of work, especially those activities that may adversely impact the aquatic environment, including the following pertinent information:
Work below the mean higher high water (MHHW) mark will involve
 - **Demolition of an existing small concrete boat ramp 3.6 meters (11.8 feet) wide x 18.7 meters (61.4 feet) long**
 - **Construction of a new small boat ramp 4.8 meters (15.7 feet) x 25.2 meters (82.7 feet) long**
 - **Construction of a new headwall and wing walls for storm water drainage outlet****The project is located at the Waterfront Operations Facility at Marine Corps Base Hawaii, Kaneohe Bay (Location and Vicinity Maps are provided in Sheets 1 and 2 of Attachment 2). Construction plans and details are provided in Sheets 3 to 9 of Attachment 2.**

The new boat ramp and outfall were designed to minimize in-water disturbances, including concrete pouring and pile driving.

Work above the MHHW mark is covered under National Pollutant Discharge Elimination System Permit Number HI S000183.

- a. Construction method(s) highlighting those methods requiring in-water work:

Coral Relocation at Boat Ramp Area

Prior to the start of in-water construction, coral in the vicinity of the boat ramp will be relocated. Location of coral and receiving area in relation to the boat ramp are shown on Sheet 10 of Attachment 2.

Full-depth silt curtains will be installed closely along the perimeter of the boat ramp construction and transplantation areas to minimize effects of potential turbidity on coral. All transplanting will be done during high tide.

Trained divers will carefully count, identify, label, and move corals a very short distance (less than 75 feet (22.9 meters)) to a nearby reef. Divers will remove coral by hand using chisels and prying. The corals would not be removed from the water at any time, would be kept at the same depth during relocation to avoid stress, and would be moved to a non-marginal habitat for increased likelihood of survival.

Divers will assess the receiving area, and mark suitable areas with floats/tags. Coral heads will be wedged and secured into interstitial spaces in the receiving area. Markers will be installed for future identification and monitoring. No chemicals will be used.

Precision cutting will be done by divers using chisels and other hand-held tools on the western side of the ramp, as opposed to using heavy construction equipment in this area in order to minimize damage to the corals.

Further details for coral transplantation are provided in the Navy's letter of March 14, 2013, to the National Marine Fisheries Service (NMFS) within the National Oceanic and Atmospheric Administration (NOAA) for consultation regarding effects on essential fish habitat and minimization of impact to coral (provided in Attachment 3).

Boat Ramp Replacement

Full-depth silt/turbidity curtains will be deployed around the construction area as shown on Plan-1 in Appendix A and Appendix B of Attachment 4, the BMP and Work Plan, prior to in-water work. Silt curtains will be carefully placed along the cut edge on the western side of the construction area and along the boundary with untouched corals on the eastern side to prevent sediment and construction activities from damaging adjacent live corals.

Existing rip rap material will be relocated by hand to adjacent areas outside of the construction area.

Demolition of the existing concrete boat ramp includes removal of 59.2 square meters (637 square feet) of existing concrete ramp slabs by

using excavator to bite off pieces that can be lifted safely out of the water, thereby minimizing in-water disturbance. The same excavator will be used to excavate the footprint of the new small boat ramp, which includes removal and disposal of 16.4 cubic meters (21.5 cubic yards) of material. The Manitowoc M80 crane w/ clamshell bucket will be used to excavate the pocket for the toe of the ramp.

The Manitowoc M80 crane with clamshell bucket will be used to lay 15.7 cubic meters (20.5 cubic yards) of the new graded granular fill base cushion for the new small boat ramp structure, and a weighted screed beam will be used to level the granular fill into final position underwater on a steel beam leveling frame.

The crane will then be used to place rip rap at the base of the ramp to lock in and support the weight of the pre-cast panels. Using the Manitowoc M80 crane, new precast concrete panels will be lowered into place on top of the leveling frame to form the deck surface of the new boat ramp, with the first panel being the panel at the toe of the ramp. Each precast panel locks into the other via keyways cast into the sides of each panel. When the last precast panel is placed at the top of the boat ramp, a new cast-in-place approach slab will be formed and poured (above the MHHW mark) to lock-in all components of the new boat ramp.

Heavy equipment will remain on land above the MHHW mark, and only the cable rigging and bucket of the crane/arm and bucket of the excavator will enter the water during the course of the work.

Storm Drain Outfall Replacement

Full-depth silt curtains will be deployed around the headwall construction area and extend all the way back to shore on both ends prior to in-water work, as shown on Plan-1 in Appendix A and Appendix C of Attachment 4, the BMP and Work Plan.

A land-based CAT 322BL excavator will be used to excavate 20 cubic meters (26.2 cubic yards) of material for the footprint and rip rap area of the new outfall pipe, headwall, and wing walls. The pipe path will be fine-graded and the pipe will be installed as required. Excavated material will be staged in the designated stockpile area on land for drying prior to disposal.

Forms for the concrete pour for the new headwall and wing wall structures will be sealed/waterproofed with expansive foam and silicone to prevent cement particles from getting in contact with water.

After concrete has cured, formwork will be removed, and rip rap will be placed using the Manitowoc M80 Crane with clamshell. Small hoopes and compactors will be used to backfill at low tide above the water level, behind the new headwall.

Heavy equipment will remain on land above the MHHW mark, and only the arm and bucket of the excavator will enter the water during the course of the work.

b. Machinery/equipment necessary to complete construction:

CAT 332BL Excavator
CAT 962G Wheel Loader
CAT 420D Backhoe
Manitowoc M80 Crawler Crane
Clamshell Bucket
Small Hoptoes
Small Compactors
Hand-held tools

c. Staging/Access requirements:

The existing boat ramp and wharf will allow access to the site. Heavy equipment, vehicles, materials, tools, waste, and bins for debris and trash will not be staged/stored below the MHHW elevation. BMPs will be in place to prevent discharges of pollutants to the bay. Excavated material will be stored and dried in a lined, bermed area. Staging areas for a small fuel bin and excavated material are shown on Plan-2 in Appendix A of Attachment 4, the BMP and Work Plan.

d. Construction sequence:

Sequenced as described in Section B.1.a, above.

e. Construction scheduling (begin and end dates):

In-water work is scheduled to start on 19 February 2014, and end on 29 April 2014, but is contingent upon obtaining Department of Army permit coverage and Section 401 State Water Quality Certification. The construction schedule is provided in Section 4 in Attachment 4, the BMP and Work Plan.

f. Location of stockpiling of material. (Be advised, stockpiling of materials in waters of the U.S. is discouraged. If unavoidable, stockpiling of materials in waters of the U.S. will require prior authorization from this office as it constitutes a temporary discharge of fill material.):

Materials will be stockpiled above the MHHW elevation. Location of bermed, lined area for stockpiled excavated material is shown on Plan-2 in Appendix A of the BMP and Work Plan (Attachment 4).

2. Please provide the location of borrow and upland disposal sites for construction materials and any excess materials not utilized to complete the project:

Concrete debris from the ramp demolition is considered non-recyclable because of a combination of the chloride saturation in salt water and the concentration of organics adhered to the concrete, and will be sent to a landfill for disposal. Excavated material will be dried out on land in a designated containment cell set up to accept the material for drying (within the staging area marked on Plan-2 in Appendix A of the BMP and Work Plan (Attachment 4)). The containment cell shall be bermed on all sides and lined with impermeable plastic

sheeting to prevent water from running back to the bay. Material will be allowed to dry via evaporation before loading into trucks for landfill disposal. The quantity of anticipated excavated material is equivalent to approximately one dump truck load.

Excavated material from the storm water outlet area will also be allowed to dry in the bermed cell before loading onto trucks for landfill disposal.

3. Please provide a description of Best Management Practices, i.e., silt fence/curtain, sheet pile, sandbags, etc., proposed for implementation throughout the project site as a measure to prevent degradation of the aquatic environment. Include a diagram showing placement of BMPs relative to the project site with the[sic]:

Coral transplantation and construction will be scheduled to avoid peak coral spawning times.

Trained divers will carefully cut edges of coral next to the boat ramp extension to avoid use of heavy equipment for excavation next to coral.

Concrete approach slab for the boat ramp will be poured at low tide to maximize the work space between the edge of the slab and the tide level.

Plastic sheeting will be deployed around the edges of the approach slab to the boat ramp and on the shore side of the outfall, to prevent concrete particles from getting onto the ground or into the water.

Additional avoidance and minimization measures are described in Section G.3.

Other best management practices to be implemented during construction include use of full-depth silt curtains to enclose all in-water work, bermed drying area, relocating rip rap by hand, secondary containment for fuel, good housekeeping measures, and avoidance measures for protection of marine life. Detailed descriptions are provided in Attachment 4, the BMP and Work Plan. Locations of silt curtains are shown on Plan-1 in Appendix A, and in Appendices B and C of Attachment 4, the BMP and Work Plan. Manufacturer's information for the silt curtains is provided as part of Attachment 5, Material Specifications.

C. DISCHARGE OF DREDGED AND/OR FILL MATERIAL (supplement to Blocks 20-22 of ENG Form 4345).

1. State the source of the dredged or fill material.*
No dredged material will be discharged.

For boat ramp, fill consists of:

Source	Composition	Quantity	Duration
<i>Fill material (grading)</i>	<i>See Granular Fill Below.</i>	<i>See Granular Fill Below.</i>	<i>Fill placement 11 Days</i>
<i>Granular fill</i>	<i>ASTM C33, No. 67 Gradation.</i>	<i>20.5cu yd. (16.4 cu m)</i>	
<i>Geotextile</i>	<i>Woven pervious sheet of polymeric material consisting of long-chain synthetic polymers composed of at least 95 percent by weight polyolefins, polyesters, or polyamides. More detail provided in Section 31 05 19 in Attachment 5, Material Specifications.</i>	<i>2,275 sq. ft. (211.4 sq. m)</i>	
<i>Leveling beam splice and stabilizing platform</i>	<i>ASTM A36/A36M.</i>	<i>8" deep steel beam, approx. 150 lineal ft. (45.7 m)</i>	<i>Panel placement 11 Days</i>
<i>Marine Concrete (pre-cast) for panels</i>	<i>Refer to Section 03 31 29 in Attachment 5, Material Specifications. Panels are cast on-shore and placed after curing.</i>	<i>32.7 cu yd. (25 cu m)</i>	
<i>Rip rap</i>	<i>Rock size varies, 200 lb. max</i>	<i>95.2 cu yd. (72.8 cu m)</i>	<i>Toe Protection 7 Days</i>

For outfall, fill consists of:

Source	Composition	Quantity	Duration
<i>Fill material (grading)</i>	<i>See Granular Fill Below.</i>	<i>See Granular Fill Below.</i>	<i>Fill placement 3 Days</i>
<i>Base course</i>	<i>Refer to Section 32 11 23 in Attachment 5, Material Specifications)</i>	<i>2 cu yd. (1.5 cu m)</i>	
<i>Granular fill</i>	<i>ASTM C33, No. 67 Gradation.</i>	<i>15 cu yd. (11.5 cu m)</i>	
<i>Marine Concrete for headwall</i>	<i>Refer to Section 03 31 29 in Attachment 5, Material Specifications. May be cast in place or cast on-shore and placed after curing.</i>	<i>3 cu yd. (2.3 cu m)</i>	<i>Panel placement 7 Days</i>
<i>Rip rap</i>	<i>Rock size varies, 200 lb. max</i>	<i>25 cu yd. (19.1 cu m)</i>	<i>Toe Protection 4 Days</i>

2. State the method of discharge. Provide type of equipment/machinery required.

Material to be discharged will be placed as described in Section B.1.a, above.

3. Indicate the location of the discharge within the project site. This is best accomplished through a plan view drawing of the site that shows the footprint of the filled area (discharge). A cross-sectional view with existing and proposed contours (elevations) also provides necessary information on the scope of proposed work.** The cross-sectional view should clearly demarcate either the Mean High Water Mark or the Mean Higher High Water Mark/High Tide Line for tidal waters or the Ordinary High Water Mark for non-tidal waters. Definitions of these limits of jurisdiction are available at, <http://gpo.gov/fdsys/pkg/CFR-2011-title33-vol3/pdf/CFR-2011-title33-vol3-part328.pdf>. Be advised, the Corps has sole authority to assert jurisdiction over a water body.

Drawings showing the locations of the boat ramp and outfall, cross-sections, details, and proposed contours are provided as Sheets 3 to 9 in Attachment 2. Construction drawings for in-water work are provided as Attachment 6. Total area of fill at the boat ramp location, including rip rap, is approximately 2,275 square feet (211.4 square meters/0.06 acre), which includes 1,042 square feet (96.8 square meters/0.03 acre) already covered by existing boat

ramp and rip rap. Total area of fill at the outfall area, including rip rap, is approximately 220 square feet (20 square meters/0.005 acre).

4. What types of structures or facilities would be constructed on the fill area? (Show on drawings their dimensions, layout, etc.)

Structures to be constructed on the fill area are described in Section B above, and shown on Sheets 3 to 9 in Attachment 2 and Attachment 6.

*Note that Blocks 21 and 22 of ENG Form 4345 require both the volume (usually given in cubic yards) and surface area (square feet, acres, etc.) of fill.

**Please submit any drawings on 8 ½ x 11" paper.

D. DREDGING PROJECTS

Project involves some in-water excavation, discussed in Section B, above, but does not involve dredging.

1. Please provide plans showing the dredging footprint within the project site. Include cross-sectional views depicting the existing and proposed contours. Also include a location/vicinity map and plan view (if appropriate) of the area(s) where dredge spoil will be stockpiled, processed, and disposed.

N/A

2. What is the type and composition of the material to be dredged?

N/A

3. How much time will be required to complete the dredging (construction window)? Will the dredging project be accomplished in phases? If so, please describe. Is maintenance dredging proposed, and, if so, what is the timeframe of the dredging cycle?

N/A

4. How much material will be dredged?

a. Volume: **N/A**

b. Surface area: **N/A**

5. State what dredging method(s) will be used, and indicate why that method(s) is proposed.

N/A

6. Where will the dredged material be de-watered?

N/A

7. Do you plan to transport dredged material for the purpose of disposing it in the ocean?
- a. Where do you plan to dispose of the dredged material? *N/A*
 - b. How much material (volume) will be disposed? *N/A*
 - c. What is the type and composition of the material? *N/A*
 - d. How long do you plan to dispose of the material? *N/A*
 - e. How will you transport the material to the ocean dump site? *N/A*
-

E. STRUCTURES IN NAVIGABLE WATERS

Be advised that the Corps considers and as such, regulates some BMPs as structures.

1. What specific structures will be constructed (type and size) and with what machinery and/or equipment?

The proposed action is to replace an existing boat ramp with a larger ramp to meet operational requirements and to replace a collapsed storm drainage outfall with a new outfall to aid site drainage and reduce flooding. See description in Section B, above. Further detail is provided in Sheets 3 to 9 in Attachment 2 and in Attachment 6 (Construction Drawings for In-Water Work).

2. Is in-water work required? If yes, describe.

In-water work is required (coral relocation, removal of old boat ramp, grading for new boat ramp and outfall, and installation of new boat ramp, outfall pipe, headwalls, and wingwalls). Work is described in more detail in Section B.1 above.

3. What will the structures be used for?

The primary purpose of the boat ramp will be used for launching emergency search and rescue vessels and training. The boat ramp is also regularly used by the State of Hawaii Department of Land and Natural Resources, non-Waterfront-Operations life safety personnel, and scientists. The pipe, headwall and wing walls will be used as a storm water outlet to replace an outlet that has collapsed.

4. Describe support and/or anchoring systems, where applicable.

Construction equipment will be based on shore. Boat ramp will be keyed into subgrade, and stabilized by geotextile, subbase course, leveling frame, and rip rap. Outfall will be constructed on and keyed into graded natural bottom of the bay, and stabilized by rip rap.

F. EXISTING ENVIRONMENT

Please submit photos when possible!

Photos are provided as Attachment 7.

1. PHYSICAL ENVIRONMENT

a. How would you generally describe the project area and surrounding area?

(1) Level of development:

The Waterfront Operations Facility is located in a restricted-access section of fill land that was constructed in the 1940s. Since then, the area has been developed, including extensive grading, filling, and paving on land, and dredging and filling in the water. The land in the immediate vicinity of the project site is developed and is currently used for waterfront operations. The project will replace an existing boat ramp and outfall. The area adjacent to the boat ramp is paved.

There is a small boat wharf between the outfall and boat ramp locations. The rest of the shoreline in the vicinity of the boat ramp is covered with rip rap and small boulders. The outfall is located next to an existing building.

An aerial photo is provided on page 1 in Attachment 7. Shoreline conditions are shown on pages 2 to 7.

(2) Existing land and water use:

Military operations. Facilities are used for boat maintenance, storage, and housing of personnel.

A Naval Defensive Sea Area that extends 500 yards (457 meters) out into the bay from the base on Mokapu Peninsula is controlled by the Marine Corps. Though commercial and private marine recreation including kayaking, boating, snorkeling, and fishing occur in Kaneohe Bay, they are not allowed near the Waterfront Operations Facility. In addition to training and search and rescue operations, the boat ramp is also used by scientists by agreement with MCBH.

Occasionally, marine animals are kept in an enclosure in the immediate vicinity of the wharf.

(3) Other general features:

The Waterfront Operations Facility is separated from most of the base by the runway. It is not located near any of the major thoroughfares, housing, work areas, services, or amenities of the Base.

b. What kind of substrate (i.e., rock, rubble, soil, etc.) is found at the project site? In absence of site-specific soil surveys, the United States Department of Agriculture, NRCS

The land at the project area is fill material that has subsequently been graded and paved. The soil type in the project area is Jaucas sand, 0 to 15 percent slopes (JaC). The series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean. Permeability is rapid, and runoff is very slow to slow. The hazard of erosion is slight, but wind erosion is a severe hazard where vegetation has been removed. The available water capacity is 0.5 to 1.0 inch per foot of soil. (from U.S. Department of Agriculture).

The waters immediately adjacent to the site include a dredged area with a silt bottom. Based on observations during biological survey conducted in November 2008 for the Environmental Assessment (EA), around the pier and seawall adjacent to the boat ramp, the dredged bottom consists of a typical lagoonal substratum of sand and mud with very little coral presence (Marine Research Consultants, Inc., December 2008, in Appendix A of the EA (Attachment 8)). Lagoonal deposits are expected to consist of gray clayey coralline gravel and sand that is generally very loose to loose.

c. What is the range of water levels which occur (during normal tides and during storm of flood periods)?

The southeast portion of Kaneohe Bay, roughly that area adjacent to the southwest shoreline of Mokapu Peninsula, is an area of restricted tidal circulation due to the presence of barrier reefs to the west and southwest. A study by Smith and others (1981) determined the total flushing time for the southeast bay sector to be 13 days as compared to 8 days for more northern portions of the inner bay (from Navy Assessment and Control of Installation Pollutants, Initial Assessment Study of Marine Corps Air Station Kaneohe Bay, Hawaii, April 1984).

The MHHW elevation is approximately 0.65 meters (2.1 feet) above sea level.

d. Describe the water currents and water circulation patterns at the project site.

From Paul Jokiel letter of 1 May 09 in Appendix A of Attachment 8, the EA: "The area is protected from large ocean swell by the barrier reef [to the north of the boat ramp], but the breaking waves create a unidirectional flow across the reef and flush the area during all tidal stages. This area is constantly replenished with clear ocean water and seldom, if ever, receives water from the south basin of Kaneohe Bay. The prevailing movement of water is from the ocean, through the reef area, and into the south basin of the bay."

e. What is the salinity (salt, brackish, or fresh) of the water at the project site?

Salt water.

f. What is the quality of the water at the project site? For instance, in Hawaii a stream may be listed as a 303(d) Impaired Water by the State Department of Health (DOH). See DOH's web site below:

<http://www.hawaii.gov/health/environmental/env-planning/wqm/wqm.html#303pcd>

Kaneohe Bay is listed as an impaired waterbody. The southern region of the bay does not attain water quality standards for enterococci, total nitrogen, nitrate and nitrite, turbidity, and ammonium nitrogen.

g. Is this area a groundwater recharge area?

No.

h. What is the history or possibility of contaminants/pollutants in the substrate (soil) at the source of fill material?

There is no suspected contamination associated with the project site. Imported fill material will come from clean commercial sources.

i. Have there been problems with erosion at or near the project site?

The area in the vicinity of the project site is mainly paved or covered with rock. There are no observed problems with erosion in the immediate vicinity of the boat ramp. There is some localized erosion in the vicinity of the proposed outfall believed to be due to overland drainage as a result of the broken storm drainage culvert to be replaced as part of this project.

j. Is the project site located in or near a drainage way or flood plain? If yes, describe.

The project site is located in two flood zones identified by the Federal Emergency Management Agency (FEMA) – flood zones VE and AE (as shown on Sheet #11 in Attachment 2). In compliance with Executive Order 11988, a review process for the project was undertaken to avoid, to the maximum extent possible, long- and short-term adverse impacts associated with the occupancy of modifications to structures located within the 100-year floodplain, wherever there is a practical alternative.

The area is prone to significant localized flooding, especially after heavy rains, and it is suspected that the culvert leading to the existing drainage outfall is obstructed by collapse, accumulated debris, and the intrusion of tree roots into the pipe. More detail is provided in Section 3.9.2 and copies of public notices are contained in Appendix E of the EA (Attachment 8).

k. What is the quality of the air at the project site? Will the proposed project have an adverse, or insignificant, effect on air quality at the site? Will the impacts to air quality be temporary or permanent?

Ambient air quality at the proposed project site is in attainment with all Federal Clean Air Act Standards.

Emissions would increase temporarily from the use of generators, construction-related vehicles, and fugitive dust, but they will be insignificant and temporary. Existing air pollutant emissions in the vicinity of the project site are primarily attributed to mobile sources (e.g., vehicles and aircraft) and stationary sources (e.g., electrical generators) related to operations and training.

I. What are the existing noise levels at the project site? Will the proposed project have an adverse, or insignificant, effect on noise levels at the site? Will the impacts to noise levels be temporary or permanent?

The ambient noise in the project area is dominated by sounds of wind rustling vegetation, ocean surf, noise associated with boat operations and maintenance, and aircraft operations at the nearby runway and landing areas.

Any increases in noise levels would be temporary and insignificant. In the EA, decibel levels associated with the activity that would produce the most noise (pile driving for building construction upland) that would reach the nearest residences were determined to be lower than noise from aircraft at the nearby runway. Noise levels associated with in-water work from standard construction equipment will be much lower than that.

Following completion of construction, the same boats that use the existing ramp will use the new ramp.

No significant impacts to public health and safety are anticipated from noise generated by construction or operational activities.

2. BIOLOGICAL ENVIRONMENT (attach biological survey reports if available)

a. Biological survey reports from a qualified environmental professional can provide much of the necessary information for evaluating a project's potential to impact aquatic resources. If not available, a general characterization of the plants and animals at the site should be provided.

Marine Environment (see photos on pages 3 to 12 in Attachment 7)

The waters of Kaneohe Bay are protected from the trade wind swell by a barrier reef that marks the windward margin of the Bay. This protection has allowed extensive coral reef development within the Bay. Patch reefs (more than 40) and fringing reefs provide habitat and shelter to a diversity of coral reef fishes, turtles, invertebrates, algae, and sea grasses (Hunter, C.L. and C.L. Evans "Coral Reefs in Kaneohe Bay: Two Centuries of Western Influence and Two Decades of Data," Bulletin of Marine Science, Vo. 57, No. 2; and Jokiel, Paul L., "Jokiel's Illustrated Scientific Guide to Kaneohe Bay, O'ahu," http://cramp.wcc.hawaii.edu/Download/Publications/OD_JOKIELS_Scientific_Guide_to_K-Bay.pdf, accessed April 8, 2009.)

The WestPac Final Coral Reef Ecosystem (CRE) Management Unit Species (MUS) Fishery Management Plan (FMP) of October 2001 designation of EFH for CRE MUS covers all the waters and habitat at depths from the sea surface to 50 fathoms (91.11 m) extending from the

shoreline (including state and territorial lands and waters) to the outer boundary of the Exclusive Economic Zone. This EFH designation includes all of Kaneohe Bay. The 2001 FMP also designates Kaneohe Bay as a Habitat of Particular Concern (HAPC). The HAPC designation does not confer additional protection or restrictions upon an area, but can help prioritize conservation efforts.

A portion of the shoreline around the Waterfront Operations Facility site is protected by a seawall. The remaining shoreline to the west of the seawall, including the boat ramp, is protected from wave action by revetment consisting of riprap and small boulders.

The waters immediately adjacent to the site include a dredged area with a silt bottom next to the seawall and the docks and rip rap around the boat ramp that has been partially colonized by corals. The waters immediately off the site include a fringing reef of dense coral coverage to the northwest.

Survey by Marine Research Consultants, Inc.

In November 2008, Marine Research Consultants conducted a survey of marine life in the vicinity of the proposed project.

The area immediately around the boat ramp was reported to consist of a revetment of bare boulders laid on a rubble base that, with distance from the shore, transitions into a limestone bench, some of which is colonized with living corals. The ramp itself has not been colonized by any corals. No corals were observed in vicinity of the outfall.

A relatively healthy fringing reef was reported to be present on the western and southwestern side of the project area up to the concrete pier where rescue boats are docked, with the exception of the region where the boat ramp bisects the shoreline.

The survey concluded that coral coverage consisted mainly of *Porites Compressa* and *Montipora capitata*, with small colonies of *Pocillapora damicornis*, all of which are common species.

Around the pier and the seawall, the dredged bottom consists of a typical lagoonal substratum of sand and mud with very little coral presence.

No seagrass is present in the sandy mud of the lagoon floor within the limits of the survey.

No Federal-listed threatened and endangered marine species were recorded during the November 2008 survey or during the 2012 assessment of the area. See discussion of potential for listed species at the project site in Section F.2.b below.

Macro-invertebrates such as feather duster works (*Seabellastart* spp.) and sea urchins (*Echinometra mathaei*) are present sporadically throughout the fringing reef. Virtually no macro-algae are present on the fringing reef adjacent to the project site.

Survey by Paul Jokiel, Hawaii Institute of Marine Biology, University of Hawaii at Manoa

Dr. Jokiell conducted a visual inspection of corals around the boat ramp in May 2009. He observed that the reef extending from the boat ramp along the north shoreline to the beach outside of the Waterfront Operations Facility was healthy. Coral disease and invasive sponges are nearly absent.

Consultation

Consultation was held with National Marine Fisheries Service (NMFS) in 2009. At the time, corals were determined to be attached to man-made structure (rip rap). Consultation was re-initiated in 2012 when corals were observed to be growing on fossilized reef (natural substrate) during subsequent site visits with natural resource agencies.

Site Visits by Natural Resource Agencies, Navy, Marine Corps, and construction and design consultants

Site visits were conducted in 2012 by NMFS, United States Fish and Wildlife Service (USFWS), Department of Land and Natural Resources Division of Aquatic Resources, Navy and Marine Corps biologists and engineers, and construction and design consultants. During these site visits, coral species Porites Compressa, Montipora capitata, Pocillapora damincornis, and Montipora flabellata (one colony) were observed growing on natural substrate as well as rip rap next to the boat ramp. Colony sizes ranged from < 10 cm to 150 cm, with 75% between 10 and 40 cm. There was concern expressed for the natural coral habitat during these visits. Minimization and avoidance measures are discussed in Section G.3.

No Federal-listed threatened and endangered marine species were recorded during any of the site visits described above. There is one 5-inch colony of Montipora flabellata, which is proposed for listing as threatened under the Endangered Species Act (ESA), near the edge of the project site.

The reports from the surveys conducted in 2008 and 2009 are in Appendix A of the EA (Attachment 8). More information regarding coral observed and quantified during 2012 site visits is provided in Navy EFH consultation letter dated March 14, 2013, to NMFS in Attachment 3.

Land Environment

Five species of birds listed under the Federal ESA and one listed as endangered by the State of Hawaii occur at MCB Hawaii, Kaneohe Bay. Listed species are discussed in Section F.2.b.

Areas around existing structures, roadways, parking areas, and other areas consist primarily of introduced or alien species.

More detail is provided in Section 3.2 and Appendix B of the EA (Attachment 8).

b. Please list any plants and animals found within or near the project area that are listed as threatened or endangered under the Endangered Species Act of 1973). <http://endangered.fws.gov/esa.html>

Marine Environment

The federal-listed threatened green sea turtle (Chelonia mydas), the federal-listed endangered hawksbill turtle (Eretmochelys imbricata) and federal-listed endangered Hawaiian monk seal (Monachus schauinslandi) have either been observed or may occur near or within the project area. None of these species are known to frequent the area in the immediate vicinity of the project area.

Green sea turtles are routinely sighted in and around Kaneohe Bay, but are not frequently sighted near the project area. Monk seals occur occasionally within Kaneohe Bay, but are not frequently sighted near the project area. Hawksbill turtles occur only occasionally within Kaneohe Bay and are expected to be very uncommon in the project area.

Beach areas where seals are known to bask along Kaneohe Bay are well beyond the range of any project impacts (e.g., sound, visual impacts, changes in turbidity or chemistry of the water, human presence, etc.). The waters adjacent to the project site are not especially attractive to sea turtles for feeding or breeding, and there are no basking or nesting sites in the area affected by the project.

None of the corals in the vicinity of the project area are currently listed as threatened or endangered. There is one 5-inch colony of Montipora flabellata, which is proposed for listing as threatened under the ESA, near the edge of the project site.

No federal-listed threatened or endangered marine plant species have been identified in the project area.

Land Environment

The only the federal-listed species observed in the project area is the endangered Hawaiian stilt (Himantopus mexicanus knudseni), which is observed in the Sag Harbor Wetland located to the east of the project site. The Hawaiian short-eared owl (Asio flammeus sandwichensis), which is listed by the State of Hawaii as endangered, but not under the Federal ESA, may occur on the site although no specific observations have been noted.

No federal-listed threatened or endangered terrestrial plant species have been identified in the project area.

3. SPECIAL AQUATIC SITES Is the project site located at or adjacent to any of the following areas? (Show on vicinity drawings the extent of the special sites, if they are present, clearly labeling each type.) Are any of these sites proposed for impact as a result of this project?

Special Aquatic Site:	Dredge Site	Discharge Site	Construction Site
Wetlands (swamps, marshes, bogs)	N/A	N	N
Mudflats	N/A	N	N
Vegetated Shallows (seagrass bed)	N/A	N	N
Coral Reefs	N/A	Y	Y
Riffle and Pool Complexes	N/A	N	N

The Sag Harbor Wetland is located to the east of the project site, but is not immediately adjacent to the boat ramp or outfall area, and will not be affected by their construction.

Coral reef is present in the vicinity of the boat ramp, described above in Section B.2.a. Impacts to coral reefs are discussed in Section G.3. Approximate location of coral reef in the vicinity of the boat ramp is shown on Sheet 10 in Attachment 2.

4. PUBLIC INTEREST CHARACTERISTICS

a. What is the existing land use zoning for the site and its vicinity?

The site and its vicinity is zoned as military and federal property. Residences are in the vicinity of Kaneohe Bay, but not near the project site.

b. What is on the land (including dwellings, facilities, etc.) at or near the site?

Facilities in the vicinity of the boat ramp and outfall are used by the Waterfront Operations Department. They include a wharf and pier, boat maintenance facilities, living quarters, and supporting facilities. The area is developed and mostly paved.

c. Do any of the following occur at or near the site?

	Dredge Site	Discharge (fill) Site	Construction Site
Local fresh water supply	N/A	N	N
Fishing (recreational, commercial)	N/A	N	N
Scenic areas	N/A	N	N
Agriculture (type)	N/A	N	N
Aquaculture (type)	N/A	N	N
Historic sites (type)	N/A	N	N
Other cultural resources (type)	N/A	N	N
Parks, monuments, preserves, etc.	N/A	N	N
Other (type)	N/A	N/A	N/A

Though commercial and private marine recreation including kayaking, boating, snorkeling, and fishing occur in Kaneohe Bay, they are not allowed near the Waterfront Operations Facility.

No designated scenic areas, parks, monuments, or preserves are present in the immediate vicinity of the project area. There is a recreational area to the north of the Waterfront Operations Facility, but it is far enough that it would not be affected by the proposed project.

G. ENVIRONMENTAL EFFECTS OF PROPOSED PROJECT

Briefly describe the environmental effects which may be expected as a result of your proposal, referring to the items listed in Section F above. Please don't answer "none"..all projects have some effects.

The EA concluded that this project will not have significant impact on the quality of the environment. A copy of the document is provided as Attachment 8.

1. Physical environment (effects on land, water, air, soil, etc.)

Surface Water

No significant impacts to Kaneohe Bay by the proposed action are anticipated.

Temporary increases in turbidity and suspended solids will occur during removal of the existing boat ramp, excavation, grading, and installation of the boat ramp, outfall, and rip-rap. Dissolved oxygen, temperature, pH, and salinity levels may be temporarily affected during excavation and grading. Temporary changes in pH could occur during construction of cast-in-place head wall and wingwalls if there are breaches in watertight forms. Temporary effects to water quality in the project area will be confined within the project area by full-depth silt curtains to isolate them from the water column during demolition and construction. Silt curtains will remain in place throughout construction, and will only be removed when final stabilization is in place and the site returns to equilibrium. Monitoring will be conducted to check that cement does not leak from forms and that silt curtains are working effectively. Following construction completion, water will be analyzed to verify that there are no chemical effects on the water column.

Work will be done in accordance with conditions of Clean Water Act Sections 401, 402, and 404 permits. BMPs described in Section B.3 and Attachment 4 will be implemented during construction to prevent construction-related pollutants from entering the bay. After construction, permanent structures will be in place to stabilize areas disturbed by in-water work. Areas disturbed by on-land work will be stabilized with structures, pavement, rip rap, or vegetation.

The difference between the area of the new boat ramp and the existing boat ramp would be small, and is not expected to affect water circulation or

fluctuation. Any changes in salinity would be temporary and isolated from the water column by a silt curtain. No long-term effects on salinity are expected.

The amount of runoff discharged from the reconstructed storm drain outfall is not expected to exceed the amount discharged before the outfall collapsed. The design for the Waterfront Operations Facility improvements incorporated low-impact development measures as much as practicable. Overall, the existing drainage pattern on land will not be altered.

Flooding:

The design for the project included elevated structures to keep Waterfront Operations personnel and equipment out of harm's way in the event of a flood or other natural disaster associated with coastal inundation. More detail is provided in Section 3.9.2 and copies of public notices are contained in Appendix E of the EA (Attachment 8).

No significant impacts on public health and safety from flooding are anticipated. The replacement of the collapsed drainage outfall will reduce flooding hazard. The slope of the new boat ramp will approximate the slope of the current boat ramp.

Groundwater

No impacts to groundwater are anticipated. No groundwater wells will be installed. BMPs will be implemented to prevent release of petroleum products and any hazardous substances that might impair groundwater at the site.

Geology, Topography, and Soils

No significant impacts to the geology, topography, or soils are anticipated. The project area consists of previously graded or disturbed land. The new boat ramp and outfall will be replacing existing structures. BMPs will be in place prior to any soil disturbance. Disturbed surfaces will be stabilized. Fill material will be selected for use in accordance with the specifications to ensure stability of the built environment without an increase in maximum peak flow rates of storm drainage.

Atmospheric Resources and Climate Change

No significant impacts to air quality or climate are anticipated as a result of the proposed action. Construction-related impacts would be short-term and temporary. Emissions would increase temporarily from the use of generators, construction-related vehicles, and fugitive dust. Fugitive dust would be minimized during construction, and generators would operate as required by permits. There are already existing air pollutant emission sources in the vicinity of the project site, primarily attributed to mobile sources (e.g., vehicles and aircraft) and stationary sources (e.g., electrical generators) related to operations and training.

No significant impacts on air quality or climate would occur from operations of the Waterfront Operations Facility. This project will not lead to an increase in operations and personnel at the site.

2. Biological environment (effects on plants, animals, and habitats)

The EA concluded that the proposed project would not have a significant impact on ecosystem structure, function, or services.

Marine Environment

No significant impacts to the federal-listed threatened green sea turtle (*Chelonia mydas*), the federal-listed endangered hawksbill turtle (*Eretmochelys imbricata*), and federal-listed endangered Hawaiian monk seal (*Monachus schauinslandi*) are anticipated. BMPs to be implemented include the use of observers during construction to suspend in-water activities when turtles or other protected marine species are observed in the project vicinity. BMPs described in Attachment 4 (BMP and Work Plan) will be implemented to minimize potential impacts to the species and their habitat.

In accordance with Section 7 of the ESA, it was determined that the proposed action is not likely to adversely affect federal-listed threatened or endangered marine species or their designated critical habitat, with concurrence by NMFS and USFWS. Comments were also requested of the State of Hawaii Department of Land and Natural Resources, Division of Aquatic Resources, though they did not provide a response. Copies of correspondence are in Appendix D of Attachment 8, the EA. NMFS and USFWS recommended BMPs for in-water work. Applicable BMPs have been incorporated into Section 11 of the BMP Plan (Attachment 4).

Impact to coral is discussed in Section G.3.

The proposed project will have no significant impacts on other marine flora and fauna. The area is not a spawning area for fish. Fish will avoid the area temporarily during the construction period, but are expected to return when construction is completed. The difference between the area of the new boat ramp and the existing boat ramp would be small, and is not expected to affect water circulation and fluctuation, or have long-term effects on salinity.

Land Environment

No significant impacts to terrestrial fauna are anticipated. Although the project is located near the Sag Harbor Wetland (approximately 250 feet [76 m]), the proposed project would not impact it. Construction equipment would be confined to the project site. The potential displacement of foraging birds during construction would be minimal, short-lived, and not significant. The Nu`upia Ponds Complex, located nearby (approximately 1.7 miles [2.7 km]), is large enough to accommodate temporarily displaced stilts without any measurable adverse impact to the population. It is expected that they would quickly return to their normal activities in the area, including feeding, resting, and nesting in the Sag Harbor Wetland, as they frequently rest on the pier close to human activity and the site is routinely exposed to significant aircraft noise.

The Hawaiian short-eared owl, if in the vicinity of the project, would not be affected by the proposed action. There would be no loss of owl habitat or prey base.

In accordance with Section 7 of the ESA, it was determined that the proposed action would not adversely affect federal-listed threatened or endangered species. USFWS concurred with this determination. Copies of correspondence with USFWS are in Appendix D of the EA (Attachment 8). USFWS expressed concerns with the spread of non-native invasive species by construction activities. Construction equipment will be cleaned prior to entry into the water.

No significant impacts to threatened or endangered terrestrial flora are anticipated since there are none identified in the project area.

Environmentally beneficial landscaping would be installed, including native aki aki grass and Polynesian-introduced milo trees.

3. Special aquatic sites (effects on wetlands, coral reefs, etc.)

Wetlands

Although the project is located near the Sag Harbor Wetland (approximately 250 feet [76 m]), the proposed action would not impact it. Construction activities would be confined to the project site.

Coral - Minimization and Avoidance Measures

Initial Area Potentially Affected:

The area of potential effect was initially estimated to be approximately 470 square feet (43.7 square meters) in the planning stages of this project.

Minimization and avoidance during planning and initial design:

MCB Hawaii and NAVFAC PAC biologists provided input into the initial design process to reduce the impact of the project. The intent was to minimize effects to the greatest extent practicable, by reducing the amount of in-water work and eliminating the need for pile-driving, which would have been necessary if the new ramp were to be placed over the existing ramp. The length of the boat ramp was minimized by placing the ramp approach as far inland as possible. Pre-cast concrete slabs were required to minimize the amount of in-water construction and disturbance.

Further minimization and avoidance through revision of design and construction methods in consultation with resource agencies:

Further refinements were made to the design based on discussions with natural resources agencies and additional site visits to map locations of corals in 2012.

The design was revised to eliminate the need for grout between the sub-base course and the leveling frame for the boat ramp.

After the in-water assessment with the resource agencies in January 2012, there was concern for the natural coral habitat, particularly on the east (dock) side of the ramp, which was previously not identified to the designers. The Contractor's Design Engineers were then asked if the dock side coral could be avoided completely, thus keeping impacts to coral on only one side instead of both sides of the ramp. Based on site visits, it was determined that it was more

important to minimize disturbance at the sides of ramp instead of at the end since there was little to no growth at the end of the ramp. Therefore, the preferred option was to not change the slope of the ramp, which requires less rip rap for stabilization. This resulted in narrower area impacted by construction, with no expansion towards the dock side. Another design alternative which was considered involved the installation of vinyl sheet piles to minimize lateral area of cut slopes. It was not as preferable as the selected design because sheet pile needs to be driven into the subsurface, which would create additional vibration that is harmful to adjacent coral. The Contractor will provide additional installation measures, such as silt curtains, around the dock side of the ramp to eliminate any impact to the coral. The revised design and modified construction measures will result in up to 50% greater avoidance and further minimization of excavation.

Additional avoidance will be achieved through precision cutting of the coral on the west side of the ramp where the extension will reach, instead of using the large construction claw. The more precise cutting will change the impact from 10 feet (3 meters) to +/-6 feet (1.8 meters) on the seaside of the ramp, resulting in additional avoidance.

Further minimization through coral relocation:

Minimization of coral loss will also be achieved by relocating as much coral is possible. The amount of coral for each species that was on natural (or rubble) substrate was then compared to the amount of coral that could be relocated. It is expected that 10-35% of the coral will be relocated, with a potential for up to 50-60%. This will be determinant on the way each coral maintains its structure at time of relocation and excavation. Further detail and table showing number of relocatable coral is provided in Navy's EFH consultation letter to NMFS (in Attachment 3).

There is one 5-inch colony of *Montipora flabellata*, which is proposed for listing as threatened under the ESA, near the edge of the project site. The colony is outside the direct impact zone of the project, and will be isolated and identified. As discussed in previous sections, silt curtains will be deployed to protect corals outside of the direct impact zone. Since construction is expected to begin after the listing date of December 2013, the Navy informally consulted with NMFS for a conference opinion. NMFS concurred that the proposed action, as modified since consultation in 2009, would have insignificant effects on that coral colony, and that the project is not likely to adversely affect any colonies of corals that have been proposed for listing under the ESA. They concluded that re-initiation of the ESA consultation would not be required should those corals become listed prior to the completion of this project. If conditions should change, NMFS will be consulted. Correspondence dated 12 June 2013 is provided as Attachment 9.

Relocation:

The November 2008 report by Marine Research Consultants recommended moving coral colonies likely to be affected by construction activities. Dr. Jokiel confirmed Marine Research Consultants' opinion that corals relocated would have a high chance of survival, saying that the excellent water quality and

protection from wave action in the area constituted ideal conditions. The two reports are provided as Appendix A of the EA (Attachment 8).

Coral relocation will occur prior to in-water construction activities. Locations of coral and receiving area in relation to the boat ramp are shown on Sheet 10 of Attachment 2.

Full-depth silt curtains will be installed along the perimeter of the boat ramp area. All transplanting will be done during high tide.

Trained divers will carefully count, identify, label, and move corals a very short distance (less than 75 feet [22.9 meters]) to nearby reef. Divers will remove coral by hand using chisels and prying. The corals would not be removed from the water at any time, would be kept at the same depth during relocation to avoid stress, and would be moved to a non-marginal habitat to increase likelihood of survival.

The following protocol/guidelines will be followed during the removal process:

- **Efforts to prevent damage to the edges of corals.**
- **If possible, remove the entire coral colony in one piece.**
- **Where removal of the entire colony is not possible, the colony will be partially removed to maintain the phenotypic genetic composition of corals from the project site (biologists to make judgment if fragments can be relocated).**
- **Avoid touching coral tissue.**

Divers will assess the receiving area, and mark suitable areas with floats/tags. Coral heads will be wedged and secured into interstitial spaces in the receiving area. Markers will be installed for future identification and monitoring. No chemicals will be used.

Once the transplant locations have been identified, the following protocol/guidelines should be followed during the reattachment process:

- **Similar species of corals should be clustered in close proximity to reduce species competition and for easier differentiation between transplanted corals and corals that currently exist at the recipient site.**
- **Wedge and secure detached coral into interstitial spaces.**
- **Install markers to assist with future identification for monitoring.**

Precision cutting will be done by divers using chisels and other hand-held tools on the western side of the ramp as opposed to using heavy construction equipment in this area in order to minimize damage to the corals.

The transplanted colonies will be mapped, photographed, and tagged to aid future monitoring.

To assess the success of transplanted corals, monitoring will be conducted for a 5-year period following transplantation.

Further details on transplantation are provided in Navy's EFH consultation letter to NMFS (in Attachment 3).

Other measures:

Silt curtains and other BMPs described in Section B.3 and Attachment 4 (BMP and Work Plan) would be used to prevent sediments from entering the water column and settling on the nearby reef. In addition, construction and

demolition activities would be timed to coincide with low tide to minimize short-term water disturbance and sediment deposition. In-water activities would also be scheduled for September, to avoid the summer coral spawning season.

Conclusion for EFH Consultation:

Through modifications to the construction plan and coral relocation efforts, the project footprint has been reduced by approximately 75%. Redesigning the construction plan allowed for avoidance of the coral on the eastern (dock) side of the ramp (approximately 50% reduction in area), while adjustments to ramp slope and precision cutting along the edge of the construction area reduced the footprint an additional approximately 25% on the western side of the ramp. Coral transplantation will provide further minimization (potentially being able to relocate 25% to 60% of the remaining impacted coral). Unavoidable natural reef impact will be less than 5 square meters (53.8 square feet) and no more than 8 square meters (86 square feet).

Adverse effects to EFH are being minimized to the greatest extent practicable. The amount of unavoided and impacted coral will be small in comparison to the overall amount of coral in the area, and will not jeopardize survival of species in the vicinity.

NMFS's response of April 23, 2013, to the Navy's EFH consultation letter (provided in Attachment 3) supported the efforts that had been and will be taken to minimize impacts to EFH and coral reef resources. The first four recommendations in the letter will be implemented at the site (e.g., relocation of corals growing on artificial substrate in addition to those growing on natural substrate; use of a marine biologist with prior experience relocating corals to lead/supervise the coral relocation effort, use of a marine biologist to conduct monitoring and share reports with NMFS and other resource agencies; strategically implement silt curtains such that this BMP does not itself inadvertently result in adverse effect to coral reef resources).

Adverse effects to EFH are being minimized to the greatest extent practicable. Post-construction monitoring will be conducted to assess the success of transplanted corals. The amount of unavoided and impacted coral will be small and will not jeopardize the functionality of the reef and ecosystem in accordance to EFH. Through avoidance and minimization efforts described above, the proposed project will result in insignificant impact to EFH. Compensatory mitigation is not required; however, debris removal within the area can be implemented into the coral transplant monitoring to further ensure a benefit to the resource.

4. Human use (how existing human activities would be affected)

Waterfront Operations does not plan to expand its operations or increase the number of personnel on site. Use of the site following construction would be the same as the existing use.

The proposed action would have a small beneficial short-term economic impact resulting from the generation of jobs and creation of short-term work for design- and construction-related firms and contractors. There will be short-term

impacts to the use of utilities, traffic, and solid waste generated during construction, but they are will not be significant.

Elevated noise will be temporary and not significant when compared to noise from the nearby runway.

There will be some disruption of recreation for short period of time while Waterfront Operations' boats are temporarily relocated during boat ramp construction (approximately 2 months for in-water work). No significant impacts on views would occur as a result of the proposed project. A new Waterfront Operations Facility would be in character with its surroundings.

No long-term impacts to socio-economics or demographics are anticipated from the proposed construction. There will be no significant impacts to infrastructure for potable water, wastewater, and electricity.

5. Historical/Cultural resources. The Corps must evaluate permit applications pursuant to Section 106 of the National Historic Preservation Act. In many cases, the Corps must coordinate its determination of a project's potential to adversely affect historic sites with the local Historic Preservation Officer. The Corps encourages applicants to contact their local Historic Preservation Officer as soon as possible in the project planning process to address any issues relevant to Section 106.

a. The State of Hawaii's Historic Preservation Office can be found at, <http://www.hawaii.gov/dlnr/hpd/hpgreeting.htm> .

b. In Guam, the Historic Preservation Officer can be found at, <http://historicguam.org/index.htm>.

No archaeological sites or deposits are anticipated within the project area since it consists of dredged coralline fill material. The facilities are less than 50 years old and are not eligible for listing on the National Register of Historic Places due to their association with the Cold War.

The Marine Corps consulted with the State Historic Preservation Officer (SHPO) in accordance with the regulations implementing Section 106 of the National Historic Preservation Act. The SHPO concurred with the Marine Corps' determination of "no historic properties affected." A copy of the correspondence is provided in Appendix D of the EA (Attachment 8).

6. Indirect impacts (will the project eventually encourage or discourage residential, agricultural, urban, industrial or resort activities?)

Waterfront Operations does not plan to expand its operations or increase the number of personnel on site. The project will not increase or decrease the potential of different types of activities.

The proposed project area is within the Defensive Sea Area in an area already used for military training and operations. The proposed action will not have reasonably foreseeable direct or indirect effects on the State's coastal zone (a copy of notification sent to the State of Hawaii Office of Planning is provided in Appendix C of the EA (Attachment 8)).

7. Cumulative impacts (Is this project similar in purpose, characteristics, and location compared to previous projects? Will this project lead to or be followed by similar projects? Are there other activities in the area similar to your proposed activity?)

Cumulative impacts for reasonable future actions within an approximately 1-mile radius of the project site were considered during the development of the EA (see Section 3.10 of the EA (Attachment 8) for more detail). All of the known future projects will involve replacement of existing buildings or construction of new buildings and facilities in areas that have been previously disturbed, most of which are in heavily-used areas associated with aircraft activity. Of the anticipated projects, only an unprogrammed project at the recreational marina located 6,200 feet (1.9 km) southeast of the project site will involve in-water work.

All projects would follow applicable environmental laws, regulations, executive orders, and base policies and management plans. All projects would implement applicable BMPs to prevent sediment and construction-related pollutants from entering Kaneohe Bay.

It is not anticipated that this project will lead to or be followed by similar projects. There are no other ongoing in-water construction projects in the vicinity of the proposed boat ramp and outfall.

8. Other impacts

N/A. All impacts evaluated are discussed above.

ALTERNATIVES to Activities Conducted in Aquatic Areas

Alternatives that were considered as part of the EA process but were not acceptable alternatives were:

- **No Action Alternative would not meet purpose and need. Waterfront Operations' equipment would continue to be at risk for damage with the existing boat ramp. The area would still be subject to flooding if the outfall is not replaced.**
- **Renovation/Modernization Alternative was not applicable to in-water work.**
- **Boat Ramp Extension Alternative which would involve the installation of a longer, wider concrete slab on top of the existing concrete slab was considered. The new slab would need to be supported on both sides with concrete pilings, and would have extended an additional 15 to 20 feet (4.5-6.0 m) into Kaneohe Bay at the existing slope to achieve the necessary depth from which to launch boats. This alternative was eliminated from further analysis because it would have required pile-driving and other substantial in-water construction. It would have had greater potential impacts on the marine environment from noise, vibration, earth-moving equipment, and sediment, affecting a larger area of marine environment.**
- **Recreational Marina Alternative would eliminate construction of a new boat ramp. The only other boat ramp in the vicinity of the Waterfront**

Operations facility is a recreational marina. This is not a viable long-term solution since Waterfront Operations personnel would be logistically disadvantaged for responding to breaches in security buffer/range surface danger zones on the ocean side of the base or to emergency calls in the bay. The existing recreational boat ramp and connecting harbor already experience a steady flow of recreational and military users. The large volume of pedestrians, motor vehicles, and boats using the same confined space during recreational marina hours, particularly on weekends and holidays, would interfere with Waterfront Operations' ability to respond to emergencies. Waterfront Operations needs ready access to a boat ramp and the ability to exit quickly from the harbor.

- **New Site Development Alternative would involve construction of a new site. It would require extensive in-water work for the construction of the boat ramp, docks, and supporting infrastructure required. It would also require grading, filling, and paving of the surrounding land and other site preparation for new buildings. This would result in higher costs, greater disturbance to the site and adjacent areas, and potentially greater impacts to the marine and coastal environment than would be experienced by the development at an existing site.**

1. List other sites which may be suitable for this proposal and indicate whether these are or could become available to you. If none, explain why.

See discussion for Recreational Marina Alternative and New Site Development Alternative above.

The proposed locations are the most suitable locations. The boat ramp needs to be located near the Waterfront Operations Facility to enable personnel to perform emergency search and rescue operations. The project is needed to keep Waterfront Operations and other safety personnel operationally ready for their mission.

The new boat ramp is being constructed at the site of the existing boat ramp to minimize the amount of disturbance in the water.

Construction of the replacement storm drain outfall at the location of the collapsed existing outfall will also minimize the amount of disturbance in the water.

2. If your project involves the discharge of fill material to convert wetlands or submerged areas to upland (dry land), list any existing upland sites which are or could become available to you. If none, clearly explain why.

A small portion of shoreline below the MHHW elevation will be covered by the structures, but the discharge of fill material will not convert submerged areas or wetlands with fastland.

3. List other methods or project designs which would fulfill the basic purpose of your proposal. Which ones are reasonable for you? If none, explain why.

See discussion for Boat Ramp Extension Alternative and discussion in Section G.3 above.

The design for the Waterfront Operations Facility improvements included minimization and avoidance measures as well as low-impact development measures as much as practicable to .

4. If your permit application were denied, what other alternatives would you have?

No other good alternatives would be available if the permit application were denied. As discussed in Section 1 above, use of the only other boat ramp near the Waterfront Operations Facility is not a viable option.

The current boat ramp was not designed for emergency response. The ramp is too narrow for personnel to work effectively around a large boat trailer. It terminates at an insufficient depth to launch boats safely away from nearby riprap, and its deteriorated condition makes it challenging for personnel to work around the boats as they enter and exit the water, especially at low tide. An abrupt change in the slope of the ramp approximately two-thirds of the way out of the water damages and occasionally breaks the axles of trucks towing the boat trailers. In its existing state, the boat ramp is hampering Waterfront Operations' ability to quickly respond to emergency calls.

If the replacement storm drain outfall cannot be constructed, flooding hazards at the facility will persist.

5. What can you do to avoid or minimize adverse effects of your proposal on the environment? For instance, a project might be relocated to a non-aquatic site, the footprint of fill or dredging can be minimized to only that which is necessary to achieve project purpose, a project footprint might be moved within a site to avoid aquatic resources, and/or different construction methods could be used.

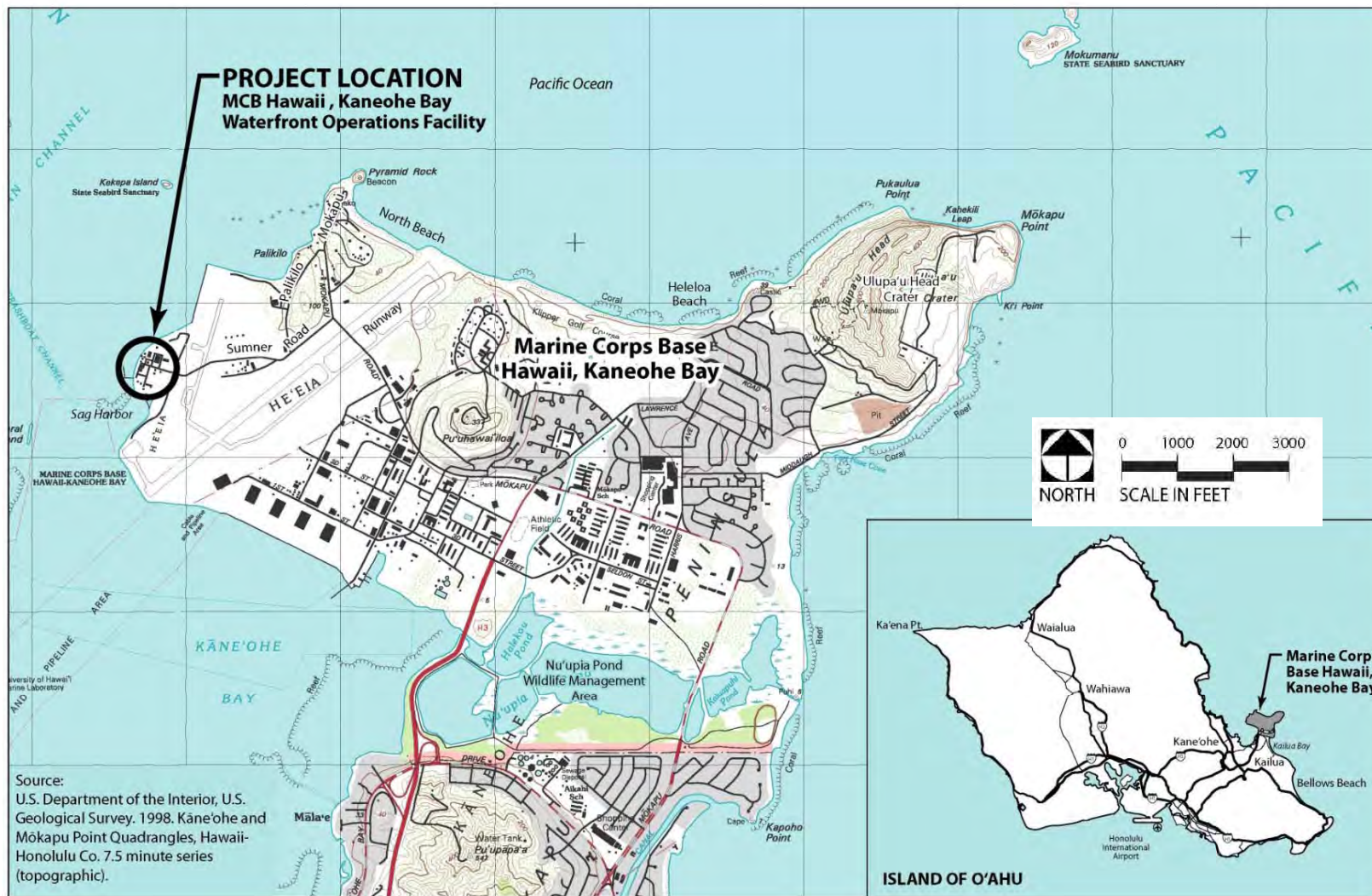
The boat ramp and storm drain outfall cannot be constructed in a non-aquatic site. The design has considered the minimum amount of impact to the aquatic environment.

The boat ramp design was revised as more information was obtained regarding the aquatic environment, specifically, coral. The Marine Corps and Navy have worked with the construction and design contractors to identify construction methods to minimize the impact of the project on corals. A detailed discussion of minimization and avoidance measures for coral reef is provided in Section G.3.

In-water work at the storm drain outfall involves the least amount of disturbance below the MHHW mark that would accommodate the slope of the drain line.

Best management practices (BMPs) will be implemented to minimize any adverse effects on the environment. These are described in Section B.3 and Attachment 4, the BMP and Work Plan.

Please see the Honolulu District's Compensatory Mitigation and Monitoring Guidelines on-line on our web site (<http://www.poh.usace.army.mil/regulatory.asp>), or contact the



LOCATION MAP

<p>PURPOSE: Military Construction Project P-816, Waterfront Operations Facility</p> <p>DATUM:</p> <p>ADJACENT PROPERTY OWNERS:</p> <ol style="list-style-type: none"> 1. 2. 	<p>APPLICANT REFERENCE: POH-</p> <p>LOCATION ADDRESS: Marine Corps Base Hawaii Box 63062 (Environmental) Kaneohe Bay, HI 96863</p> <p>TAX MAP KEY: (1) 4-4-08:001</p>	<p>PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall</p> <p>IN: Kaneohe Bay</p> <p>NEAR/AT: End of Sumner Road @ W end of Base</p> <p>COUNTY: Honolulu</p> <p>STATE: Hawaii</p> <p>SHEET #1 OF 11</p> <p>DATE: 06-08-13</p>
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Buildings
1372 & 1640

Boat Ramp
Lat 21o27'00"N
Lon 157o46'40"W

Storage Shed

Building
1388

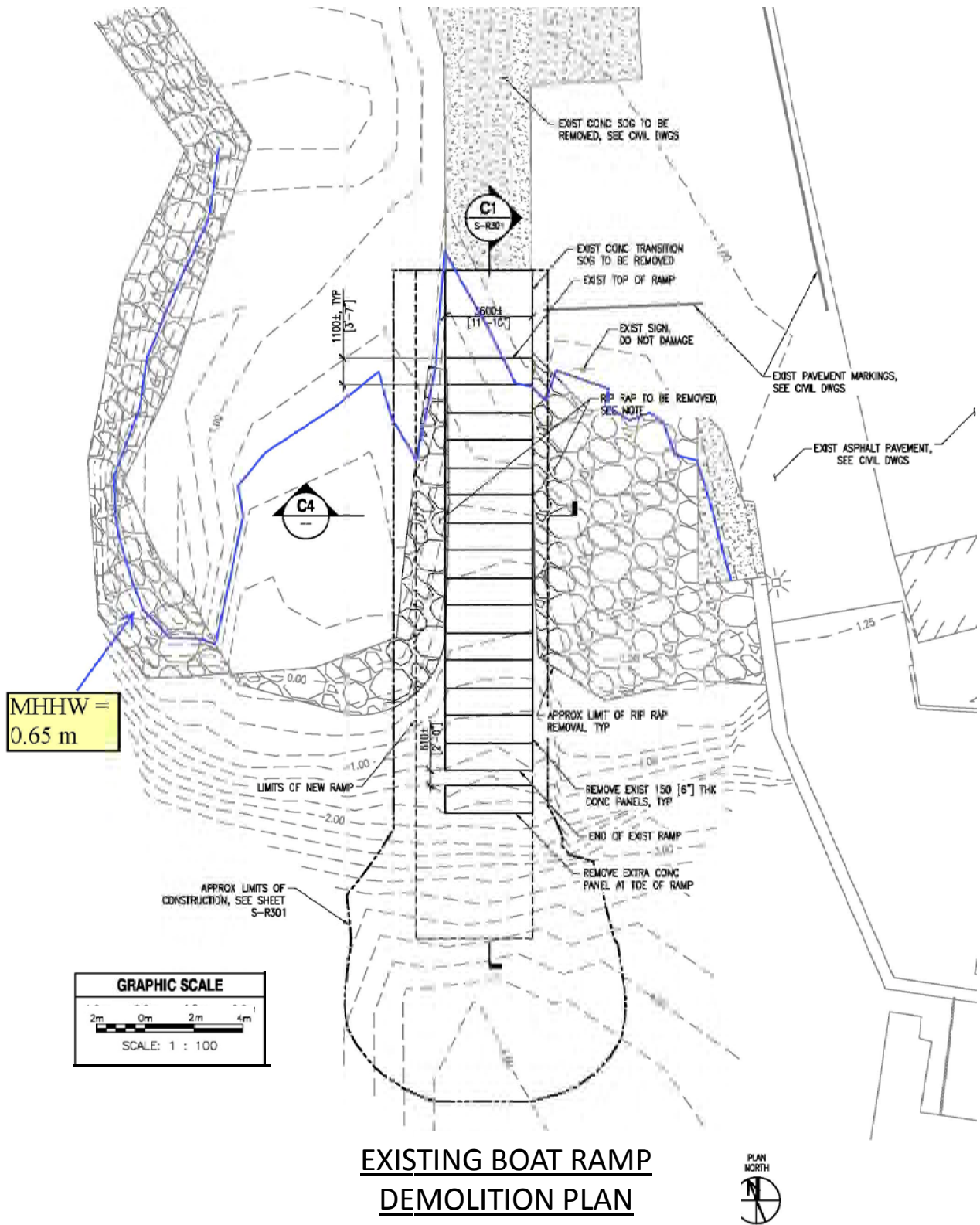
Drainage Outfall
Lat 21o26'58"N
Lon 157o46'36"W

Kaneohe Bay

VICINITY MAP

Source: ©2008 Google Earth. August 2004.

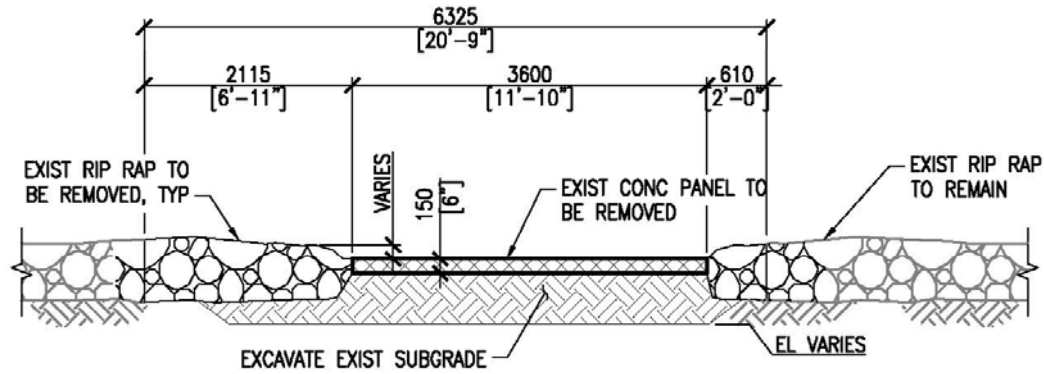
REFERENCE: POH-
APPLICANT: Marine Corps Base Hawaii
PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
SHEET #2 OF 11
DATE: 06-08-13



**EXISTING BOAT RAMP
DEMOLITION PLAN**



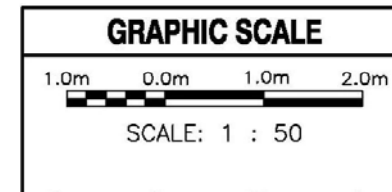
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 APPLICANT: Marine Corps Base Hawaii
 PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
 SHEET #3 OF 11
 DATE: 06-08-13



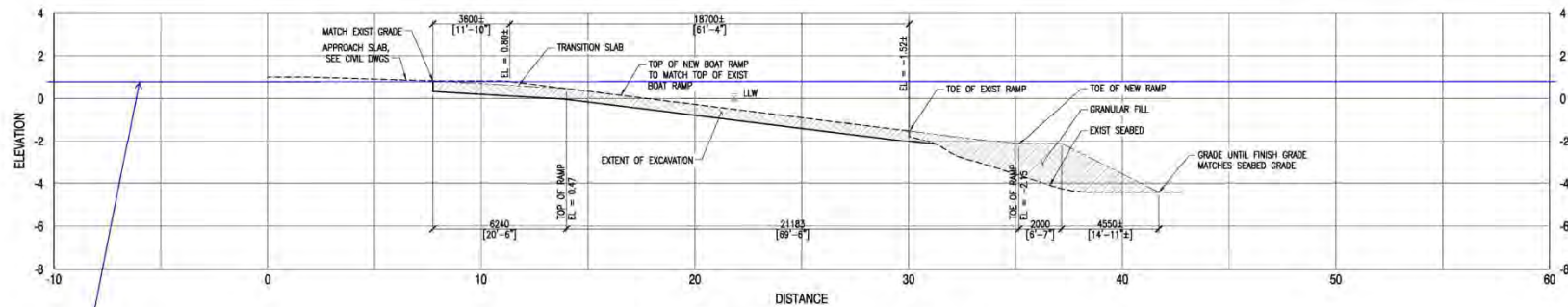
**EXISTING BOAT RAMP
DEMOLITION SECTION**

NOTES:

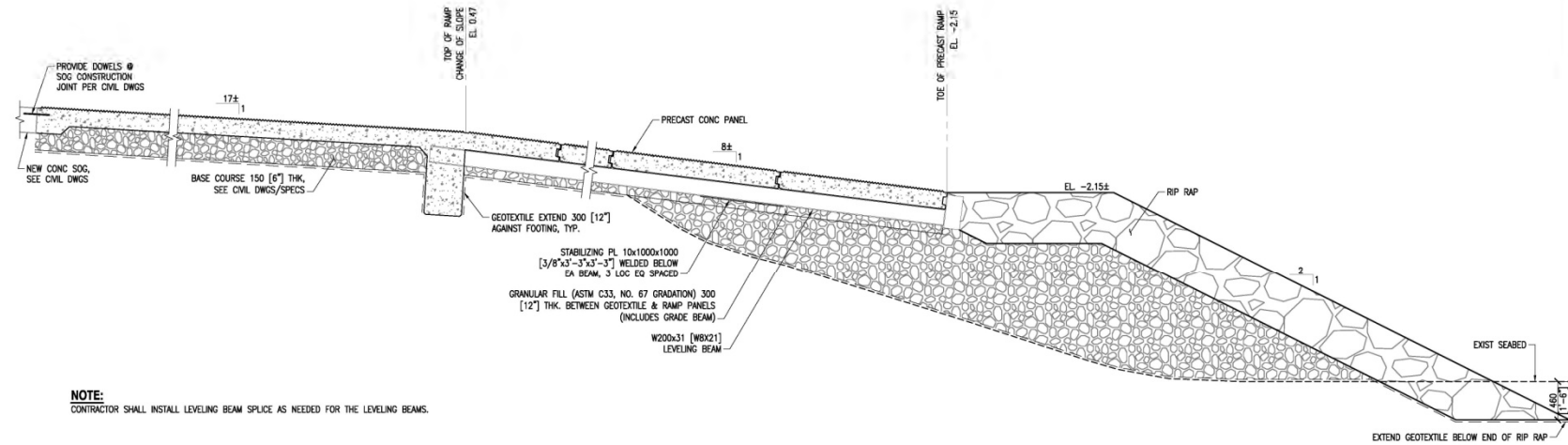
1. EXISTING RIP RAP CONSTRUCTION SHALL BE LIMITED TO HAND TOOLS ONLY. THE CONTRACTOR SHALL NOT DAMAGE EXISTING CORAL.
2. SALVAGE RIP RAP FOR USE ON RECONSTRUCTED BOAT RAMP.



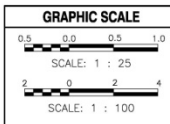
<p>REFERENCE: POH- APPLICANT: Marine Corps Base Hawaii PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall SHEET #4 OF 11 DATE: 06-08-13</p>
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SECTION - DEMOLITION & EXCAVATION C1
S-R101

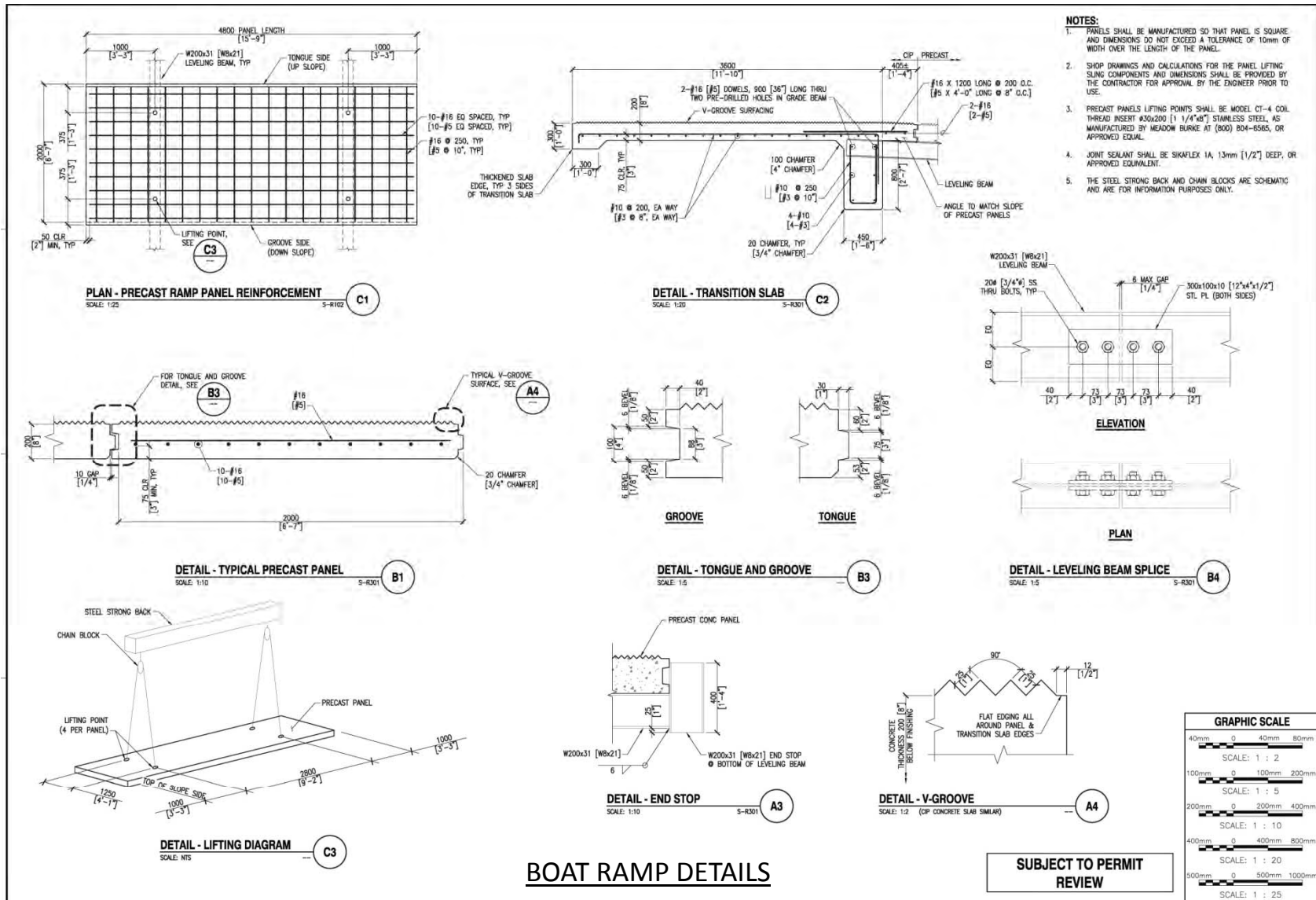


SECTION - BOAT RAMP A1
S-R102

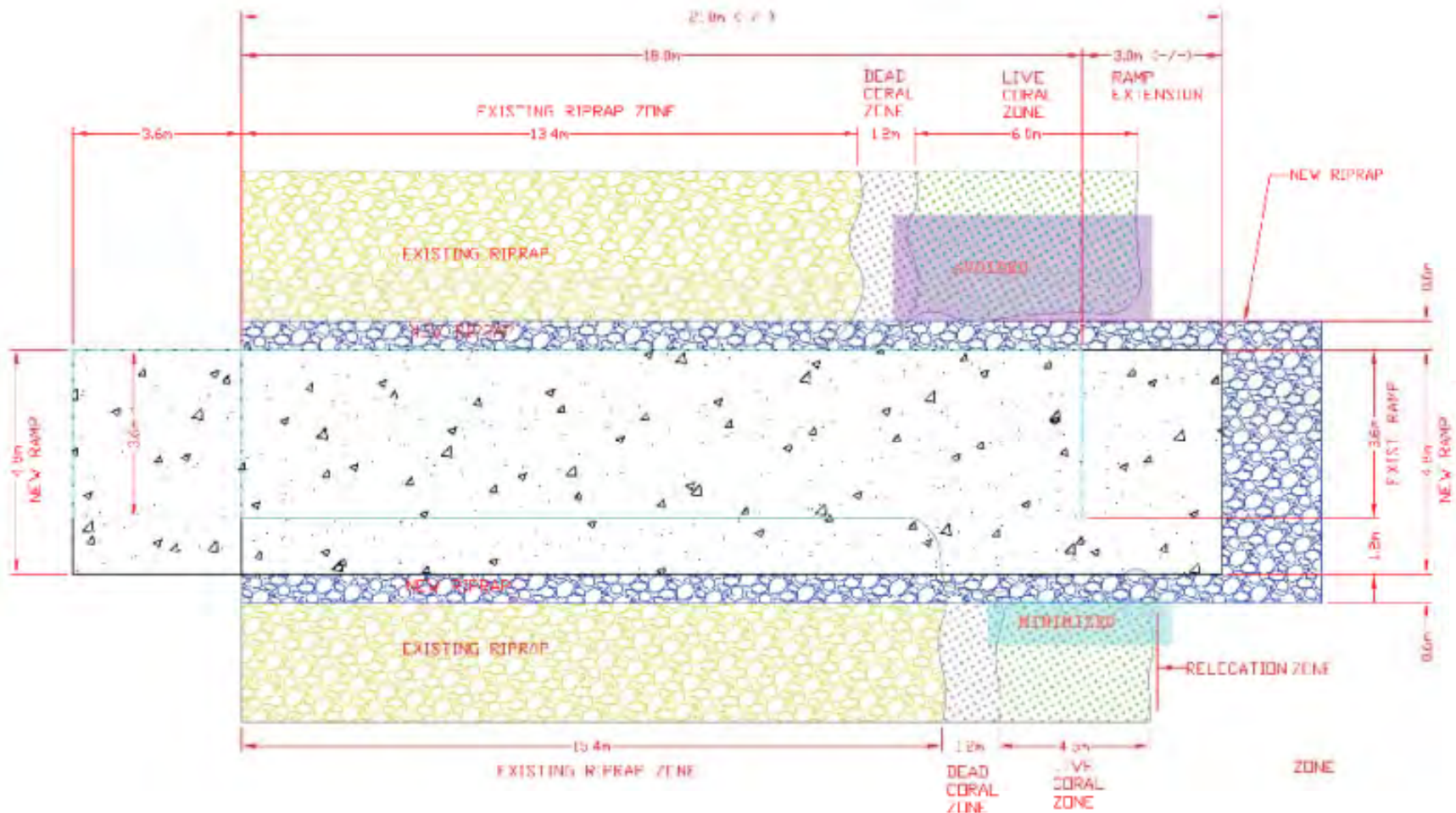


BOAT RAMP SECTIONS

REFERENCE: POH-
 APPLICANT: Marine Corps Base Hawaii
 PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
 SHEET #5 OF 11
 DATE: 06-08-13

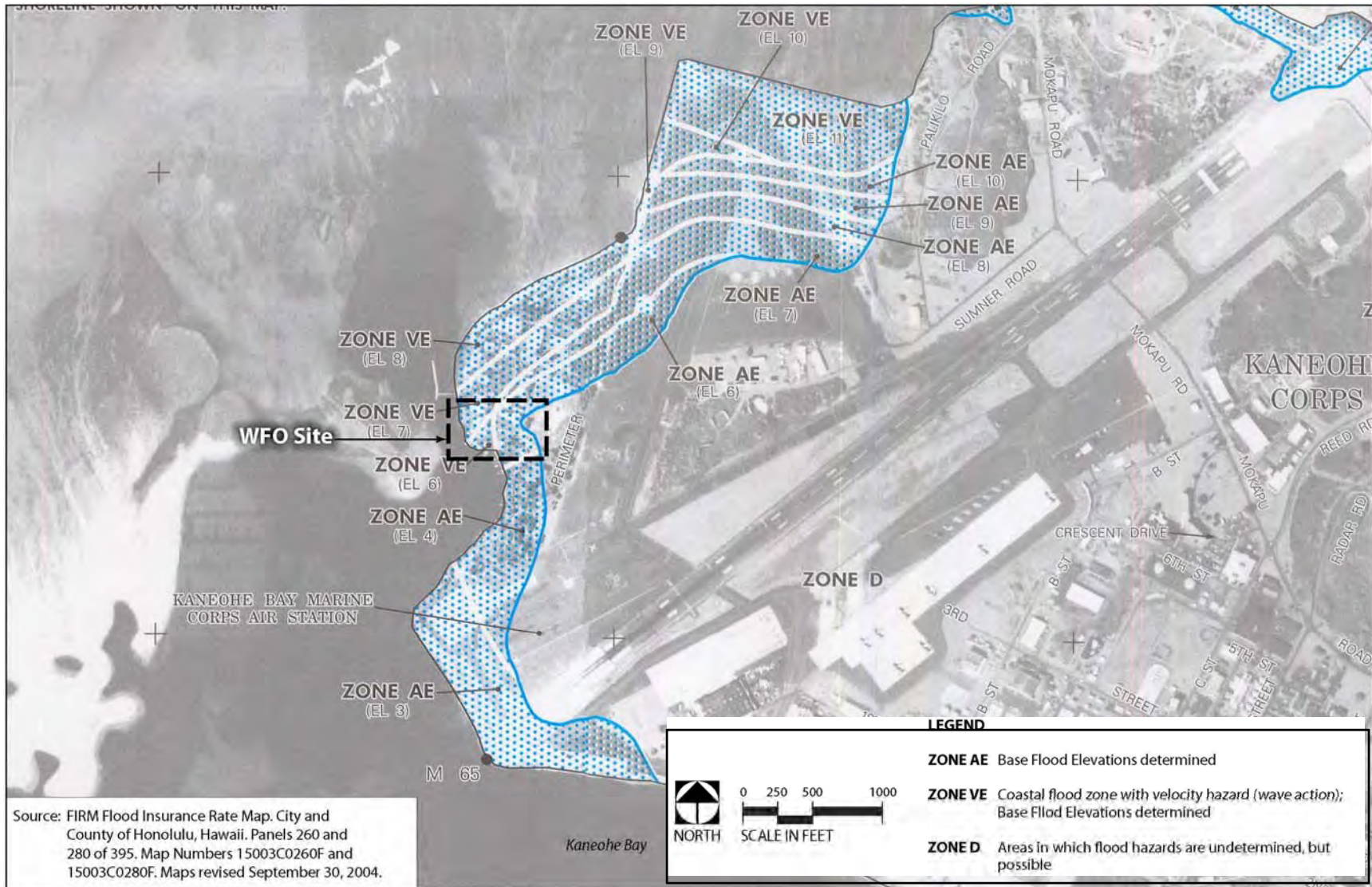


REFERENCE: POH-
 APPLICANT: Marine Corps Base Hawaii
 PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
 SHEET #6 OF 11
 DATE: 06-08-13



SCHEMATIC CORAL LOCATION MAP
 (Based on a preliminary design. See Sheets 3- 5 for actual design dimensions)

REFERENCE: POH-
 APPLICANT: Marine Corps Base Hawaii
 PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
 SHEET #10 OF 11
 DATE: 06-08-13



FLOOD ZONE MAP

REFERENCE: POH-
 APPLICANT: Marine Corps Base Hawaii
 PROPOSED: Replace Existing Boat Ramp and Collapsed Storm Drainage Outfall
 SHEET #11 OF 11
 DATE: 06-08-13



UNITED STATES MARINE CORPS

MARINE CORPS BASE HAWAII
BOX 63002
MCBH KANEOHE BAY, HI 96863-3002

IN REPLY REFER TO:
5090
Ser LE/073
5 Mar 2009

Mr. Abbey Seth-Mayer, Director
Office of Planning/Coastal Zone Management Program
Department of Business, Economic Development and Tourism
P.O. Box 2359
Honolulu, Hawaii 96804

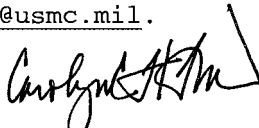
Subject: COASTAL ZONE MANAGEMENT ACT (CZMA) NEGATIVE DETERMINATION NOTICE FOR PROPOSED WATERFRONT OPERATIONS DEPARTMENT (WFO) MODERNIZATION AT MCB HAWAII KANEOHE BAY, HAWAI'I

In accordance with the Hawai'i Coastal Zone Management Program (CZMP), Marine Corps Base (MCB) Hawaii, Kaneohe Bay, is notifying your office of our determination that a Federal Consistency Review is not required for the subject project.

The U. S. Marine Corps proposes to demolish four existing inadequate buildings and construct a new Waterfront Operations Facility containing a Quarterdeck, a Disaster Response Emergency Operations Center, office spaces, training and lounge room, bunk rooms and head facilities. Construction will also include a maintenance building containing a general maintenance shop, painting and welding shops, equipment and material storage rooms, storage for oil spill containment booms, and a battery room. Supporting facilities include a boat ramp with security lighting, elevated water tank and fire pump building, and flag pole. The project location is shown at enclosure (1). The project site plan is at enclosure (2).

The proposed project will be situated entirely on Federal lands, which are excluded from the Hawai'i Coastal Zone. A National Pollutant Discharge Elimination System permit will be obtained from the Hawai'i Department of Health for general construction. A U. S. Army Corps of Engineers Section 404 Permit and State of Hawai'i Section 401 Water Quality Certification will be obtained for in-water construction of the boat ramp. All appropriate mitigation measures and best management practices will be implemented. Accordingly, no direct or indirect adverse effects on any use or resource of the State coastal zone are anticipated.

If you have any questions, please contact Mr. Ron Yamada at (808) 257-6920 extension 87, or by email at ron.yamada@usmc.mil.

fn 

D. M. HUDOCK
Major, U.S. Marine Corps
Director, Environmental Compliance
and Protection Department

Enclosures: (1) Project Location Map
(2) Site Plan

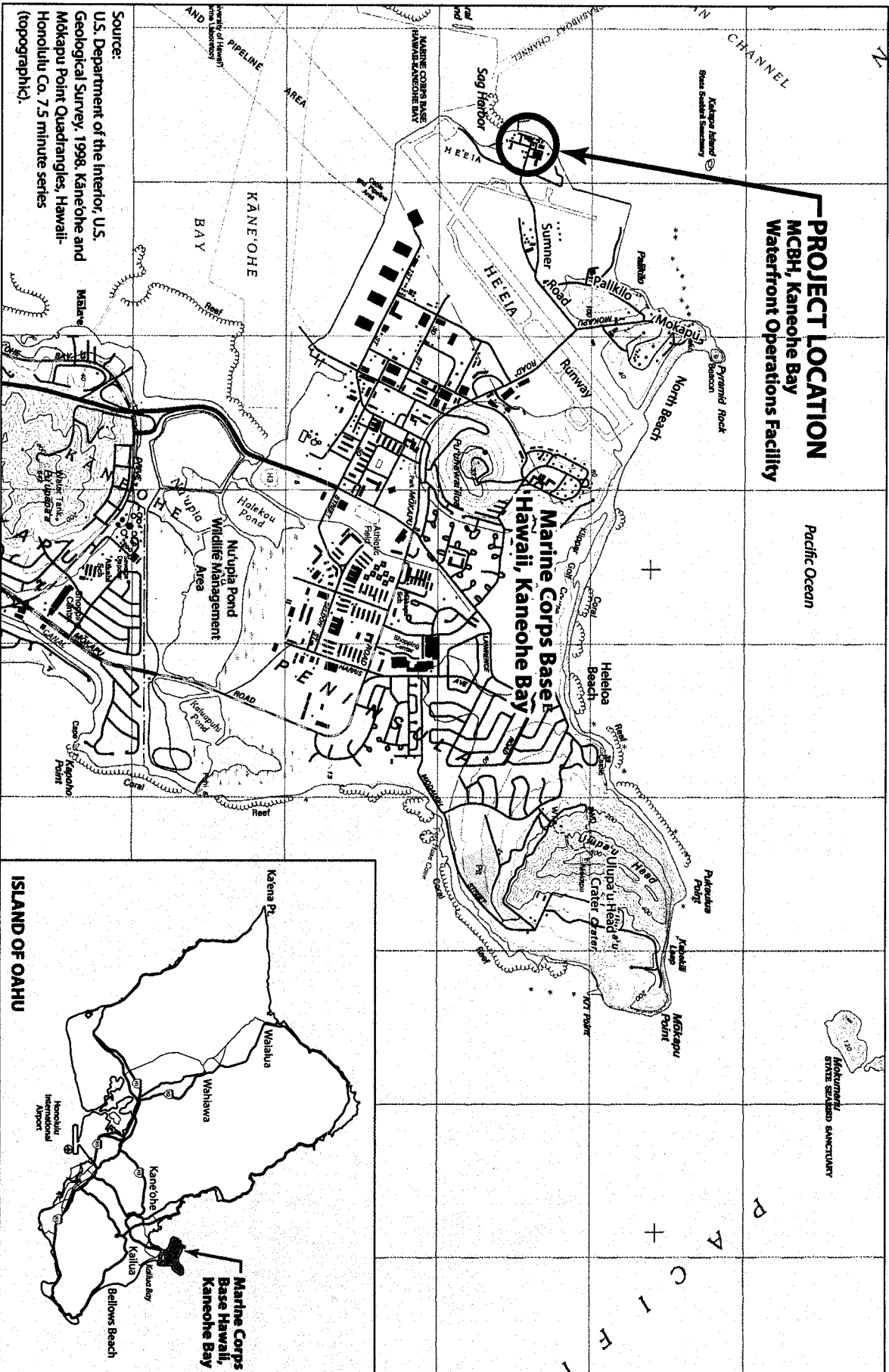
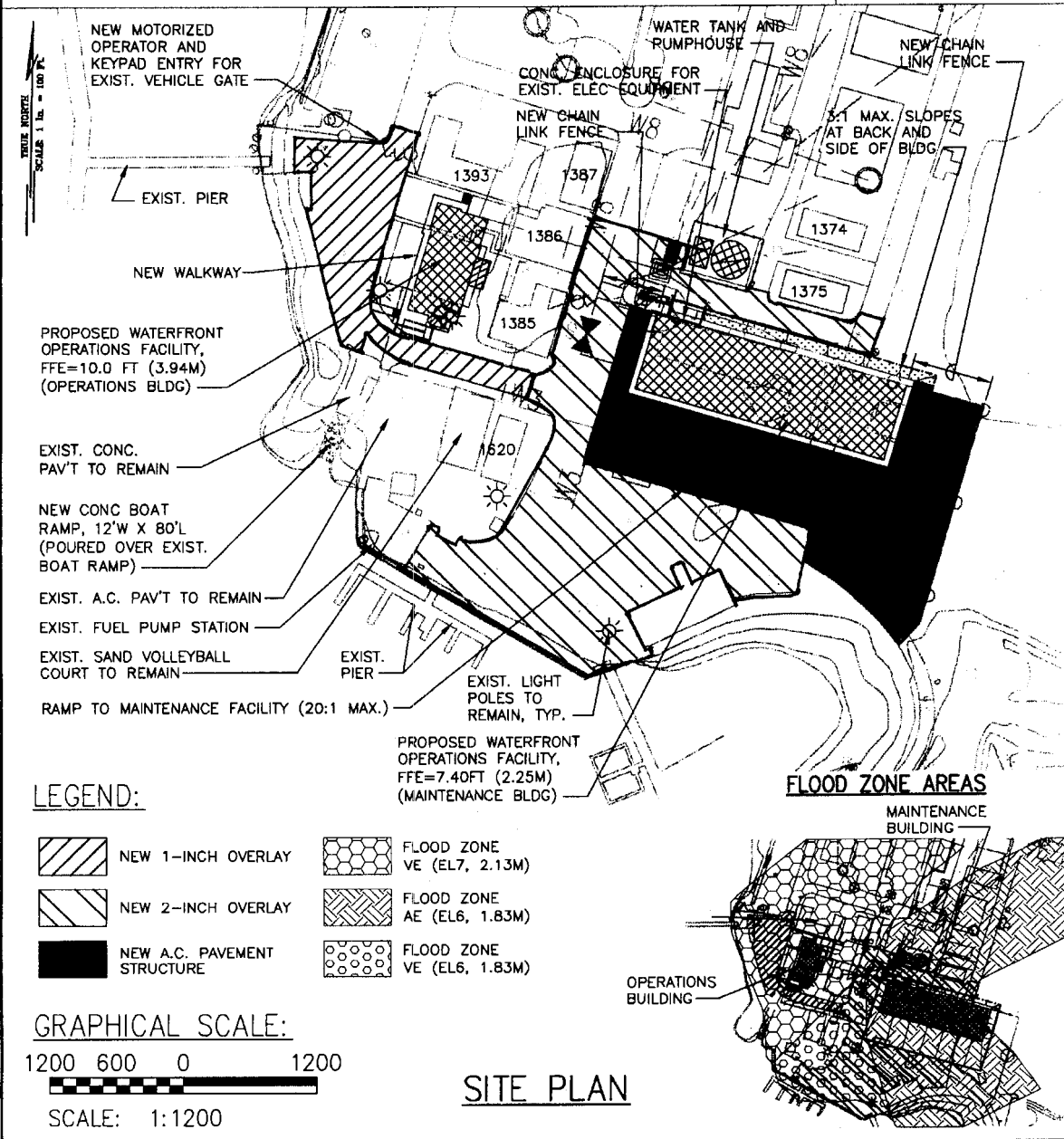


Figure 1-1
PROJECT VICINITY

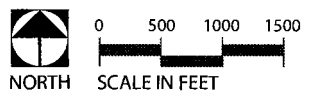
©2009 Belt Collins Hawaii Ltd. K 2005J82.0116/001-1 kya2009Feb05 2

1. COMPONENT NAVY	FY <u>2010</u> MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 JAN 2008
3. INSTALLATION AND LOCATION MARINE CORPS BASE HAWAII, KANEOHE BAY KANEOHE, HAWAII		
4. PROJECT TITLE WATERFRONT OPERATIONS FACILITY	5. PROJECT NUMBER P816	



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**Figure 1-2
SITE PLAN**
Waterfront Operations Facility
Marine Corps Base Hawaii, Kaneohe Bay
February 2009

ENCLOSURE(2)



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, PACIFIC
258 MAKALAPA DR., STE. 100
PEARL HARBOR, HAWAII 96860-3134

NMFS/PIRO

MAR 18 2013

Received

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Ser Ev2/86

March 14, 2013

Michael Tosatto
Habitat Conservation Division
NOAA/NMFS Pacific Island Regional Office
1601 Kapiolani Blvd, Ste 1110
Honolulu, HI 96814

Dear Mr. Tosatto,

**SUBJECT: EFH CONSULTATION UNDER THE MAGNUSON-STEVENSONS FISHERY
CONSERVATION AND MANAGEMENT ACT FOR EXTENSION OF BOAT
RAMP IN SUPPORT OF THE WATERFRONT OPERATIONS, MARINE CORPS
BASE HAWAII, KANEOHE BAY**

This letter is a request by Naval Facilities Engineering Command (NAVFAC) to the National Marine Fisheries Service (NMFS) within the National Oceanic and Atmospheric Administration (NOAA) for Essential Fish Habitat (EFH) consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act of 1976. NAVFAC Pacific is authorized by the U.S. Marine Corps (USMC) to conduct consultation regarding the expansion of the Waterfront Operations Facility on Marine Corps Base Hawaii (MCBH) in Kaneohe Bay, Oahu.

NAVFAC Pacific prepared an Environmental Assessment (EA) to evaluate the potential for environmental impacts from the proposed expansion of the Waterfront Operations facility on MCBH. A small area of EFH will be adversely impacted by the proposed action; however, avoidance and minimization efforts have been taken to reduce impacts to marine resources to the greatest extent practicable. Enclosure (1) provides information pertaining to the project and the expected impact to the coral within the footprint. Avoidance and minimization efforts, along with plans for coral relocation, have also been outlined. Enclosure (2) is a paper copy of Appendix A from the EA that evaluates the marine resource impacts from this project. Enclosure (3) is an electronic copy of the EA for your convenience.

5090
Ser Ev2/86
March 14, 2013

If you have any questions, please contact Ms. Kate Winters of our Environmental Planning Product Line at (808) 472-1431.

Sincerely,



KAREN SUMIDA
Business Line Manager
Environmental

- Enclosure:
1. Essential Fish Habitat Consultation: Waterfront Operations Facility Boat Ramp Replacement at MCBH
 2. Appendix A - Assessment of the Marine Environment in the Vicinity of the Waterfront Operations Facility MCBH & Jokiel letter summarizing Observations
 3. Environmental Assessment – Waterfront Operations Facility, MCBH CD)

ENCLOSURE 1

Essential Fish Habitat Consultation:

Waterfront Operations Facility Boat Ramp Replacement

Marine Corps Base, Hawaii

Background

Marine Corps Base Hawaii (MCBH) has a project to build a facility that consolidates the Waterfront Operations (WFO) Department located on the western shoreline of Marine Corps Base Hawaii (MCBH) at Kaneohe Bay on the southeastern coastline of the island of Oahu (Figure 1 and 2). The on-land construction is underway. The proposed in-water work addressed in this letter will include increasing the size of the existing boat ramp. The existing ramp is composed of a corrugated concrete pad that is approximately 60 feet in length. The dry portion of the ramp is approximately 20 ft in length (at low tide), with the remaining 40 ft. submerged. At present, this ramp does not represent an optimal facility for launching and retrieving boats from trailers, which is an important aspect for efficient operation of the Department, as well as other units within MCBH. In order to improve these capabilities, it is proposed to construct a new ramp in the same location as the existing ramp. The new ramp is expected to extend 3 m (15 ft) farther seaward than the existing ramp, as well as an increase in width by four feet. Rip rap will be placed around the ramp to stabilize it.



Source:
U.S. Department of the Interior, U.S.
Geological Survey, 1998 Kaneohe and
Makapu Point Quadrangles, Hawaii
Hawaii 1:50,000 7.5 minute series
topographic.

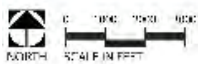


Figure 1
PROJECT VICINITY
Waterfront Operations Facility
Marine Corps Base Hawaii, Kaneohe Bay
November 2000



Figure 2
AERIAL VIEW OF WFO SITE
SHOWING AFFECTED STRUCTURES

Waterfront Operations Facility
Marine Corps Base Hawaii, Kaneohe Bay
November 2009



NORTH | NOT TO SCALE

Project Description

The boat ramp extension project includes:

1. Removal of corals from the impact area for relocation to surrounding areas
2. Precision excavation of the limestone rock to ensure minimal impact to coral
3. Removal of existing boat ramp
4. Minimal excavation to level out substrate for new ramp
5. Placement of new ramp
6. Placement of stabilizing rip rap

Affected Species – Coral

In November 2008, Marine Research Consultants conducted a survey of the marine life in the vicinity of the WFO site. No occurrences of federal-listed threatened or endangered marine species were recorded. The area immediately around the boat ramp was reported to consist of a revetment of bare boulders laid on a rubble base, which transitions into a limestone bench, some of which is colonized by living corals. The ramp itself has not been colonized by any corals. The report recommended relocating the coral colonies likely to be affected by construction activities. The complete survey report can be found in the EA, Appendix A.

In May 2009, Dr. Jokiel of Hawaii Institute of Marine Biology (HIMB) conducted a visual inspection of the corals around the boat ramp. Dr. Jokiel confirmed Marine Research Consultants' opinion that corals relocated would have a high chance of survival, saying that the excellent water quality and protection from wave action in the area constituted ideal conditions. The letter reporting his opinions is found in the EA, Appendix A.

Consultation had been initiated with NMFS and US Fish and Wildlife Service (USFWS) on January 14, 2009. Representatives from NMFS, USFWS, Environmental Protection Agency (EPA) and MCBH conducted a site visit on 22 April 2009. Another site visit with representatives from the USFWS, NOAA, Department of Land and Natural Resources (DLNR) and MCBH was conducted on 22 November 2011, where potential ESA proposed corals were discussed. An in-water site visit was conducted on 27 January 2012, where representatives from USFWS, NMFS, and MCBH were able to get in the water and assess the coral present. These agencies expressed concern about the impact to natural coral reef on sides of the ramp, in particular the east side. Minimization and avoidance measures were encouraged.

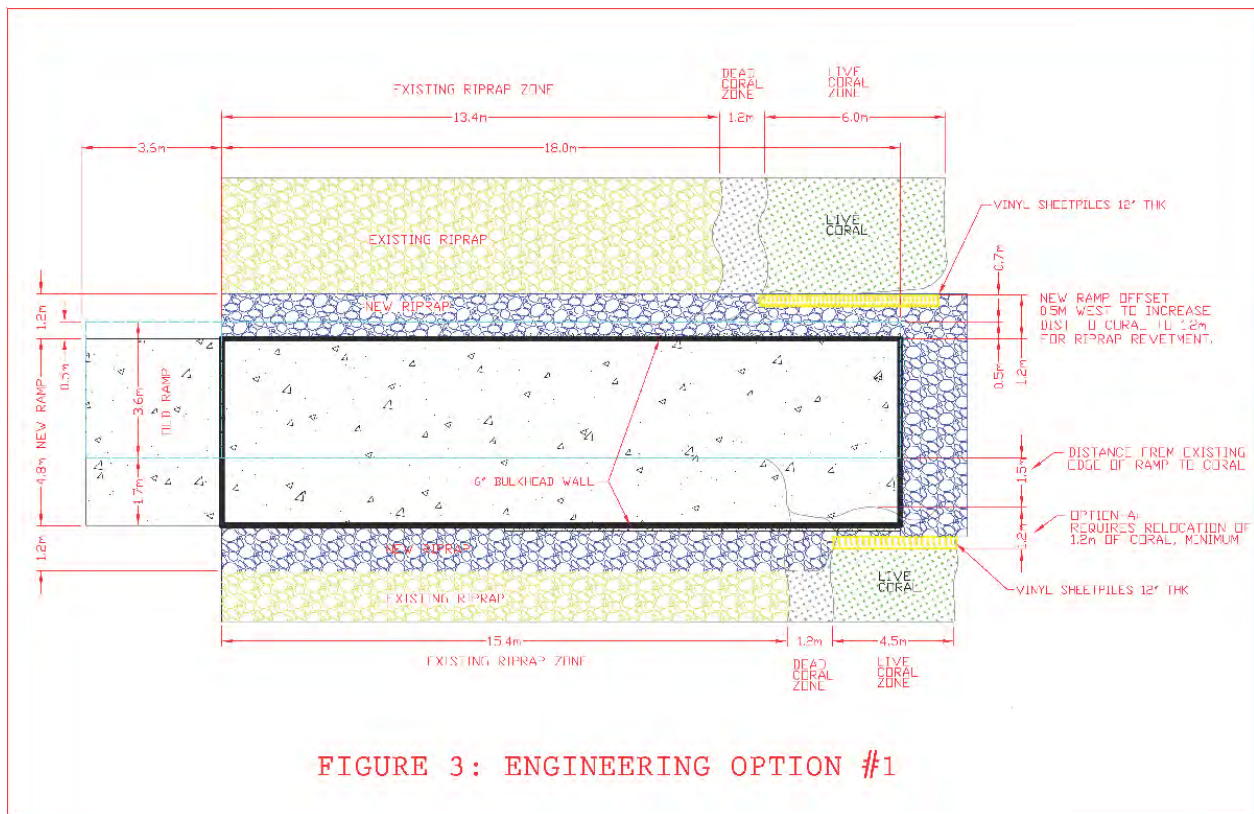
Avoidance and Minimization

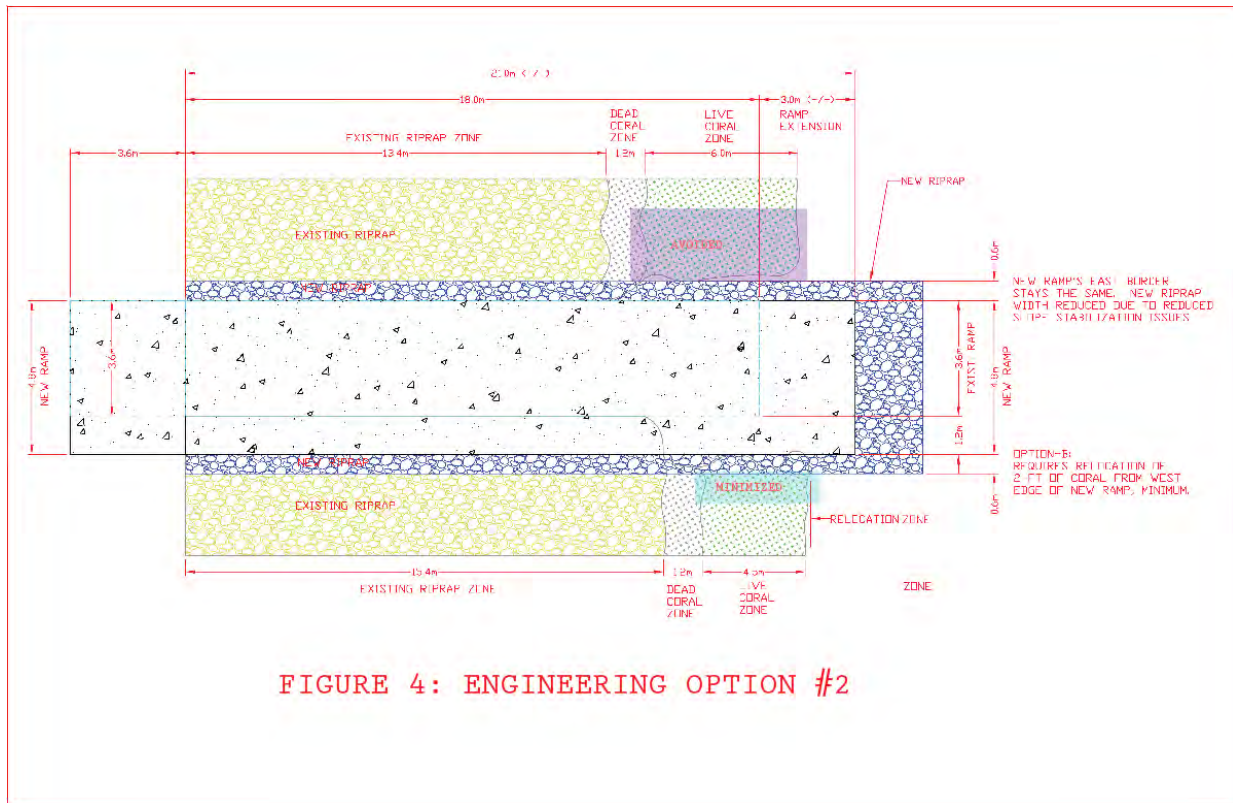
MCBH and NAVFAC PAC biologists provided input into the initial design process to reduce the impact of the project. The intent was to minimize damage to the greatest extent practicable, by reducing the amount of in-water work and eliminating the need for pile-driving. The length of the boat ramp was minimized by placing the ramp approach as far inland as possible. Pre-cast concrete slabs were required to minimize the amount of in-water construction and disturbance.

The area of potential effect was initially estimated to be approximately 470 square feet in the planning stages of this project. When the design-build contract was awarded, the area to be

disturbed that had coral cover was estimated to be between 11 and 43 square feet.

After the in-water assessment with the resource agencies in January 2012, there was concern for the natural coral habitat, particularly on the east (dock) side of the ramp, which was previously not identified to the designers. The Contractor's Design Engineers were then asked if the dock side coral could be avoided completely, thus keeping impacts to coral on one side instead of both sides of the ramp. After further explanation of the biology of coral as well as an in-water site visit with the engineers, they came up with two new options (Figures 3 and 4). Based on site visits, it was determined that it was more important to minimize disturbance at the sides of ramp, as opposed to the end of the ramp, since there was little to no growth at the end of the ramp. Therefore, the preferred option was to not change the slope of the ramp, which would allow for a narrower footprint with no expansion towards the dock side (Figure 4). The Contractor will provide additional installation measures around the dock side of the ramp, such as barriers and silt curtains, to eliminate any impact to the coral. The revised design and modified construction measures will result in nearly 50% greater avoidance and further minimization of excavation.





We are also looking into contracting a company to do precision cutting of the coral on the seaside of the ramp, instead of using the large construction claw. The more precise cutting will change the impact from 10ft to +/-6ft on the side opposite the dock, resulting in additional avoidance.

Silt curtains and other BMPs would be used to prevent sediments from entering the water column and settling on the nearby reef. In addition, construction and demolition activities would be timed to coincide with low tide to minimize short-term water disturbance and sediment deposition. In-water activities would also be scheduled to avoid the summer coral spawning season.

For further minimization, coral relocation was assessed. Navy Biologists quantified the coral that will be impacted. Methods included rating the potential of each piece of coral for relocation (1-not possible, 2-not likely, 3-possible, 4-likely), as well as measuring its longest axis, and categorizing the substrate it was growing on (riprap, rubble, natural). The amount of coral for each species that was on natural (or rubble) substrate was then compared to the amount of coral that could be relocated. The area for an individual coral head was calculated using the longest axis measurement as diameter to a circular coral head. This calculation provides highly conservative values. It is expected that 10-35% of the coral will be relocated, with a potential for up to 50-60% (Table 1). This will be determinant on the way each coral maintains its structure at time of relocation and excavation.

Table 1: Estimates for coral impact including number and size of colonies, original and current area of impact, minimum and potential amount of coral to be relocated, and potential and maximum unavoidable coral impacted.

(cm)	Montipora flabellata	Montipora capitata	Porites compressa	Pocillopora damicornis	ALL SPECIES
<10	-	1	3	3	7
10-20	1	66	34	-	101
20-40	-	30	5	-	35
40-80	-	9	5	-	14
80-150	-	2	1	-	3
total colonies	1	108	48	3	160
impacted natural reef* (m2)	0.02	6.32	2.32	0.01	8.67
minimum coral relocation (m2)	0.00	0.58	0.18	0.00	0.76
potential coral relocation (m2)	0.00	2.46	0.54	0.01	3.01
maximum unavoidable impact (m2)	0.02	5.74	2.14	0.01	7.91
potential unavoidable impact (m2)	0.02	3.86	1.78	0.00	5.66
original area of impact (m2)	0.03	9.48	3.48	0.02	13.01

* Assumes longest axis as diameter of circular coral head; highly conservative values
Original footprint has been reduced by 35% (avoidance).
An additional 10-35% relocation expected (potentially 50-60%).
Unavoidable natural reef impact will be less than 5 and no more than 8 square meters.

Note that the compensation was done as a direct comparison (8 cm piece of *M. capitata* for an 8 cm piece of *M. capitata*). When size did not match up, a larger size coral was used to match a smaller coral (i.e. 10 cm piece for a 7 cm piece, or five 8cm pieces for a 20cm piece).

Relocation

The relocation of corals would be carried out by divers trained to carefully count, identify, label, and move corals a very short distance (probably less than 75 feet) to the nearby reef where they would be secured to prevent subsequent movement. The corals would not be removed from the water at any time, would be kept at the same depth during relocation to avoid stress, and would be moved to a non-marginal habitat to increase likelihood of survival.

Transplanting Methods - Removal and Attachment Methodologies

All transplanting operations will be carried out at high tide with a silt curtain installed along the perimeter. Coral heads will be transplanted in open sided baskets by workers swimming from the removal site to the transplant site, and transplanted delicately by hand where colonies

are larger than the baskets. During the transplanting procedure coral heads will remain submerged and will not be exposed to the atmosphere at any time.

Removal and transplantation of corals will occur prior to construction. The following protocol/guidelines should be followed during the removal process:

- Efforts to prevent damage to the edges of corals.
- If possible, remove the entire coral colony in one piece.
- Where removal of the entire colony is not possible, the colony will be partially removed to maintain the phenotypic genetic composition of corals from the project site (biologists to make judgment if fragments can be relocated).
- Avoid touching coral tissue.

Prior to transplant efforts, divers should assess the receiving area and look for specific places of available hard surface that are suitable for transplantation, and mark with floats/tags. A biologist will provide guidance on identifying specific relocation spots within the receiving sites. Once the transplant spots within the recipient site have been identified, the following protocol/guidelines should be followed during the reattachment process:

- Similar species of corals should be clustered in close proximity to reduce species competition and for easier differentiation between transplanted corals and corals that currently exist at the recipient site.
- Wedge and secure detached coral into interstitial spaces.
- Install markers (physical/non-chemical) to assist with future identification for monitoring.

A map of the transplanted colonies will be made to be used with future monitoring. A reference photograph of each relocated coral will be taken and transplanted corals will be identified using tags. Reference corals will be established and similarly mapped.

The transplantation and construction will take place to avoid peak spawning times. Peak reproduction of Hawaiian corals occurs during summer months, although reproduction continues year round for some brooders. *Montipora capitata* spawns May to September, from 20:45 to 22:30 on the new moon's 1st quarter. *Porites compressa* spawns June to September, from 23:00 to 01:30 on the full moon's 3rd quarter. *Pocillopora damicornis* spawns year-round, with all phases of the moon. *Montipora flabellata* spawns July to September, from 21:00 to 22:00. The majority of larvae are released at night, but some are released throughout the day.

Transplantation Monitoring

To assess the success of the transplanted corals, reference control corals located within the transplant sites will be similarly monitored and used for comparison. For each coral transplant, the species, depth, and unique identification (ID) code will be recorded. A baseline (post-transplantation) monitoring report will summarize the transplantation effort and document the baseline conditions for future monitoring events. The baseline report will include the following components:

- The total number of coral colonies transplanted, and ideally what proportion of the total colonies from the footprint it represents.
- A map of the location of each transplanted coral
- Information on each transplanted coral, including its size, general condition, coral ID code, depth of the transplant site, issues or concerns encountered during relocation/reattachment
- A photograph of each relocated coral colony (sometimes a single photo for multiple smaller transplanted colonies).

Subsequent monitoring events of the transplanted corals will occur at 2 weeks, 6 months, 1, 2, and 5 years post-transplantation. The transplanted corals will be revisited and assessed for the following information:

- Survival
- Measurement of growth/recession of coral tissue
- Condition of structural attachment; has coral attached to the substrate
- Qualitative description of health; bleaching, disease, evidence of predation, bio-fouling.

Conclusion

The intent of this letter requesting EFH consultation is to provide background on the project and outline the planned minimization and avoidance measures to reduce damage, to the greatest extent practicable, to corals in the project area. Through modifications to the Waterfront Operations' construction plan and coral relocation efforts, the project footprint has been reduced by ~75%. Redesigning the construction plan allowed for avoidance of the coral on the dock side of the ramp (~50% reduction), while adjustments to ramp slope and precision cutting for excavation reduced the footprint another ~25% sea side of the ramp. Coral transplantation will allow us to minimize impacts further, potentially being able to relocate 25-60% of the remaining impacted coral.

NAVFAC Pacific would like to consult on the minimization and avoidance measures outlined in the letter above. After various efforts of coordination between USFWS, NMFS, and DLNR, this letter is intended to initiate consultation prior to submittal of the permit application through the U.S. Army Corps of Engineers.