PUBLIC NOTICE

US Army Corps of Engineers, Honolulu District

Regulatory Office (CEPOH-RO)
Building 230
Fort Shafter, Hawaii 96858-5440

Public Notice Date: **March 1, 2016**
Expiration Date: **March 31, 2016**
Permit File Number: **POH-2015-00109**

FEDERAL PUBLIC NOTICE

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

APPLICANT:
State of Hawaii
Department of Transportation, Harbors Division
Attention: Ford Fuchigami
869 Punchbowl Street, 5th Floor
Honolulu, Hawaii 96813

WATERWAY AND LOCATION OF THE PROPOSED WORK: The proposed project is located in harbor waters adjacent to the northeast face of Pier 2, Kahului Harbor, Kahului, Island of Maui, Hawaii.

PROPOSED PROJECT AND PURPOSE: Hydraulic dredge 2,800 cubic yards of accumulated sediments from within a 2,325 square yard area along 400-feet of the northeastern face of Pier 2 at Kahului Harbor with disposal of dredged material at the U.S. Environmental Protection Agency (USEPA)-approved Kahului Ocean Dredge Material Disposal Site (ODMDS) located 5.6 nautical miles offshore. Dredging operations proposed by the State of Hawaii Department of Transportation, Harbors Division will be performed by the U.S. Army Corps of Engineers' (Corps) *Essayons* hopper dredge concurrent to the greater federal project involving maintenance dredging at 5 commercial harbors across the State of Hawaii, including Kahului Harbor.

Additional information regarding dredging operations, best management practices and project drawings are attached to this notice for review.

AUTHORITY: A DA permit is required for the proposed action pursuant to:

☒ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) - To perform work in or affecting navigable waters of the United States.

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

☒ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413) - Transport dredged material for the purpose of dumping it into ocean waters. 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.

WATER QUALITY CERTIFICATION: The applicant is actively coordinating the potential impacts to water quality with the State of Hawaii Department of Health, Clean Water Branch in accordance with Section 401 of the Clean Water Act. The results of that coordination will be applied to the proposed action.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: The proposed activity will affect land or water uses in the Coastal Zone. Under Section 307(c)(3) of the Coastal Zone Management Act of 1972, as amended by 16 U.S.C. 1456(c)(3), the Corps may not issue a permit for the described work until the applicant obtains a Federal Consistency Concurrence from the State of Hawaii, Department of Business, Economic Development, and Tourism – Office of Planning.

CULTURAL RESOURCES: Pursuant to Section 106 of the National Historic Preservation Act (NHPA), an assessment of effects to historic properties and cultural resources was completed for the greater federal project by the Honolulu District, Civil and Public Works Branch (CW). The area of potential effect, limited to harbor waters, encompasses the proposed maintenance dredging adjacent to Pier 2. In a letter dated December 18, 2014, the State of Hawaii Historic Preservation Division concurred with the CW's determination that no historic properties would be affected by the proposed action. Accordingly, requirements under Section 106 of the NHPA have been met and further consultation with the State Historic Preservation Division is not required for the proposed action.

ENDANGERED SPECIES: Pursuant to Section 7 of the Endangered Species Act (ESA), federal agencies must consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) on any action that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. The Honolulu District CW branch is actively engaged in Section 7, ESA consultation with NMFS for the greater federal dredging project. The ESA Action area for the greater federal dredging project encompasses the area adjacent to Pier 2, Kahului Harbor. The results of that consultation will be applied to subject proposed action. A permit for the proposed action will not be issued until the consultation process is completed.

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), which requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect EFH. The Honolulu

District CW branch is actively engaged in consultation with NMFS for potential impacts to EFH resulting from the greater federal dredging project. The MSA Action area for the greater federal dredging project encompasses the area adjacent to Pier 2, Kahului Harbor. The results of that consultation will be applied to subject proposed action. A permit for the proposed action will not be issued until the consultation process is completed.

FEDERAL EVALUATION OF APPLICATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among 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 Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to evaluate the direct, indirect, and cumulative impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. 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.

PUBLIC HEARING: Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state clearly and concisely, the reasons and rationale for holding a public hearing. The District Commander will then decide if a hearing should be held.

COMMENT AND REVIEW PERIOD: Comments on this public notice should be made in writing via conventional mail or e-mail. Comments will be accepted and made part of the administrative record and will be considered in determining whether it would be in the public interest to authorize this proposal. Conventional mail comments should be sent to

U.S. Army Corps of Engineers, Honolulu District
Regulatory Office [CEPOH-RO], Attn: J. Paahana
Building 230
Fort Shafter, Hawaii 96858-5440.

Alternatively, comments may be emailed to jessie.k.paahana@usace.army.mil. In order to be accepted, e-mail comments must originate from the author's e-mail account.

Both conventional mail and e-mail comments must include the DA permit number, **POH-2015-00109**, and the commentor's name, address, and phone number. All comments whether conventional mail or e-mail should be received by midnight on **March 31, 2016**.

PRIVACY & CONFIDENTIALITY: It should be noted that materials submitted as part of the permit application become part of the public record and are thus available to the general public under the procedures of the Freedom of Information Act. Submissions should not include any information that the submitter seeks to preserve as confidential.

If you have any questions about this project or the permit process, please contact Ms. Jessie Paahana via telephone at (808) 835-4107 or via email at jessie.k.paahana@usace.army.mil.

Michelle R. Lynch
Chief, Regulatory Office

Dredging Operations Additional Information:

A hydraulic hopper dredge, or trailing suction hopper dredge, is a self-propelled vessel with a section of the hull compartmented into sediment containment chambers called hoppers. This dredge uses pumps that entrain a slurry of water and dredged material from the seafloor through a long intake pipe called a dragarm. The dragarm is suspended over the side of the vessel fitted with a suction opening called a draghead. The draghead is a weighted intake device, which is dragged along the seafloor to help loosen the soil prior to suctioning. As the vessel moves the draghead over the dredge area, the suction velocity of the pumps generate the slurry that is deposited into onboard hoppers. Hopper dredges typically entrain more than 80 percent water during operations. When the slurry of water and dredged material is emptied into a hopper, the heavier entrained material is allowed to settle and the water on top is removed through a weir within the hopper discharged through a pipe extending 22 to 27-feet below the surface of the water to avoid creating a surface plume. When the hopper is filled, the pumps are disengaged, the dragarms are lifted off the bottom and the vessel travels to the ocean disposal site. The dredged material is discharged through the bottom of the ship by opening doors located in the bottom of each hopper.

The *Essayons* is 350 feet long sea going vessel, with a beam of 68 feet, a height of 126 feet, with a draft of 22 feet (light) and 27 feet (loaded). The *Essayons* hopper has a total volume of 6,000 cubic yards, with an average daily production of 43,000 cubic yards, although much lower production rates are expected for this project. Based on production from the 1999 maintenance dredging action for Hawaii, it will take approximately 30 minutes to fill the hoppers with dredged material and entrained water. The time to halt operations, “stow” the dragarms, steam to the ocean disposal site, open the hopper doors and release the sediment, and return to begin dredging again takes approximately 90 minutes. While the *Essayons* maximum speed is 13.8 knots light and 13.5 knots loaded, the vessel will travel to the disposal site and between harbors at a speed no greater than 10 knots, as a BMP during whale season. Based on the capacity and operational requirements, the *Essayons* is expected to make approximately nine trips each day from the harbor to the closest ODMDS. The *Essayons* will work 24-hours per day during dredging operations. During night dredging operations, per United States Coast Guard requirements, the vessel maintains the masthead light, stern light and normal running lights on the working decks. The *Essayons* does not anchor during regular operations and is not expected to anchor at any time during this action, except during emergency situations. In addition, the *Essayons* employs a 32-foot long support vessel as part of its regular operations for a variety of purposes, including regular water quality sampling during dredging operation and shuttling crew to and from shore. The support vessel is expected to operate 2 to 4-hours per day, generally in the vicinity of the *Essayons*.

Conservation Measures and Essayons Best Management Practices

Conservation measures, known as BMPs, that are employed as part of the normal operations for the Essayons are described here, as are additional relevant and appropriate BMPs previously developed by the USFWS, NOAA Fisheries, USEPA and

USACE. For all BMPs, compliance shall always be considered secondary to safety concerns. Specific instances where this is possible are noted under relevant BMPs. In addition, all workers associated with this project, irrespective of their employment arrangement or affiliation (e.g., employee, contractor) will be fully briefed on these BMPs and required to adhere to them for the duration of their involvement in this project.

Endangered Species Observers.

1. The USACE will provide two full-time observers for the entire project action, with one observer always on duty during the entire dredging action. This is considered 100% observer monitoring.
2. Endangered species observers will;
   a. Conduct visual sweeps for the presence of marine mammals and sea turtles during dredging, transits and ocean disposal,
   b. Visually monitor dredge material into the hopper and at the overflow screens, and
   c. Ensure that all BMPs are followed.
3. At the start of operations, and whenever there is new crew, the observers shall instruct all Essayons personnel associated with the project of the potential presence of sea turtles, dolphins and whales in the area, and the need to avoid collisions with and harming these animals.
4. Observers will be required to complete all appropriate forms as directed by the USACE, including ESA species sightings, dredge material monitoring forms, and any ESA-related incident forms (e.g., vessel strike, sea turtle take).
5. Observers' responsibilities are provided in the subsequent BMP categories. While monitoring of dredge material for sea turtle entrainment is the highest priority, other prioritization of responsibilities and time dedicated to each activity will be determined in consultation with NOAA Fisheries and during observer training.
6. Monitoring Reports: The results of monitoring shall be recorded on the appropriate monitoring sheets, with daily and weekly summary sheets. In addition, there will be a post dredging summary sheet for each harbor. Monitoring sheets will be completed regardless of whether any observations or takes of ESA species occur. NOAA Fisheries will approve monitoring and incidental take forms provided by the USACE as part of any Incidental Take Permit (ITP). Any specimens taken under the ITP shall be photographed with a digital camera, with photographs attached to respective reports. Documentation associated with the incidental take reports shall be submitted to the USACE within 24-hours of the take. All monitoring data will be archived by USACE ERDC as well as provided to NOAA Fisheries.
7. The endangered species observer will place all specimens or specimen parts taken under the ITP in a heavy duty garbage bag in a large cooler on ice and contact the specific island's stranding coordinator to arrange the transfer of the specimen off the vessel. The stranding coordinator's contact information and other handling requirements will be provided by NOAA Fisheries. The observer will place an immediate call to the stranding coordinator upon the retrieval of a live turtle. The stranding coordinator's contact information and other handling requirements will be provided by NOAA Fisheries.

Benthic Impacts and Disturbance BMPs.

1. While transiting to the ODMDS, the Essayons will remain in the marked channel until passing the outer buoy to prevent any accidental release of material from the scow/hopper that might settle on adjacent reef habitats.
2. Measures to reduce potential effects on EFH, including designation of avoidance areas for living coral, will be implemented pending completion of consultation with NOAA Fisheries.
3. All efforts will be made to time the dredging operations to avoid coral spawning season (Mid- May through the end of August).

Water Quality BMPs.

The Essayons' hopper dredge technology and BMPs will be employed to prevent excess turbidity. Due to the differences in the composition of the dredged material, ocean conditions, proximity to sensitive habitats, and other environmental factors, the Essayons' crew will draw on their dredging experience in determining the best course of action from the suite of BMPs provided below to minimize turbidity and associated impacts on habitat and biological resources.

1. A Water Quality Monitoring Plan has been prepared as part of this action. Turbidity and dissolved oxygen will be monitored in accordance with the plan by the dredge crew and the dredge operations will be adjusted accordingly to minimize the effects of turbidity on the surrounding area.
2. Turbidity will be monitored by a support boat during active dredging as indicated in the Water Quality Monitoring Plan to determine if there is an appreciable increase in turbidity. Sampling locations will be determined with an emphasis on monitoring the harbor entrances which are adjacent to coral reef and seagrass beds outside of the harbor. For safety reasons, the support vessel must be 300 yards away from the dredge while operating, and shall operate only during daylight hours.
3. The draghead will be placed directly into the dredge material prior to powering up the pumps in order to minimize the mixing zone of dredged material in the surrounding water.
4. Depending on the density of the dredged material, the Essayons will adjust its speed to reduce horizontal speed of the suction draghead moving through the dredge material, especially in areas close to the harbor entrance and adjacent to the large designated reef avoidance area in the entrance of Nawiliwili Harbor.
5. The Essayons will plan its dredge activities in order to minimize overflow or return effluent back into the surrounding waters near the harbor entrance.
6. Some turbidity is inevitable during dredging. Where turbidity becomes excessive, as determined in the Water Quality Monitoring Plan, the Essayons will employ the following suite of corrective actions until turbidity is diminished to acceptable levels;
   a. Employ anti-turbidity valves within the hopper to slow the entrainment of air and increase laminar flow, minimizing mixing and increasing the settling rate of the sediment, allowing for the return of cleaner overflow water.
   b. Adjust pump speed to slow the flow rate of the water-dredged material slurry into the hopper, providing more time for the sediment to fall out of suspension, allowing for the return of cleaner overflow water.

c. Reduce the total overflow time to less than the economic load in areas of fine silt and clay sediments, where corrective actions 6a and 6b prove less effective.
d. Reposition the Essayons to a new area within the harbor to allow for turbidity to naturally dissipate through current action and settlement of fine particles.
e. Where repositioning is not an option, the Essayons will stop dredging and transit to the ODMDS, allowing for natural dissipation of turbidity.

7. Essayons staff will inspect all heavy equipment for oil leaks on a daily basis. Heavy equipment operations will be postponed or halted should a leak be detected, and will not proceed until the leak is repaired and equipment cleaned.
8. A contingency plan to control toxic materials will be maintained on board the Essayons.
9. A Spill and Debris Prevention Plan will be maintained on board the Essayons, and the Essayons will store and have readily available appropriate materials to contain and clean potential spills.

Vessel Strikes BMPs.
The Essayons is a large capacity dredge, which allows for less traffic and fewer dumps, thereby requiring fewer trips to the disposal site, diminishing the risk of vessel strikes while in transit. In addition, the following BMPs will serve to limit vessel strikes where possible.

1. Transit speed to and from the ODMDS and between harbors will be no greater than 10 knots.
2. The Essayons will communicate with the harbor masters and other vessels operating within the harbor to relay or receive the location and other relevant information for any ESA listed marine mammals entering or occurring in the harbor during operations, and will abide by harbor master instructions, including the possibility of reducing vessel speed or halting vessel movement until the animal leaves the vicinity.
3. During daylight hours, the observer shall have access to the bridge and check for the presence of endangered species, especially humpback whale mothers and calves. Observers will scan with binoculars for whales and monk seals to ensure avoidance measures, as appropriate, are performed. Observers will also scan for and report sea turtles for monitoring purposes, which will provide information on the effectiveness of the sea turtle entrainment mitigation measures.
4. Observer periods.
   a. While in the harbor action area, observation for marine mammals shall take place before dredging resumes, following any break of more than one half hour.1
   b. Prior to exiting the harbor entrance and into the transit action area, the ship will transit at the slowest possible safe speed to allow the on-duty observer to perform a scan sweep for ESA-listed marine mammals, allowing time for the captain to note location of whales, thereby mitigating any ship strikes upon leaving the harbor.
   c. During daylight transits to the ODMDS, observers shall maintain a continuous watch for the presence monk seals and whales.

5. During night transits to the ODMDS, the observer shall scan the waters as may be practical, however the Essayons will not employ spotlights as part of their monitoring effort, due to safety concerns for night blindness in unlit areas of the water.
6. The start of dredging shall be postponed when marine mammals are within 50 yards of the vessel with the exception of humpback whales (100 yards). Once the species leaves the area, dredging can commence.
7. No one associated with the dredging operation shall attempt to feed, touch, ride, or otherwise intentionally interact with any ESA-listed marine species.
8. To the extent possible, when piloting vessels, vessel operators shall adjust speed and/or alter course to remain at least 100 yards from whales, and at least 50 yards from other marine mammals, and will not pilot the vessel as to cause another vessel or object to approach within 100 yards.
9. The Essayons will adjust the release of dredged material at ODMDS to ensure marine mammals are outside of those ranges during dumping operations.
10. If, despite efforts to maintain the distances and speeds described above, a marine mammal approaches the vessel, and only if the safety of the vessel, crew, and adjacent habitat is assured, put the engine in neutral until humpback whales are at least 90 m (100 yards) away and at least 45 m (50 yards) away for or for other species of whales, dolphins, and monk seals, and then slowly (under 5 knots) move away to the prescribed distance.
11. Marine mammals shall not be encircled or trapped between multiple vessels or between vessels and the shore.

Sea Turtle Entrainment Protection BMPs.
In addition to the above observer and vessel strike and entanglement BMPs, the following BMPs are specifically designed to minimize sea turtle entrainment into the hopper dragarm.

1. The Essayons shall operate the dredge to minimize the possibility of taking sea turtles and to comply with the requirements stated in the Incidental Take Statement provided by NOAA Fisheries in their Biological Opinion.
2. The Essayons will attach “tickler chains” (Figure 2-4) to each dragarm, which act in part to disturb turtles prior to coming in contact with the operating draghead, allowing them to swim away to safety.
3. The Essayons will have on board dragheads with fixed-position turtle deflectors available for use as an alternative protection to tickler chains if the tickler chains are deemed ineffective.
4. Tickler chains and turtle deflector-equipped dragheads shall be maintained in operational condition for the entire dredging operation.
5. The draghead will be placed firmly on the bottom prior to powering up the pumps to the full power, in order to minimize the potential of entraining a sea turtle resting on the sea floor.
6. During turning operations, moving to a new dredge location, or at the end of a load cycle (i.e., when hopper is full and ready to transit to ODMDS), the Essayons will reduce the dragarm pumps from a maximum speed of 7,000 RPMs (equivalent to 27 feet per second [fps] within the dragarm) to its idle speed of 4,700 RPMs

(approximately 18 fps) prior to lifting the dragheads off the seafloor. Pumps shall remain at idle speed until the draghead is at mid-water, where the suction velocity can be increased just long enough to clear the lines, approximately 5-10 seconds, and after which the pumps will return to idle speed. Pumping water through the dragheads shall cease while maneuvering or during travel to/from the disposal area.

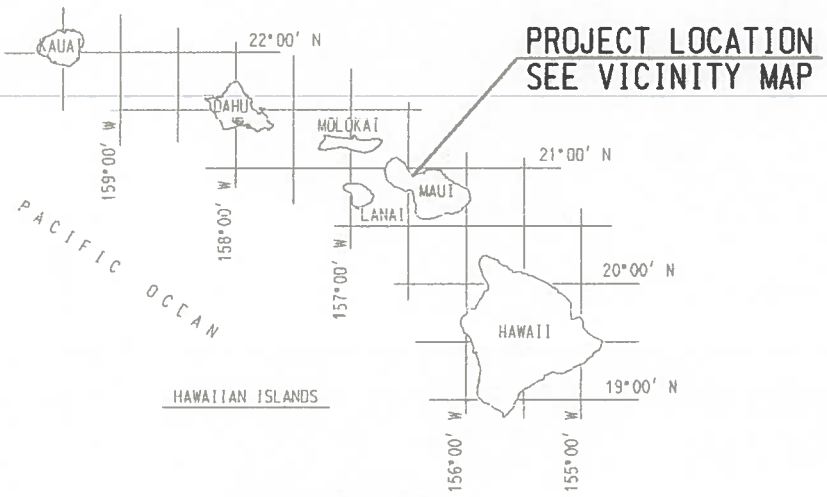
7. If a dragarm becomes clogged, as noted by increased pump RPMs or decreased flow rate, the draghead will not be raised off the bottom to increase suction velocity in order to clear the obstruction. As with BMP #6 above, the pump will be reduced to idle speed, the dragarm will be raised to mid-water and powered up to full speed long enough to clear the obstruction. After which, the pump will be powered down to idle speed until the draghead is placed firmly on the sea bottom, as described in BMP #5 above.
8. Dredging speeds shall not exceed 3.5 knots, allowing turtles to swim away from the draghead.

Sea Turtle Monitoring BMPs.

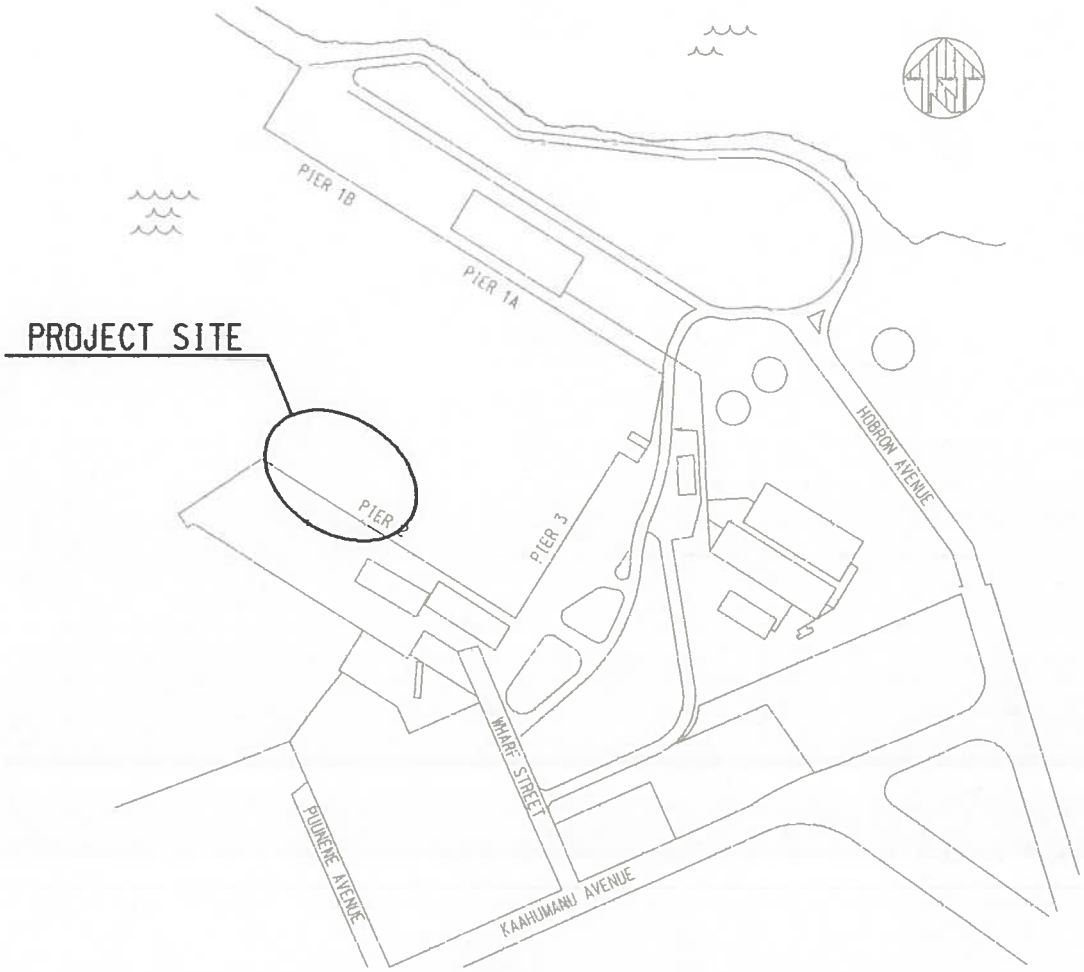
1. The Essayons will attach an overflow screen at the weirs to allow for examination of dredge material. Safe access shall be provided to allow the observer to inspect for turtles, turtle parts or damage. The dredge will provide suitable illumination to allow the observer to safely monitor take throughout each cycle during non-daylight hours.
2. The overflow screens shall be maintained in operational condition for the entire dredging operation.
3. After the completion of a dredge cycle, the observer shall thoroughly monitor the overflow screens for turtles and/or turtle parts on every load.
4. The Essayons will carry out all lock-out tag-out procedures during monitoring activities to ensure complete safety for the endangered species observer.
5. Upon completion of each load cycle, dragheads shall be examined by the observer after the draghead is lifted from the sea surface and is placed on the saddle during the transit to the ODMDS in order to assure that sea turtles that may be trapped within draghead are not lost and unaccounted for. Observers shall physically inspect dragheads for threatened and endangered species take.
6. All turtle takes shall be immediately reported to the Environmental Coordinator, who will relay this information to NOAA Fisheries PIRO.
7. The endangered species observer will place all specimens or specimen parts taken under the ITP in a heavy duty garbage bag in a large cooler on ice and contact the specific island’s stranding coordinator to arrange the transfer of the specimen off the vessel. The observer will place an immediate call to the stranding coordinator upon the retrieval of a live turtle. The stranding coordinator’s contact information and other handling requirements will be provided by NOAA Fisheries.
8. The observer will monitor for sea turtles on the water’s surface whenever they are scanning for marine mammals, as well as during active dredging to the extent their other duties allow. This will provide an understanding of the presence or absence of sea turtles in the dredge area, which will be useful in general understanding of turtle behavior around the dredge, post-processing of the data acquired to assess the effectiveness of the mitigation measures, and to correlate presence to the take data.

Alien and Invasive Species BMPs.

1. The Essayons has a ballast water control plan to minimize the potential for spread of non-native species. The Essayons utilizes potable (fresh) water in its ballast tanks, which are not normally discharged during the entire dredging action, significantly reducing the potential of transporting alien and invasive marine species between ports.
2. The Essayons will initiate several cycles of rinsing the hopper and dragarms before entering Hawaii state waters and before moving from one harbor to the next.
3. The Essayons has regular USCG inspection of its tanks to minimize potential for the spread of alien and invasive marine species. These inspections will be done prior to the Essayons entering the first Hawaii harbor from its homeport in Portland, OR.
4. Dragarm and draghead inspections will be completed between each of the islands.
5. The Essayons will not require ballast water, except possibly during ocean transit from Portland, OR. As required by USCG, ballast water will be released prior to entering Hawaiian waters.
6. Honolulu Harbor will be dredged last due to the harbor having substantially more invasive species compared to the other harbors. This will limit the potential of the Essayons acting as a vector for the transmission of invasive species from Honolulu and the other harbors. Additional BMPs and avoidance measures may be prepared as part of consultation with NOAA Fisheries in accordance with the preparation of the Section 7 of the ESA Incidental Take Permit (ITP), including the Essayons accommodating competent observers, as required. If required, NOAA Fisheries and the USACE will coordinate to determine protocols for observers and roles, if any, of Essayons personnel in assisting observers in addition to the BMPs provided above.

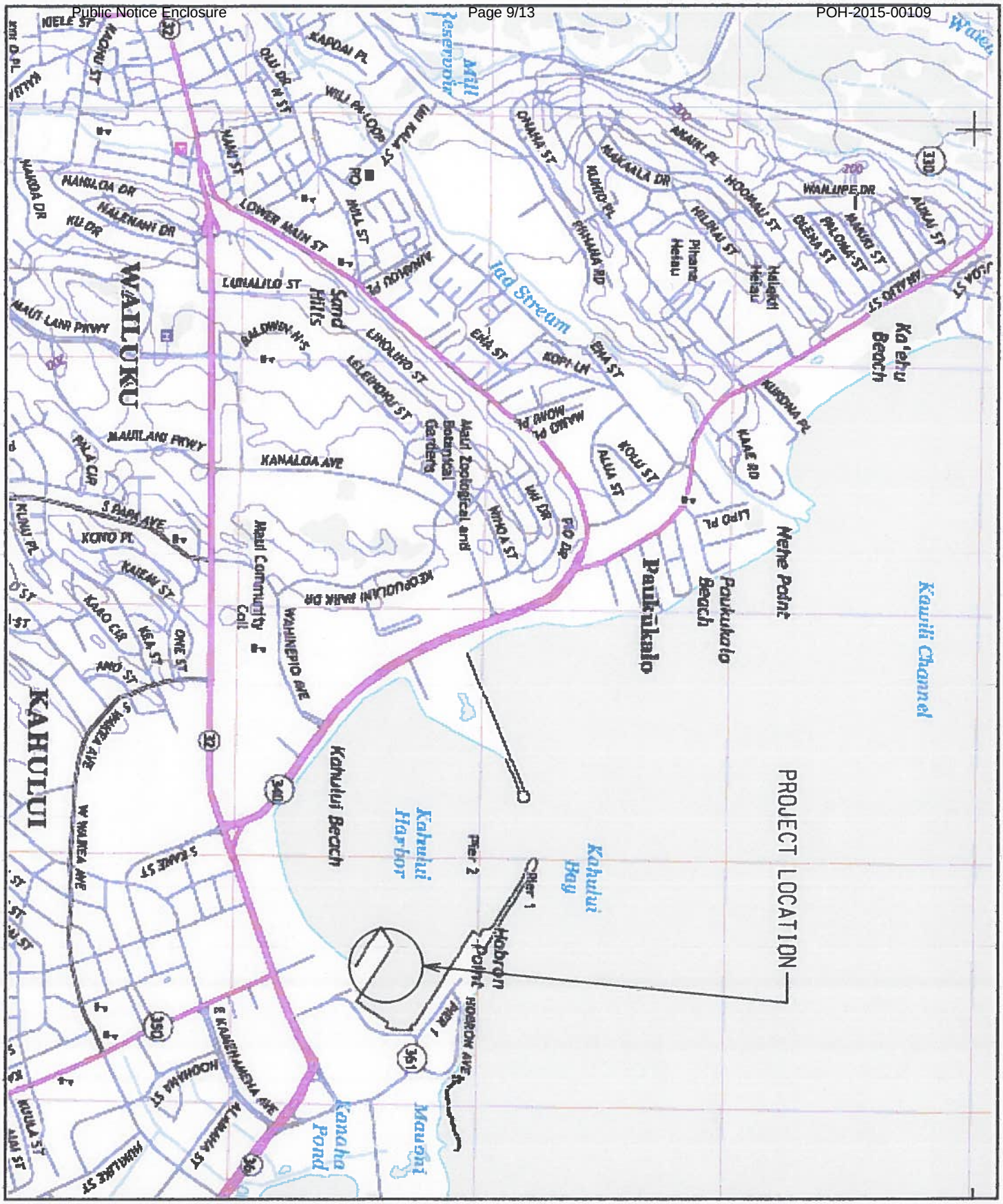


LOCATION MAP
NOT TO SCALE

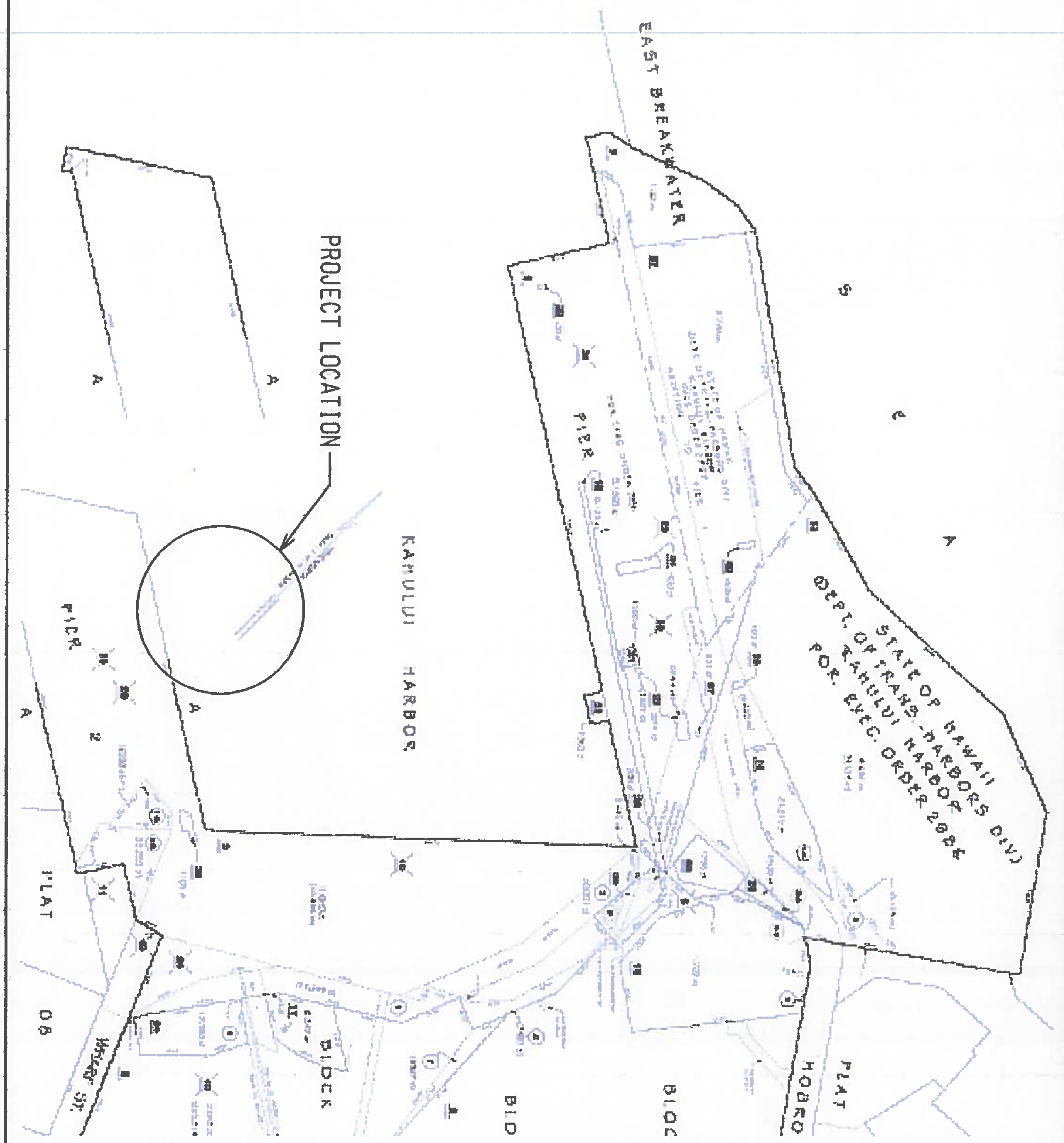


VICINITY MAP
NOT TO SCALE

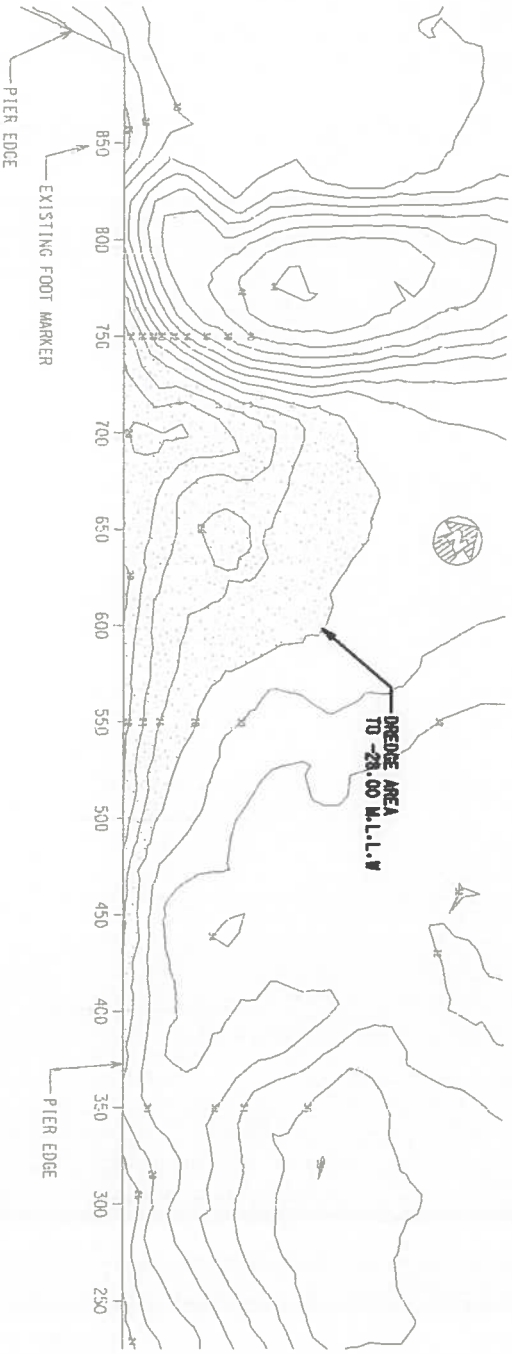
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2 KAHULUI HARBOR, MAUI, HAWAII**	SHEET NO. **1**
	DATE **DEC 2015** PROJECT NO. **H.C. 30136**	SHEET 1 OF 6



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2 KAHULUI HARBOR, MAUI, HAWAII** DATE **DEC 2015** PROJECT NO. **H.C. 30136**	SHEET NO. **2** SHEET 2 OF 6



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2** **KAHULUI HARBOR, MAUI, HAWAII** DATE **DEC 2015** PROJECT NO. **H.C. 30136**	SHEET NO. **3** SHEET 3 OF 6

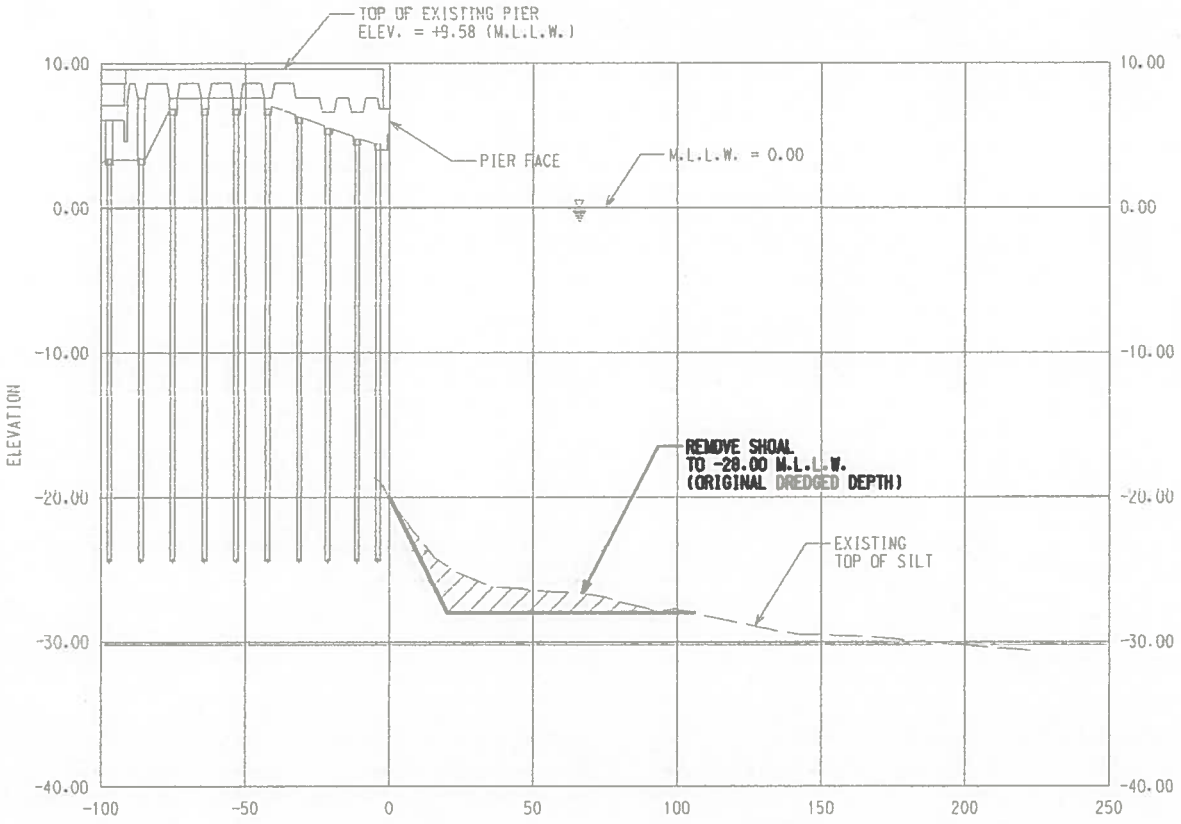


PLAN - PIER 2
NOT TO SCALE

NOTES:

ESTIMATED DREDGED QUANTITY = 2,600 CU. YDS.
APPROX. DREDGE AREA = 2,325 SQ. YDS.
DREDGED SEDIMENTS: PRIMARILY LITTORAL MATERIAL CONSISTING OF SILTY SAND
METHOD OF DREDGING: HOPPER DREDGE
LOCATION OF DISPOSAL SITE: OCEAN DISPOSAL

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2 KAHULUI HARBOR, MAUI, HAWAII**	SHEET NO. **4**
	DATE **DEC 2015** | PROJECT NO. **H.C. 30136**	SHEET 4 OF 6



TYPICAL SECTION - PIER 2
NOT TO SCALE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2 KAHULUI HARBOR, MAUI, HAWAII**	SHEET NO. **5**
	DATE **DEC 2015** | PROJECT NO. **H.C. 30136**	SHEET 5 OF 6

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HARBORS DIVISION FOR QUESTIONS, CONTACT HARBORS ENGINEERING MAINTENANCE AT 587-1877	**MAINTENANCE DREDGING AT PIER 2 KAHULUI HARBOR, MAUI, HAWAII**	SHEET NO. **6**
	DATE **DEC 2015** | PROJECT NO. **H.C. 30136**	SHEET 6 OF 6