

POH-2015-00221 (Lahaina Small Boat  
Harbor Ferry Pier Improvements)

**Update to the Public Notice comment period**

The public notice comment period has  
been extended for 15 calendar days to

**July 4, 2018**

to give the public additional time to  
consider the clarifying information added  
to the public notice.

## Fact Sheet

### What's going on?

The U.S. Army Corps of Engineers Regulatory Branch (Corps) is reviewing an application from the State of Hawaii Department of Land and Natural Resources Division of Boating and Ocean Recreation (DOBOR). DOBOR is proposing to remove the old pier formerly used for the Carthaginian (a boat that used to be in the harbor, now gone) in the Lahaina Small Boat Harbor and replace it with a larger L-shaped pier. The Corps is conducting a public notice (i.e. asking for comments from the public) about DOBOR's proposed project as part of Department of Army permitting review for structures in navigable waters. This fact sheet was created to clarify information presented in the public notice.

Have a comment or question specifically about this project, but don't see it addressed on the fact sheet below? Please send an email to [Vera.B.Koskelo@usace.army.mil](mailto:Vera.B.Koskelo@usace.army.mil) before **July 5, 2018** and include this number in the email title: POH-2015-00221.

1. **No change to Breakwater or Harbors surf spots.** The proposed new ferry pier and the temporary structures isolating the construction area during pier work (e.g. turbidity curtains) would NOT be located in or near the Harbors and Breakwater (Keawaiki and Uo) surf breaks. See the 2015-00221 project figure, which shows the proposed pier and temporary construction area relative to the surf breaks.

This project would NOT involve dredging (in other words, NO impact to the reef) and would NOT affect, modify, or improve the main breakwater of the Lahaina Small Boat Harbor (SBH) or the Lahaina SBH itself. The project would NOT affect the existing metal stairs on the seawall near the lighthouse (located approximately 25 feet away from the proposed new pier) that surfers use to access the water.

2. **No additional cruise ships or tenders.** DOBOR has informed the Corps that the proposed new ferry pier would NOT be available for use by cruise ship tenders (the little boats that bring cruise ship passengers on shore). The project would NOT increase the number of cruise ships landing at the harbor or the number of tenders using the existing harbor. If you have general cruise ship questions, please contact Kapono Alana, DOBOR's Facility Security Officer, at (808) 243-5824.
3. **Why build a new pier?** DOBOR is proposing to construct the new pier to provide a designated dock for inter-island ferry services. Without the new pier, overcrowding of boats could lead to boating conflicts within the harbor, which may cause injury, damage property, and result in impacts to the environment

(e.g. oil spills). The new pier would relieve congestion and improve efficiency of overall operations at the Lahaina SBH.

4. **Who would get to use the pier?** The proposed new ferry pier would primarily be used by the existing Lanai ferry (operated by Expeditions Maui). The Lanai ferry operates daily and would utilize the pier 5 times per day. Other vessels may utilize the pier when the ferry is not docked.

The Lanai ferry and any other boats using the pier would mostly use the SOUTH side (harbor facing, between the new pier and the existing big concrete pier) because the water depth is very shallow on the north side of the new pier. Along the first 35' no vessel mooring will be permitted, only light draft boats that can safely use shallow areas (~5 feet deep) would get to use the north side due to the shallow water depths at this location. DOBOR is considering allowing Maui's Hawaiian Voyaging Canoe (Mookiha O Piilani) to occasionally dock on the north side of the pier for educational purposes.

5. **Why Lahaina Small Boat Harbor?** During project planning, DOBOR was looking for a site that was close to Lahaina town (for commuting Molokai residents) and already had access to deep water (to avoid dredging) and historic use as a harbor (to avoid having to build a new harbor). DOBOR considered these criteria and compared the economic costs versus the benefits of various locations and, during almost 11 years of planning and conducting the Environmental Impact Statement (EIS) review (a type of examination or study of the environmental, social, economic, and other effects that would result from a proposed project), evaluated three sites for this project: Lahaina SBH, Mala Wharf, and Kekaa Point (in Kaanapali). Based on the criteria and the economic analysis, DOBOR selected the Lahaina SBH.

Want to learn more about how DOBOR decided to select the Lahaina SBH? Read the Final EIS on the Office of Environmental Quality's online EA/EIS Library ([http://oegc2.doh.hawaii.gov/EA\\_EIS\\_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf](http://oegc2.doh.hawaii.gov/EA_EIS_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf)).

6. **No impact to the Hauola (birthing) Stone or other historical resources.** The Hauola Stone is an important historic and cultural resource that would NOT be impacted by the proposed Lahaina Ferry Pier Project. The Hauola Stone is located approximately 120 to 135 feet to the northwest of the proposed new pier. The proposed new pier would NOT affect other nearby historical resources.

Want to learn more about how DOBOR is proposing to avoid affecting historical resources? Read the Final EIS on the Office of Environmental Quality's online EA/EIS Library ([http://oeqc2.doh.hawaii.gov/EA\\_EIS\\_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf](http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf)).

7. **No effect on air quality.** DOBOR expects that the proposed new ferry pier in the Lahaina SBH would NOT result in an increase in the number of boats utilizing the harbor facilities and would therefore not affect air quality.
  
8. **Limited effect to appearance of Lahaina Small Boat Harbor.** The proposed pier would include a low-rise, open side structure which DOBOR designed to have a minimal visual impact on views to and from the harbor. The structure on the pier would be designed to be consistent with the standards of the Lahaina Historic District and the Architectural Style Book for Lahaina.
  
9. **No new parking spots.** According to the Final EIS (see link above) for this project, there are approximately 690 marked parking stalls, 40 unmarked parking stalls, 10 bus parking stalls and six limousine parking stalls in and around the Lahaina SBH. DOBOR acknowledges that the area around the Lahaina SBH can often be crowded and that finding parking can prove difficult for users and visitors, especially on boat days and during peak visitor seasons. Since the proposed new ferry pier is intended to alleviate existing marine vessel congestion in the harbor and would NOT increase the number of vessels utilizing the harbor facilities, DOBOR is not proposing to construct any additional parking stalls as part of this project. DOBOR would coordinate with the DLNR-Division of Conservation and Resource Enforcement (DOCARE) and County of Maui, Police Department to regulate parking in the vicinity of the harbor during boat days and would secure designated governmental parking for harbor employees at the harbor parking lot in the southern portion of the harbor. If you have any questions about the parking around Lahaina, please contact County of Maui, Department of Planning at (808) 270-7735.
  
10. **Status of planning.** The proposed new ferry pier project has been in the planning phase of the development process since the early 2000's. An Environmental Impact Statement (EIS) was prepared to evaluate possible alternatives, assess potential environmental impacts and define appropriate mitigation measures for the project. The Final EIS was accepted by the Chairperson of the Department of Land and Natural Resources (on behalf of

the Governor of the State of Hawaii) on June 10, 2014. A National Environmental Policy Act Categorical Exclusion determination was also issued for the project by the Federal Transit Administration. Since completion of the Federal/State environmental review processes in 2014, DOBOR has been working with the State and County agencies to obtain local permits for the project, which have included Conservation District Use, Shoreline Setback and Historic District approvals. Department of Army permit, Section 401 Water Quality Certification and Coastal Zone Management Consistency applications are currently under review for the project.

Want to learn more about DOBOR's FEIS? Read the Final EIS online at the Office of Environmental Quality's online EA/EIS Library ([http://oeqc2.doh.hawaii.gov/EA\\_EIS\\_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf](http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2014-06-23-MA-FEIS-Acceptance-Lahaina-Small-Boat-Harbor-Ferry-Pier-Improvements.pdf)).



Google Earth

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## LAHAINA FERRY PIER IMPROVEMENTS

LAHAINA MAUI HAWAII

Date: JUNE 2018  
 MAI PROJ. NO 0984-05



# PUBLIC NOTICE

## US Army Corps of Engineers, Honolulu District

Regulatory Office (CEPOH-RO)  
Building 230

Fort Shafter, Hawaii 96858-5440

Public Notice Date: **May 22, 2018**

Expiration Date: ~~June 20, 2018~~

**July 4, 2018**

Permit File Number: POH-2015-00221

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### FEDERAL PUBLIC NOTICE

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. Edward Underwood  
DLNR, DOBOR  
4 Sand Island Access Road  
Honolulu, Hawaii 96819

WATERWAY AND LOCATION OF THE PROPOSED WORK: The proposed project is located in the Lahaina Small Boat Harbor and Pacific Ocean at 20.871932°, -156.678821°, TMKs (2) 4-6-001:002, 003, and 014 at 675 Wharf Street, Lahaina, Island of Maui, Hawaii.

#### PROPOSED PROJECT AND PURPOSE:

The project description is as follows, to be conducted in accordance with the project plans:

The installation of a new ferry pier in the Lahaina Small Boat Harbor. The ferry pier would be located seaward of the existing U.S. Coast Guard (USCG) lighthouse adjacent to the Lahaina Small Boat Harbor and approximately 70 feet north of the existing public pier. The USCG has given the applicant permission to use the area adjacent to the lighthouse on the condition that, before work can start on the ferry pier itself, the applicant must repair of the foundation on and landward of the existing seawall beneath the lighthouse. Repairs to the seawall next to the foundation of the lighthouse would require the demolition of the existing 162 square foot catwalk pier. Following the demolition, impermeable geotextile fabric would be temporarily installed against seawall from top to ocean substrate, secured with untreated plywood on the seaward side of the geotextile fabric, all temporarily held in place with concrete tapcon screws and steel stakes driven into the rock substrate landward of the seawall. Once the temporary geotextile fabric along the seawall is in place, the voids beneath the lighthouse foundation would be filled with concrete via tremie method inserted by means of holes drilled through the lighthouse foundation in uplands landward of the seawall.

Once the lighthouse foundations repairs are complete, structural Best Management Practices (BMPs) for the rest of the project will be put in place, including turbidity curtains, oil booms, and a 60-foot wide by 150-foot long spud barge. Turbidity curtains would be placed around the active part of the project area and oil booms placed around any working vessels. Both turbidity curtains and oils booms would be installed using skiffs. The turbidity curtain would extend from the water surface to the harbor bottom with a ½-inch chain along the ground surface wrapped in flexible reinforced thermoplastic material. The barge's eighteen 12-inch diameter H-pile spuds would be temporarily embedded in the ocean floor using a backhoe or excavator on the barge. The H-pile spuds would be driven via hydraulic pressure from the weight of barge to approximately two feet below the two to five-foot deep sand layer into hard substrate. As the barge moves around the project site for construction of the ferry pier, the H-pile spuds would be pulled out at each of the barge's temporary locations prior to the movement of the barge to the next temporary location. After the barge is installed, the surface of the existing 162 square foot catwalk within the project area adjacent to the lighthouse would be demolished and removed.

Following the temporary installation of the spud barge, construction of another BMP, a trestle platform, would start with the temporary installation of 20 ¾-inch thick 24" diameter steel hollow falsework pipe piles via drilling method using the pipe itself. Any slag generated would fall within the steel casing and would be removed and disposed of in an approved upland location. Following the installation of the trestle's pipe pilings, the six pilings remaining after the removal of the former catwalk would be cut using a pneumatic rock drill, saw, or equivalent equipment to make the tops even with the water surface to Mean Sea Level Zero. The cut portions of the pilings would be disposed of in an approved upland location. After the trestle's pipe piles are installed, the 5,650 square foot steel beam and untreated plywood L-shaped trestle platform would be temporarily installed in and around the perimeter of the footprint of the permanent ferry pier and its gangways for construction access.

Construction of the permanent ferry pier would start with the installation of the permanent pilings by auger-drilling sixteen ¾-inch thick 30-inch diameter shafts, placing steel rebar cages within the shafts, and pouring tremie concrete into the shafts to elevation 0.58 feet above the Mean Lower Low Water line. All spoils including slag and displaced water from the drill shafts would be collected and pumped to a water-tight Baker steel tank, transported to Mala Wharf until the material is dry, and then transported to an approved landfill. The pilings would be installed from the land-ward end of the gangway out to the ocean end of the pier. Following installation of the pilings, the rest of the pier and gangway would be constructed from the ocean end of the pier in toward the land. The pier would consist of 3.5-foot long by 5-foot wide precast concrete tubs with reinforcing steel within precast member walls. The tubs would be filled with cast-in-place concrete, connected by 4-inch thick precast planks and interspersed with five 10-foot 2-inch wide by 6-foot long fiber reinforced polymer (FRP) grates. Excluding the grates, the rest of the pier would be topped with an 8-inch cast-in-place concrete slab. The 15-foot wide by 35-foot long lower concrete half of the gangway would be constructed on top of four of the sixteen total pilings using the same materials and methods as the pier. A 3-inch diameter waterline, ¾-inch diameter waterline, 3-inch diameter sewerline, and electrical conduits would be installed in the pre-cast concrete

tubs of the pier and concrete half of the gangway prior to pouring cast-in-place concrete into the tubs. The 15-foot wide by 35-foot long upper aluminum half of the gangway between the concrete gangway and the shoreline would be installed with the waterlines, sewerline, and electrical conduits fully enclosed within a utility raceway as part of the aluminum structure.

A 14-foot tall one-story trellis shade structure would be installed above the surface of the 20-foot wide by 115-foot long pier and other vessel utilities, such as a pump-out unit, hose bibs, and lighting would be installed on the pier. Work in the adjacent uplands would include the replacement of the Administration Building and construction of new concrete pavement and bollards. The new 3,350 square foot ferry pier and gangway, excluding the 365 square foot area of FRP grates, would be 2,823 square feet larger than the existing 162 square foot catwalk.

The proposed work would be constructed using the BMPs listed in the BMP Plan dated May 2017. Upland work related to the proposed work includes the use of a 0.5 acre area southwest of the intersection of Front Street and Ala Moana Street for temporary stockpiling of materials and a 0.48-acre area for concrete washout, construction trailer, and contractor staging areas. Staging areas would be stabilized with grass following the completion of the proposed work.

**Avoidance and Minimization:** The applicant considered five on-site alternatives, including the selected alternative and the no action alternative, in the Alternatives Analysis portion of the Final Environmental Impact Statement (EIS). Under the selected alternative, the footprint of the pier would be at least 1,235 square feet smaller and the trellis design would be approximately seven feet shorter and allow more sunlight penetration than the other alternatives. Unlike the other alternatives considered, the selected alternative would not require dredging. Relative to the other action alternatives, the selected alternative would avoid the removal a portion of reef flat and the full removal of the existing piles of the former catwalk. The applicant further minimized impacts from the original plan to impact-drive the pier piles by proposing to drill pile holes and then either set pre-cast piles in place or drill the pier piles in and then allow the piles to be cast in-place. The applicant would also include Best Management Practices (BMPs) to minimize impacts, including using grated decking in the gangway to allow for sunlight penetration, using full-depth silt curtains to capture turbidity, and cleaning all equipment prior to in-water use.

**Mitigation:** The proposed project would not result in the loss of a water of the U.S. and the project permanent impacts would not be substantial; therefore, the Corps is not requiring compensatory mitigation for the project.

**Basic Project Purpose:** to improve inter-island travel

**Overall Project Purpose:** to provide improved ferry service between Lanai and Maui

**AUTHORITY:** A Department of the Army permit is required 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 proposed action will **not** result in a discharge of dredged or fill material into a water of the U.S. and will **not** require authorization from the Corps in accordance to Section 404 of the Clean Water Act of 1972 (CWA), but will require Corps authorization solely under Section 10 of the Rivers and Harbors Act. Under Section 401 of the CWA (Public Law 95-217), the Corps may not issue a permit for the described work until the applicant obtains a certification, or waiver of certification, from the State of Hawaii, Department of Health – Clean Water Branch.

**COASTAL ZONE MANAGEMENT ACT CERTIFICATION:** **The proposed activity may 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.

**HISTORIC PROPERTIES:** The U.S. Department of Transportation Federal Transit Administration (FTA) identified five historic resources within the Area of Potential Effect (APE): Kamehameha I's Brick House, Hauola Stone, Pioneer Inn, historic seawall, and historic lighthouse, all located within the Lahaina Historic District No. 1, which is also a National Historic Landmark. Pursuant to Section 106 of the National Historic Preservation Act (NHPA), the FTA determined that the project would have no adverse effect on historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. The State of Hawaii, Department of Land & Natural Resources, Historic Preservation Division (SHPD) concurred with this determination in a letter dated August 24, 2016.

**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. Based on the project location, the following protected species have the potential to occur near the project location:

Green Sea Turtle (*Chelonia mydas*), Threatened  
Hawksbill Turtle (*Eretmochelys imbricata*), Endangered

Hawaiian Monk Seal, (*Monachus schauinslandi*), Endangered

The FTA determined that the proposed activity may affect, but is not likely to adversely affect an endangered or threatened species or its critical habitat. The FTA initiated consultation under Section 7 of the Endangered Species Act of 1973 (87 Stat. 844) with the National Marine Fisheries Service Protected Resources Division (NMFS-PRD). NMFS-PRD issued a letter of concurrence dated February 16, 2018 stating agreement with FTA's ESA determination.

**ESSENTIAL FISH HABITAT:** The FTA evaluated the proposed work 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 Essential Fish Habitat. The Honolulu District includes areas of EFH as Fishery Management Plans. We have reviewed the January 20, 1999, Western Pacific Fishery Management Council's Environmental Assessment to locate EFH area as identified by NMFS. The FTA determined that the proposed project will have an adverse effect on EFH and initiated consultation with NMFS-Habitat Conservation Division (NMFS-HCD). NMFS-HCD provided EFH Conservation Recommendations in a transmittal dated January 31, 2018 and FTA agreed to comply with the EFH Conservation Recommendations.

**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; Native Hawaiian Organizations; 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 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, Attn: Ms. Vera Koskelo  
Building 230  
Fort Shafter, Hawaii 96858-5440.

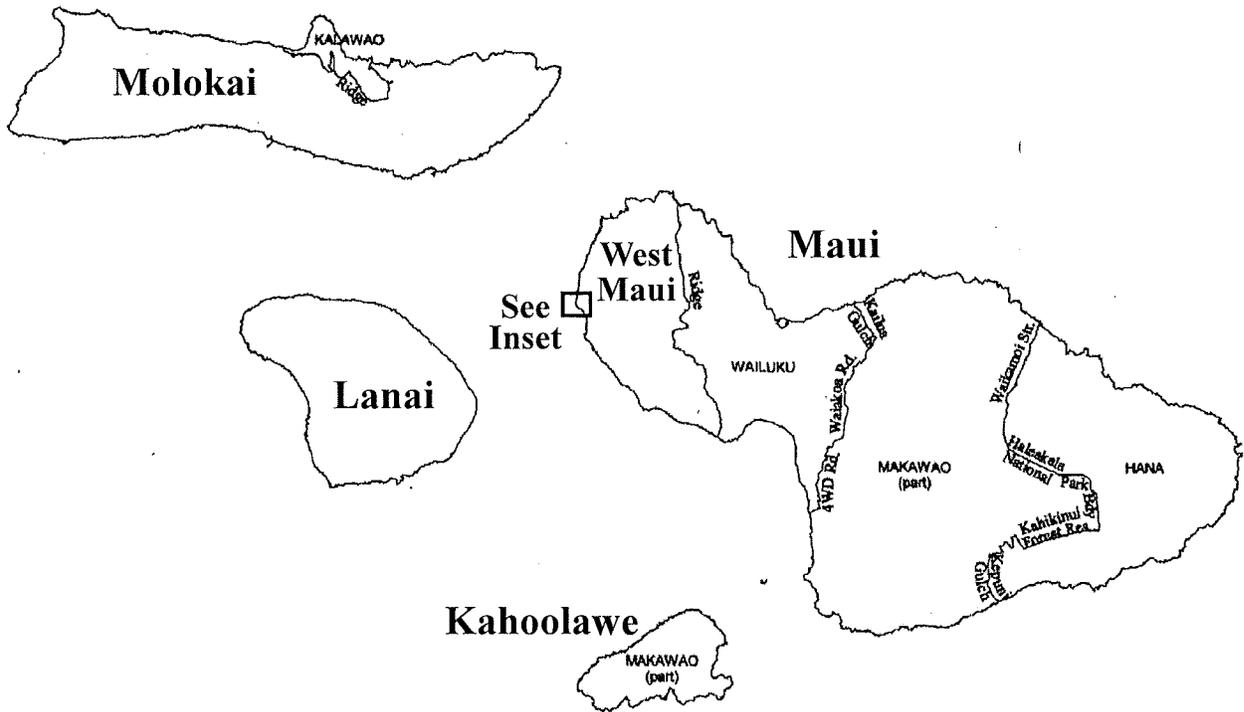
Alternatively, comments may be emailed to [Vera.B.Koskelo@usace.army.mil](mailto:Vera.B.Koskelo@usace.army.mil). Reference POH-2015-00221 in the subject heading of the email. In order to be accepted, e-mail comments must originate from the author's e-mail account. All e-mail comments should be sent to [Vera.B.Koskelo@usace.army.mil](mailto:Vera.B.Koskelo@usace.army.mil)

Both conventional mail and e-mail comments must include the DA permit number **POH-2015-00221**, and the commentor's name, address, and phone number. **All comments whether conventional mail or e-mail should be received by the close of business on ~~June 20, 2018~~ July 4, 2018.**

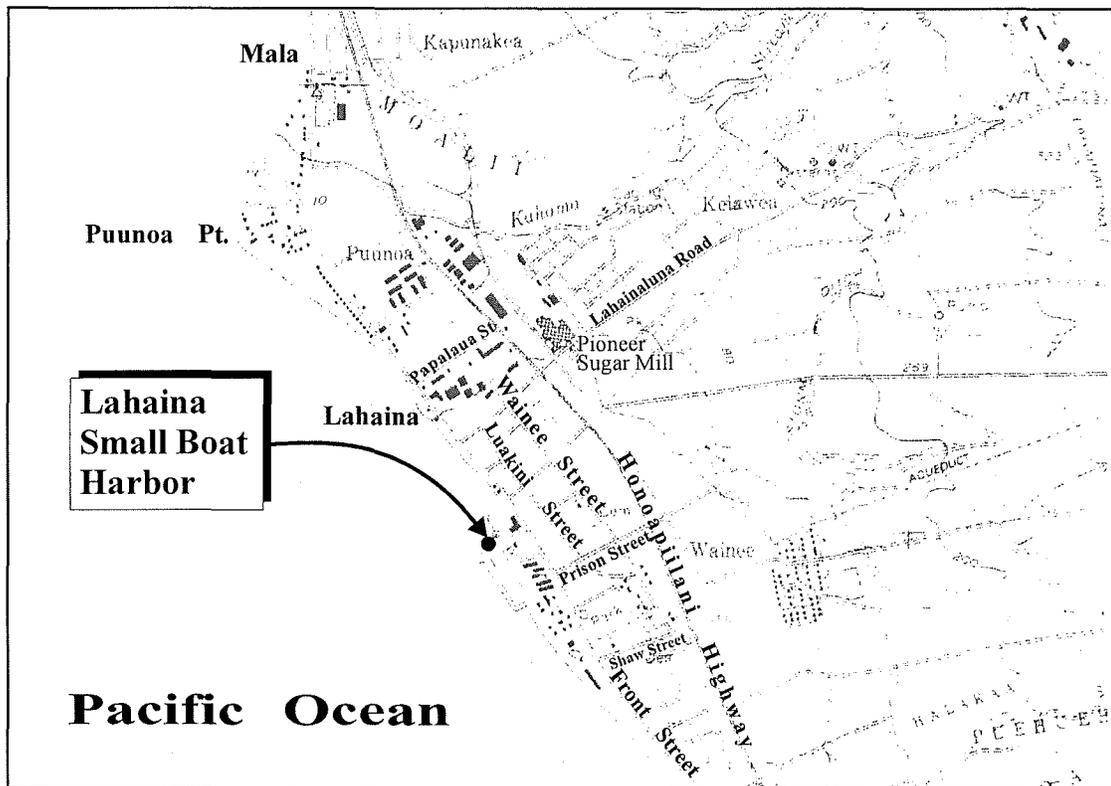
**PRIVACY & CONFIDENTIALITY:** It should be noted that materials submitted as part of the permit application become part of the public record and are thus available to the general public under the procedures of the Freedom of Information Act (FOIA). Submissions should not include any information that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

If you have any questions about this project or the permit process, please contact Ms. Vera Koskelo via telephone at (808) 835-4310 or via email at [Vera.B.Koskelo@usace.army.mil](mailto:Vera.B.Koskelo@usace.army.mil).

Tunis W. McElwain  
Chief, Regulatory Branch



**Inset**



Source: County of Maui, Data Book, 2003 and  
U.S. Geological Service, Lahaina Quad Map

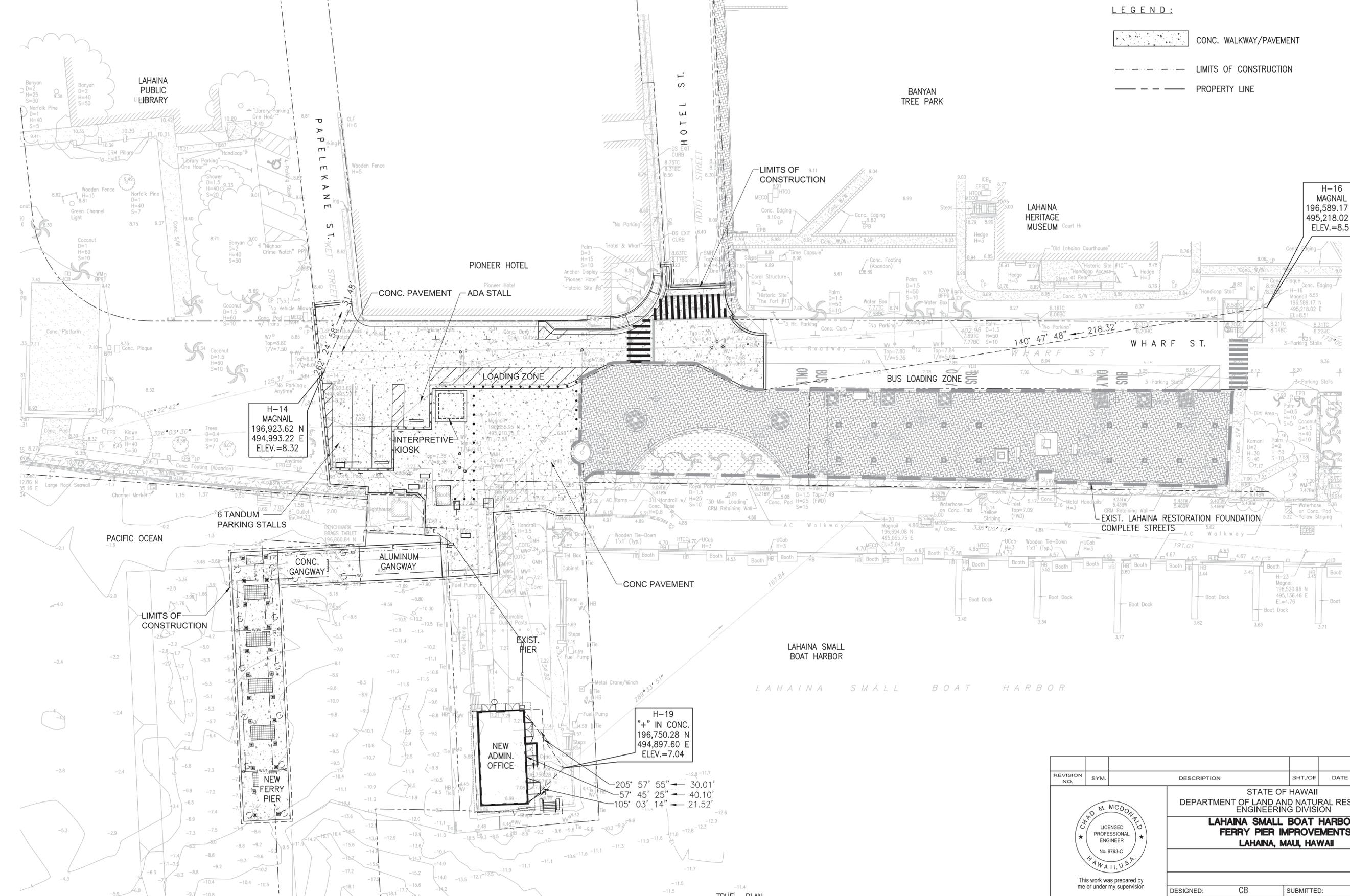
**Proposed Lahaina Small Boat Harbor Ferry Pier Improvements**  
**Regional Location Map**

NOT TO SCALE



Prepared for: State of Hawaii, Dept. Of  
Land and Natural Resources

 MUNEKIYO HIRAGA



- LEGEND:**
- CONC. WALKWAY/PAVEMENT
  - LIMITS OF CONSTRUCTION
  - PROPERTY LINE

H-14  
MAGNAIL  
196,923.62 N  
494,993.22 E  
ELEV.=8.32

H-16  
MAGNAIL  
196,589.17 N  
495,218.02 E  
ELEV.=8.51

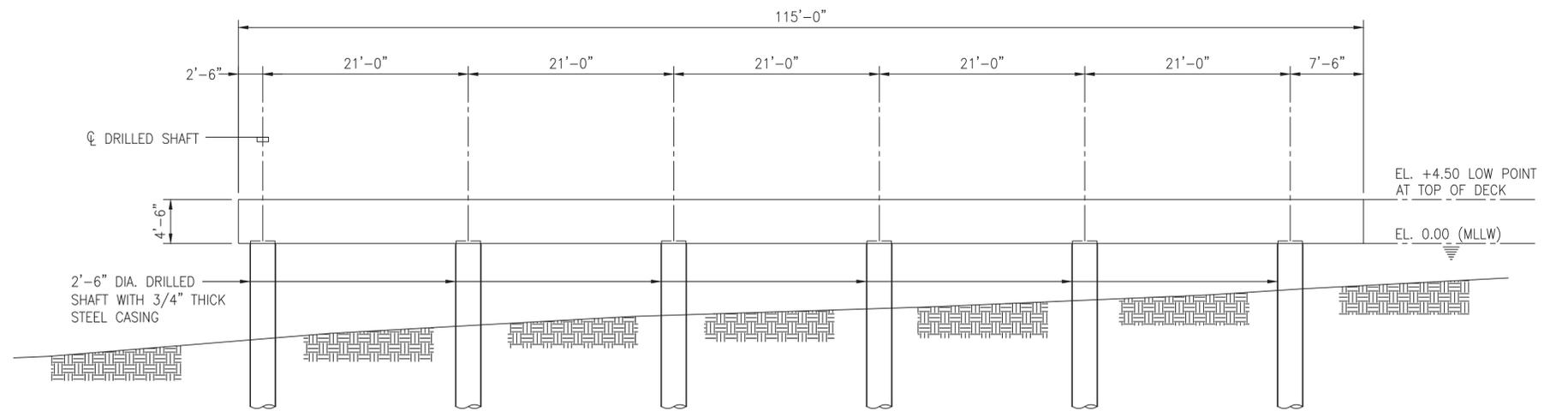
H-19  
"+" IN CONC.  
196,750.28 N  
494,897.60 E  
ELEV.=7.04

205' 57' 55" ← 30.01'  
57' 45' 25" ← 40.10'  
105' 03' 14" ← 21.52'

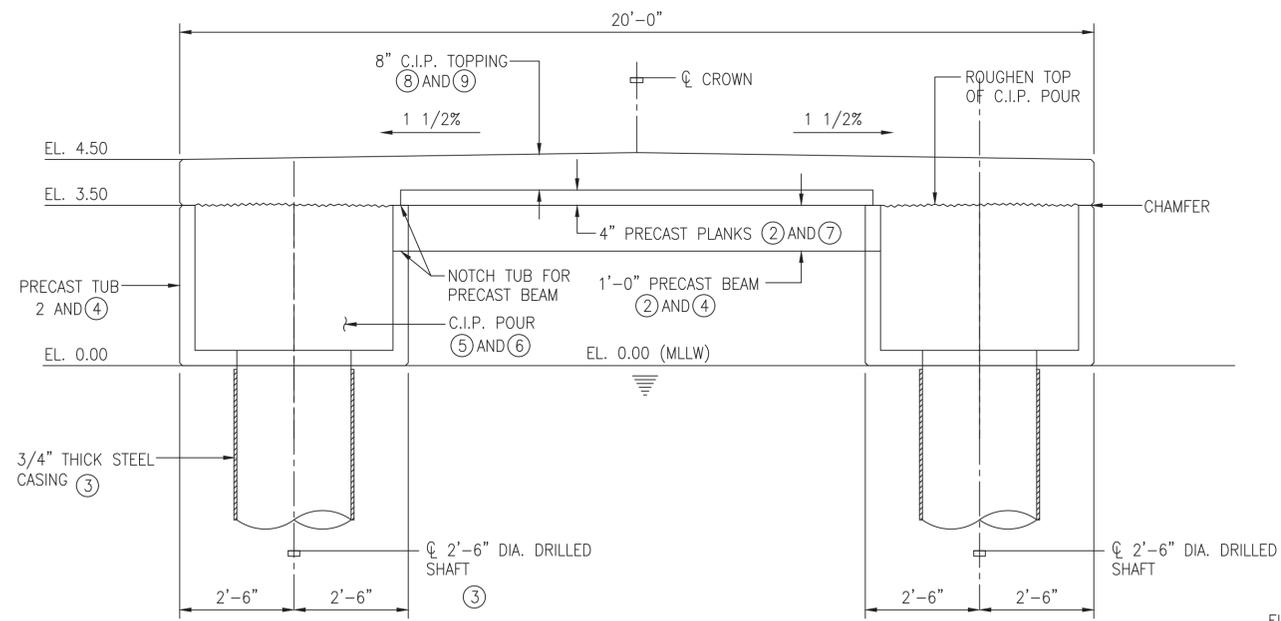
**FIGURE 2 - OVERALL SITE PLAN**  
SCALE: 1" = 20'



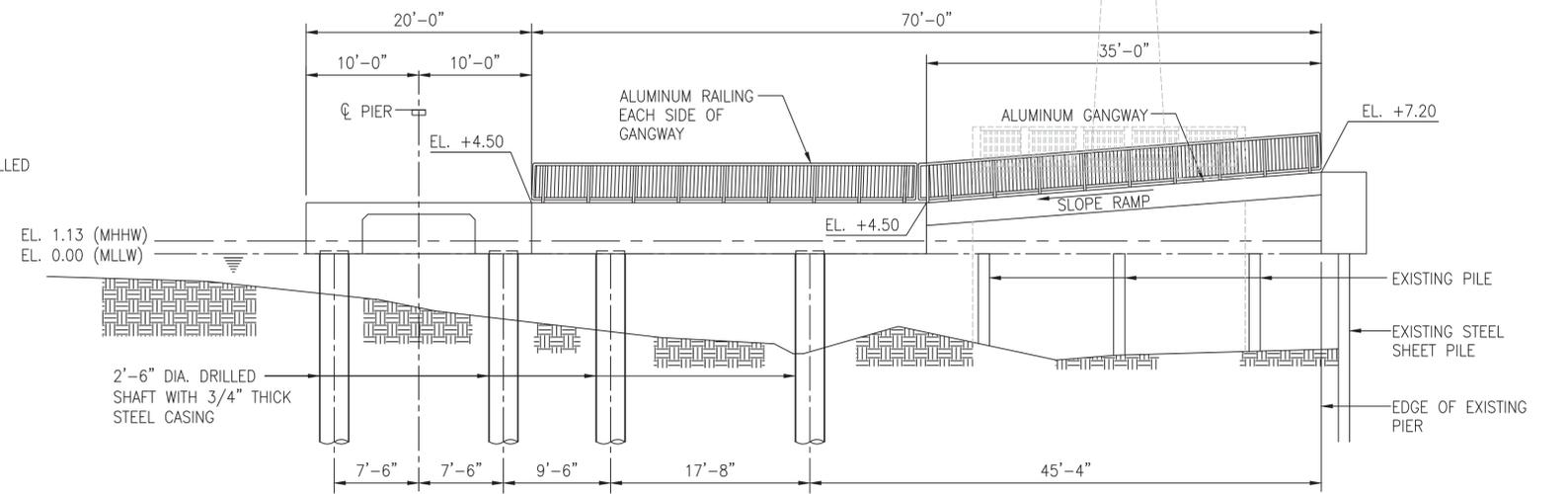
REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>LAHAINA SMALL BOAT HARBOR            FERRY PIER IMPROVEMENTS            LAHAINA, MAUI, HAWAII</b>					
This work was prepared by me or under my supervision <i>Chad M. McDonald</i> LICENSED PROFESSIONAL ENGINEER No. 9793-C HAWAII, U.S.A.					
DESIGNED:	CB	SUBMITTED:			
DRAWN:	CADD	DATE:	APRIL 2017		
CHECKED:	CM	SCALE:	AS NOTED		
APPROVED:			DRAWING NO.		
CHIEF ENGINEER		DATE			



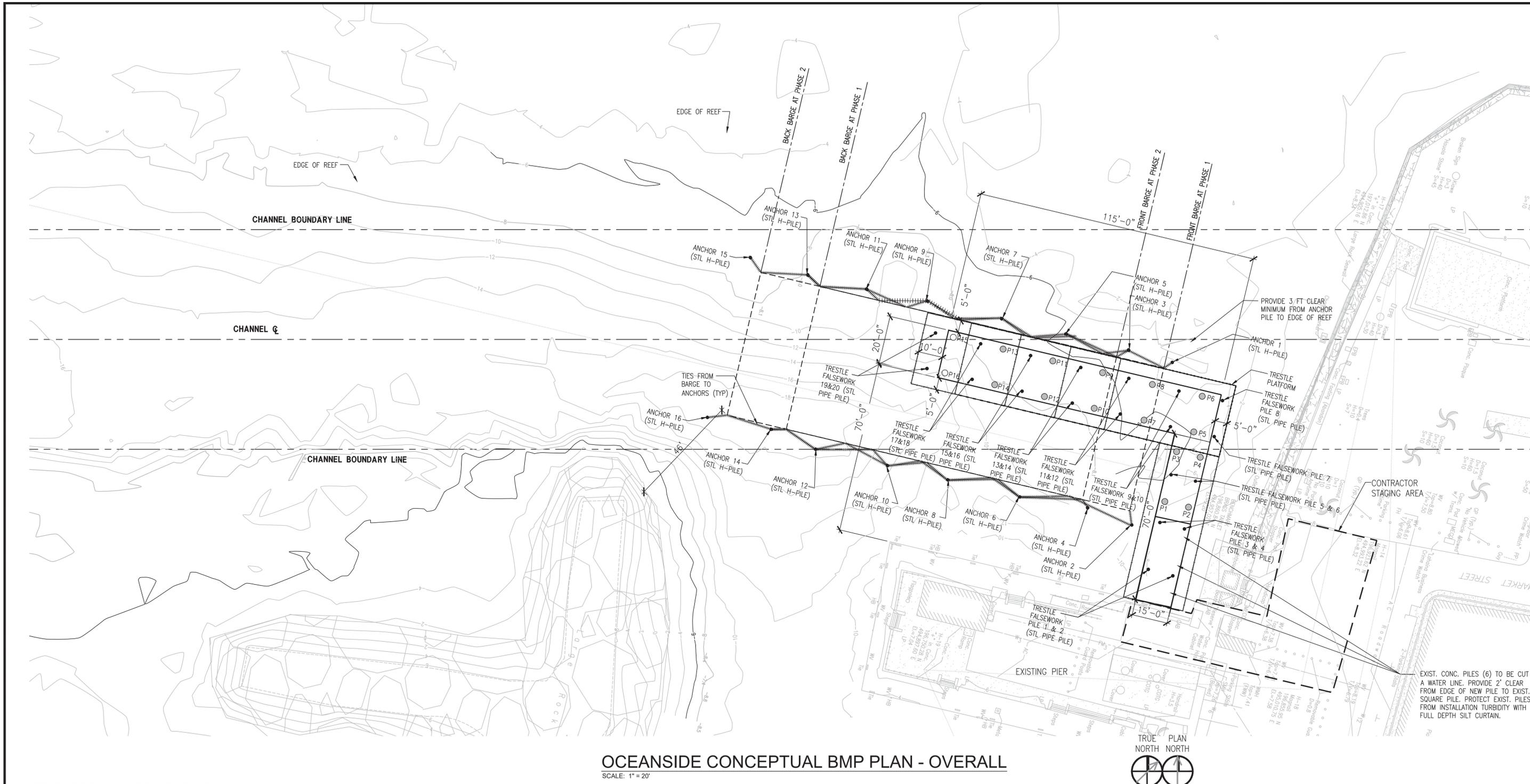
**PIER LONGITUDINAL SECTION**  
SCALE: 1/8" = 1'-0"



**SECTION THROUGH PIER BEAM**  
SCALE: 1/2" = 1'-0"



**GANGWAY LONGITUDINAL SECTION**  
SCALE: 1/8" = 1'-0"



**OCEANSIDE CONCEPTUAL BMP PLAN - OVERALL**  
SCALE: 1" = 20'

**NOTES FOR BARGE PHASING FOR PILE INSTALLATION.**

1. **BARGE**  
BARGE SIZE SHALL BE 60 FEET X 150 FEET. DRIFT SHALL BE LESS THAN 5 FEET
2. **MOORING ANCHORS**
  - a. ANCHOR 1 (STL H-PILE) TO ANCHOR 16 (STL H-PILE) ARE FOR BARGE PILE INSTALLATION PURPOSES.
3. **TURBIDITY CURTAIN & OIL BOOMS**
  - a. CURTAINS SHALL FULLY EXTEND TO SEA BOTTOM AND SHALL FULLY CONTAIN THE WORK AREA. OIL BOOMS SHALL COMPLETELY ENCOMPASS THE BARGE.
4. **STEEL H-PILE**
  - a. SIZE OF STEEL H-PILE SHALL BE HP 12X89
4. **STEEL PIPE PILE**
  - a. SIZE OF STEEL PIPE PILE SHALL 24-INCHES
4. **CONCRETE PILE**
  - a. SIZE OF CONCRETE DRILLED SHAFT SHALL BE 30" WITH 3/4" STEEL CASING X 60 FT LONG
  - b. SPOILS FROM AUGER SHALL BE REMOVED AND STORED IN WATERTIGHT CONTAINERS UNTIL THERE ARE DELIVERED TO THE STOCKPILE SITE AT MALA WHARF
5. **PILING SEQUENCE**
  - a. GANGWAY PILES, P1-P4, MAY BE INSTALLED FROM TRESTLE PLATFORM OR FROM THE BARGE LOCATED AT PHASE 1 POSITION.
  - b. POSITION THE BARGE IN SEQUENCE FROM PHASE 1 TO PHASE 2. THEN WORK CAN BE DONE FROM THE TRESTLE PLATFORMS. INSTALL PILES FOR PIER AS SHOWN ON THE PLAN.
  - c. BEFORE MOVING TO THE NEXT PHASE POSITION, REMOVE BARGE STEEL H-PILES USED IN THE PREVIOUS PHASE.
  - d. PILE INSTALLATION IS ESTIMATED TO BE COMPLETED IN 3 TO 4 MONTHS.



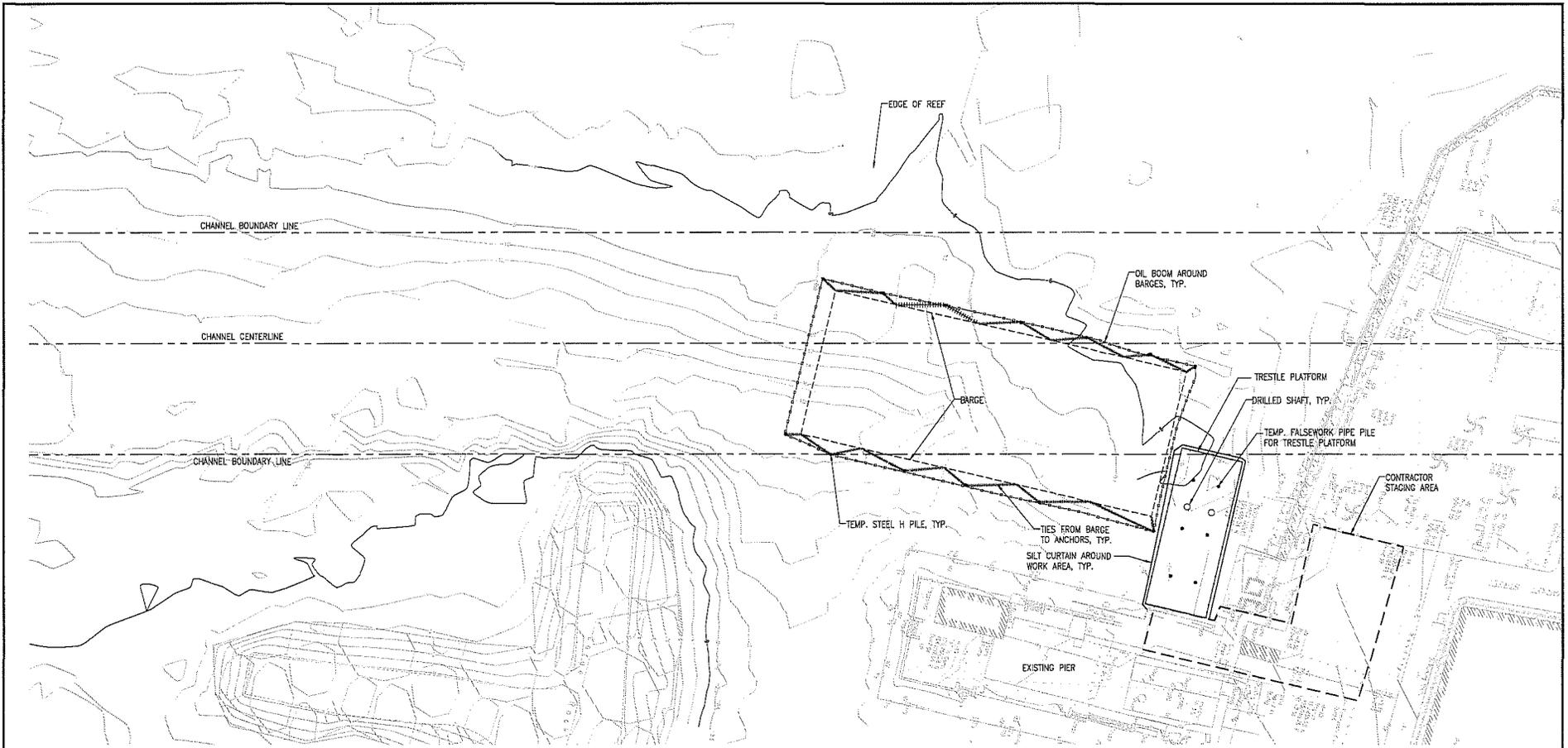
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**LAHAINA FERRY PIER IMPROVEMENTS**

LAHAINA MAUI HAWAII

Date: NOVEMBER 2016  
MAI PROJ. NO 0984-05

**FIGURE 4**



OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 1  
SCALE: 1" = 20'



WORK PERFORMED IN PHASE 1

1. INSTALL TEMPORARY STEEL PIPE PILE FROM LAND OR FROM BARGE
2. CONSTRUCT TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. DURATION: 3 WEEKS

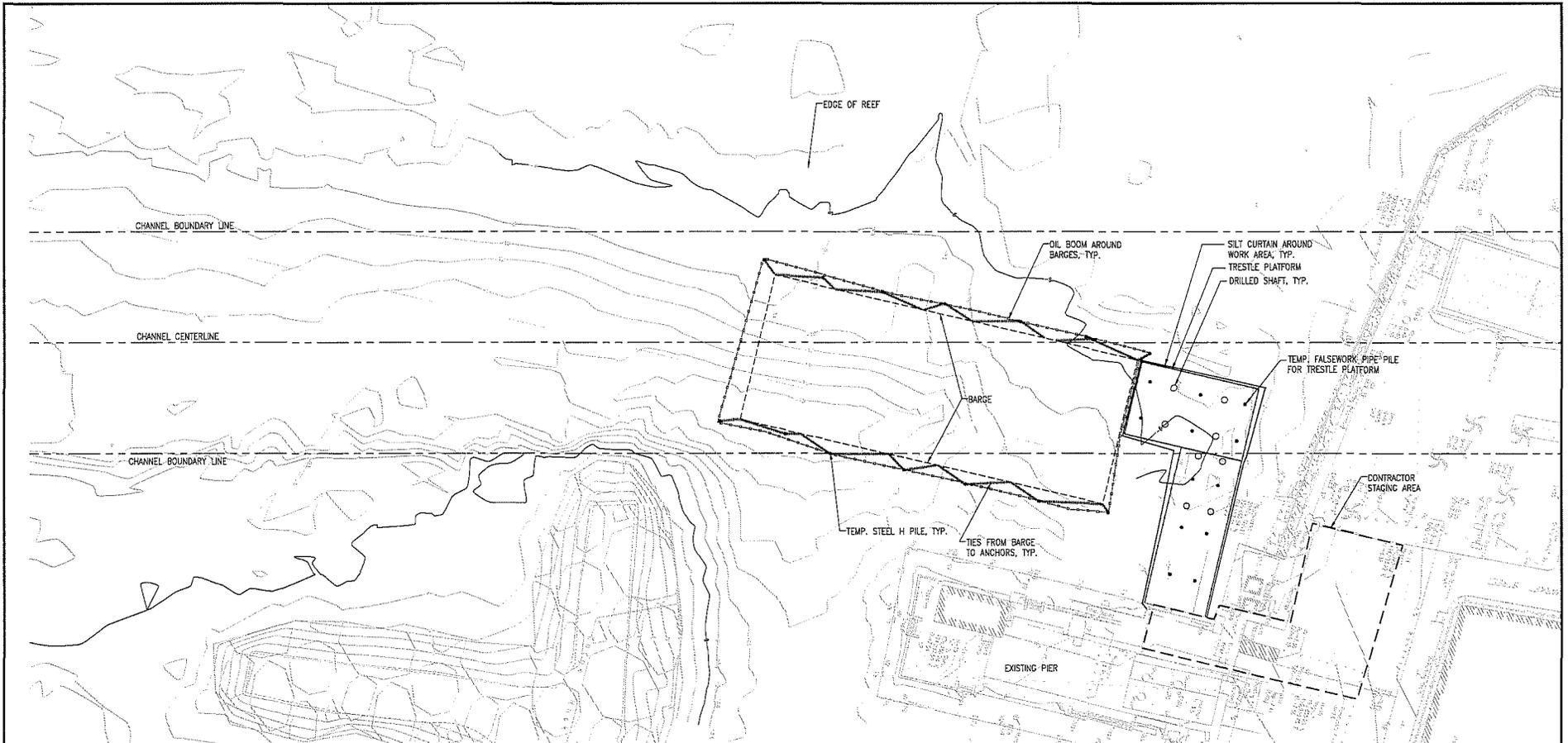
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FIGURE 4A



OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 2

SCALE 1"=30'



WORK PERFORMED IN PHASE 2

1. INSTALL TEMPORARY STEEL PIPE PILE FROM TRESTLE PLATFORM OR FROM BARGE
2. EXTEND TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. DURATION: 3 WEEKS

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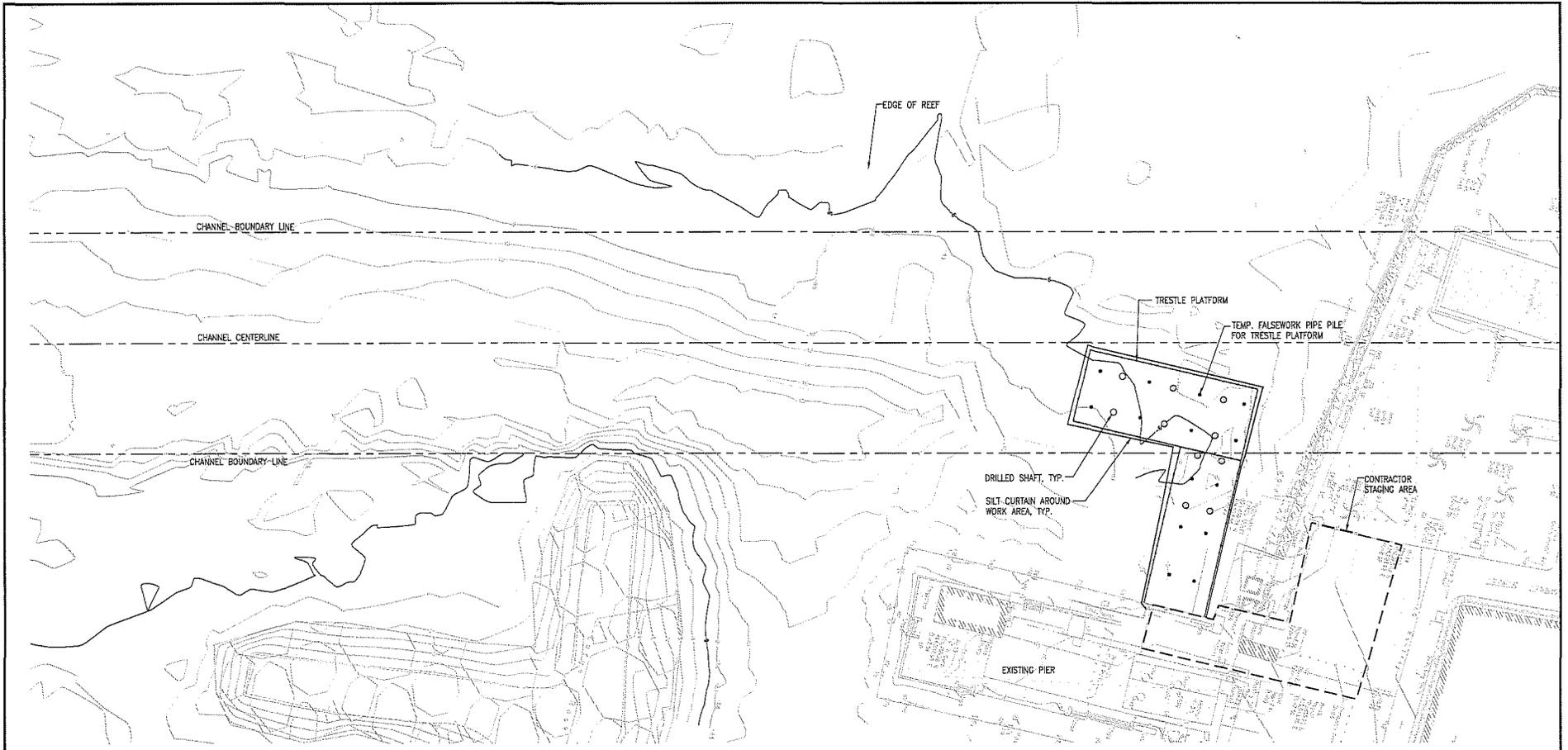


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FIGURE 4B



OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 3  
SCALE: 1" = 20'



WORK PERFORMED IN PHASE 3

1. INSTALL TEMPORARY STEEL PIPE PILE FROM TRESTLE PLATFORM
2. EXTEND TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. DURATION: 1 WEEK

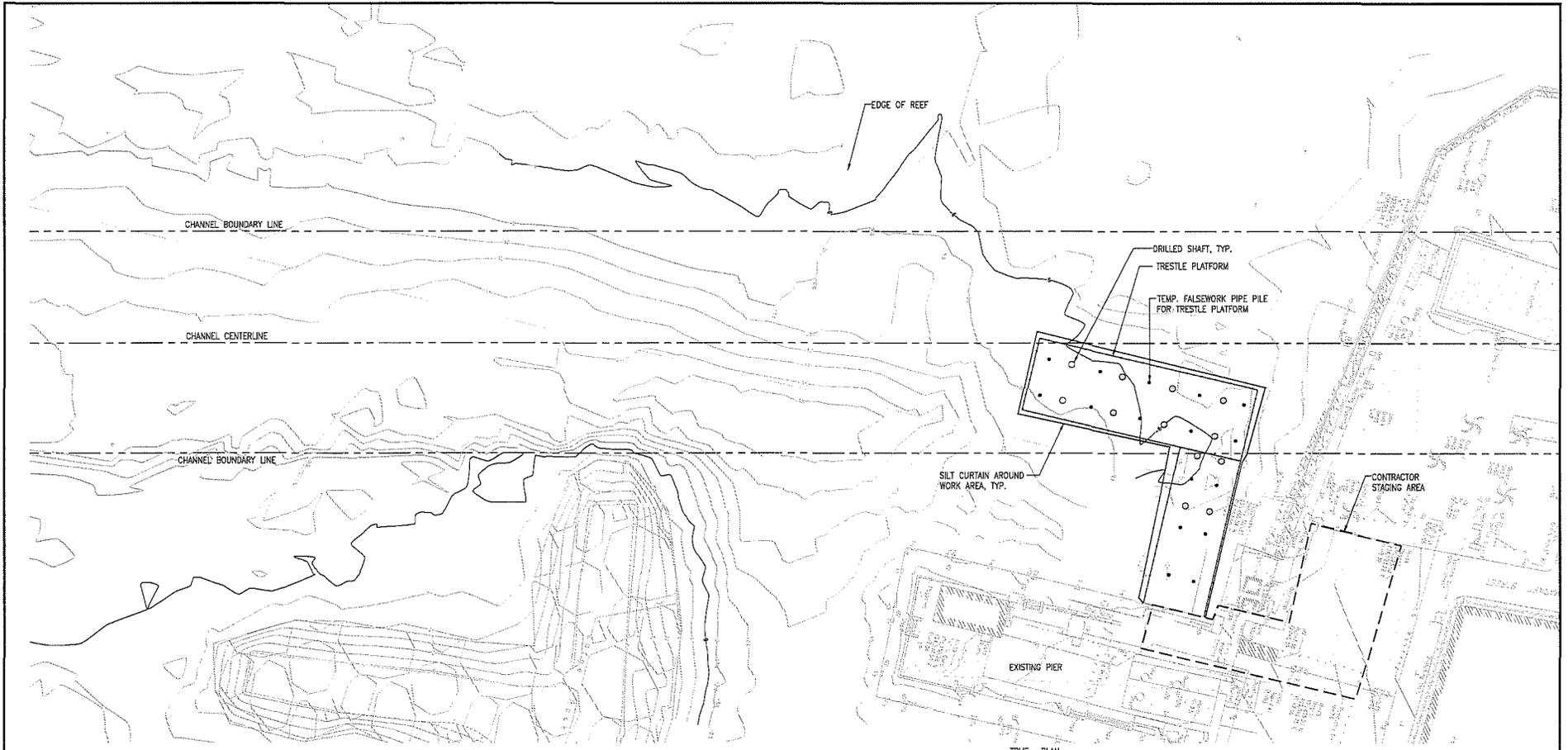
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FIGURE 4C



OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 4  
 SCALE: 1" = 20'



WORK PERFORMED IN PHASE 4

1. INSTALL TEMPORARY STEEL PIPE PILE FROM TRESTLE PLATFORM
2. EXTEND TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. DURATION: 1 WEEK

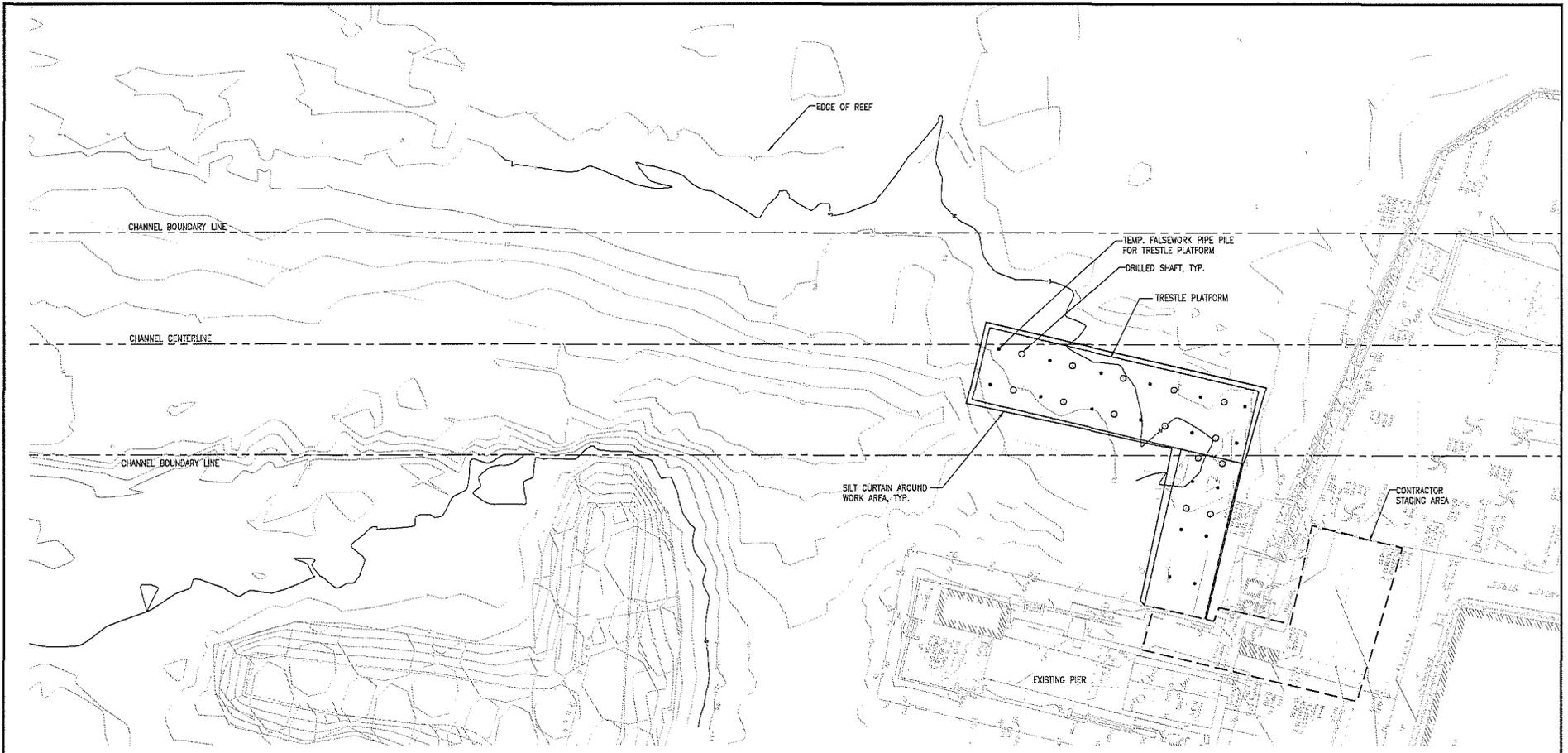
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FIGURE 4D



**OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 5**

SCALE: 1"=30'



**WORK PERFORMED IN PHASE 5**

1. INSTALL TEMPORARY STEEL PIPE PILE FROM TRESTLE PLATFORM
2. EXTEND TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. DURATION: 1 WEEK

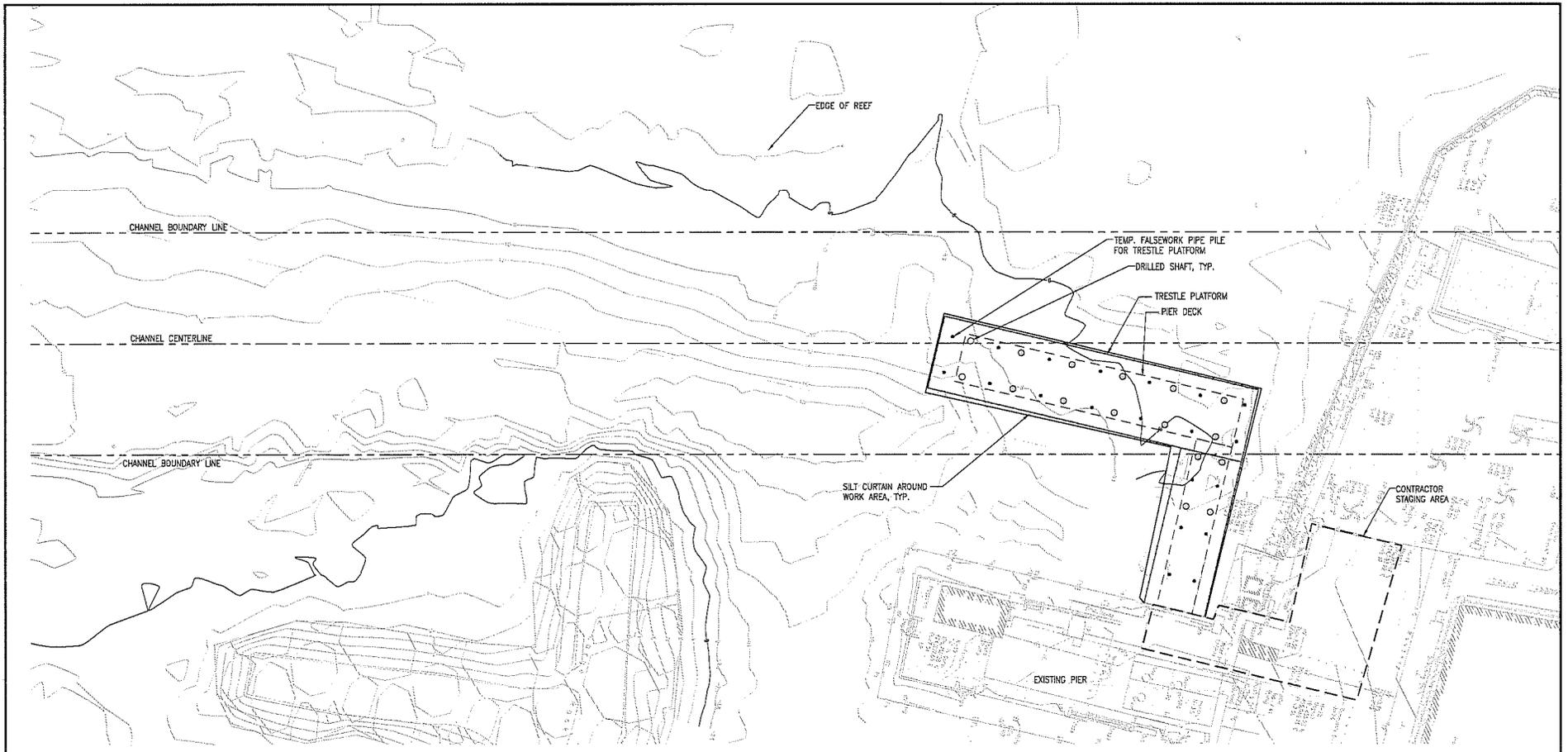

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LAHAINA MAUI HAWAII

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**FIGURE 4E**



OCEANSIDE CONCEPTUAL BMP PLAN - PHASE 6  
SCALE: 1" = 20'



**WORK PERFORMED IN PHASE 6**

1. INSTALL TEMPORARY STEEL PIPE PILE FROM TRESTLE PLATFORM
2. EXTEND TRESTLE PLATFORM
3. INSTALL DRILLED SHAFTS
4. CONSTRUCT PIER DECKING
5. REMOVE TRESTLE PLATFORM
6. DURATION: 9 WEEKS

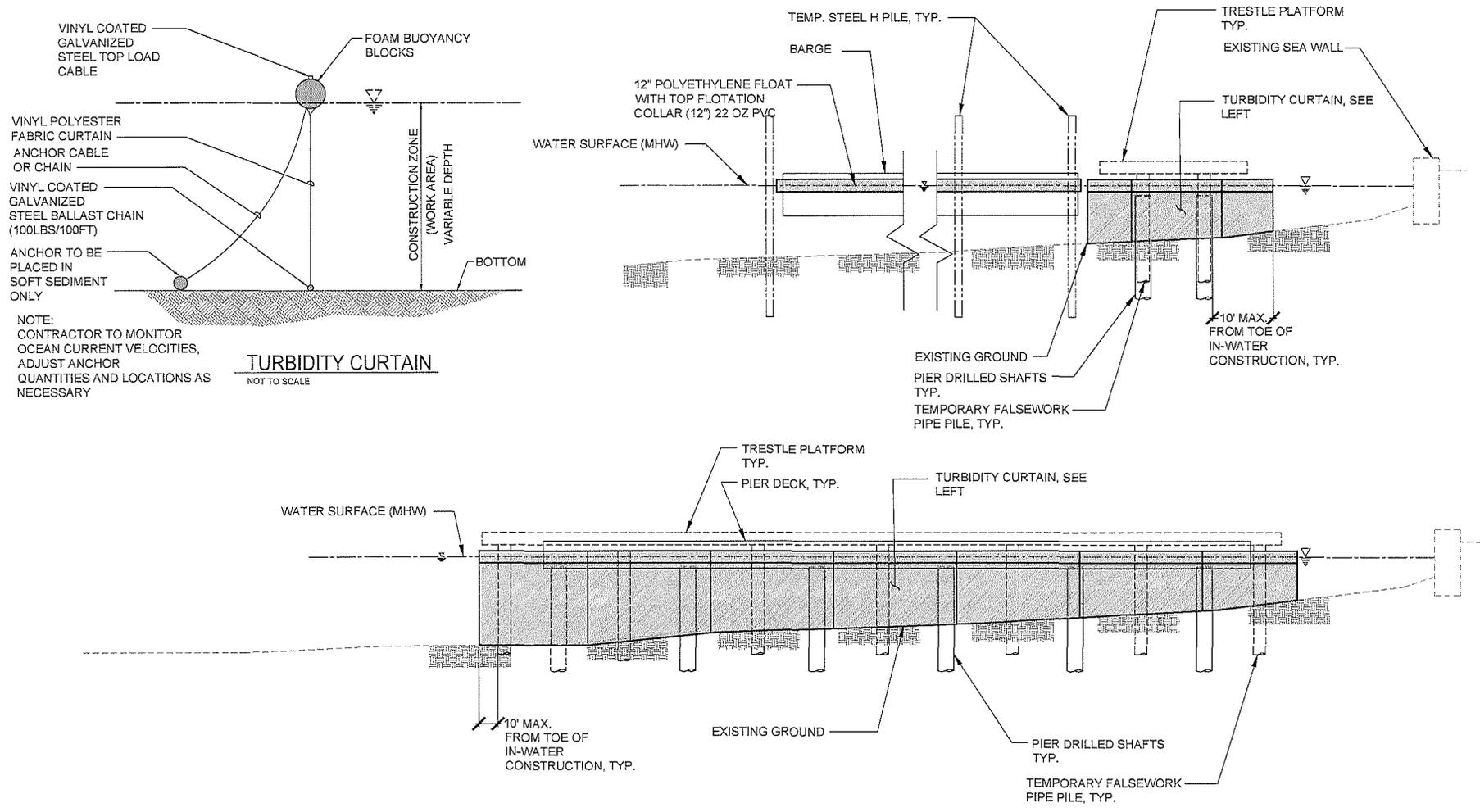

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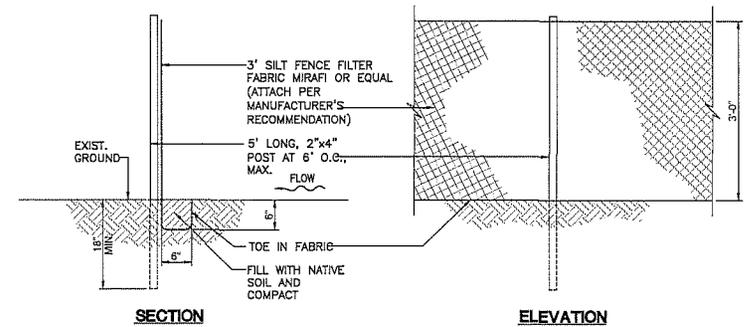
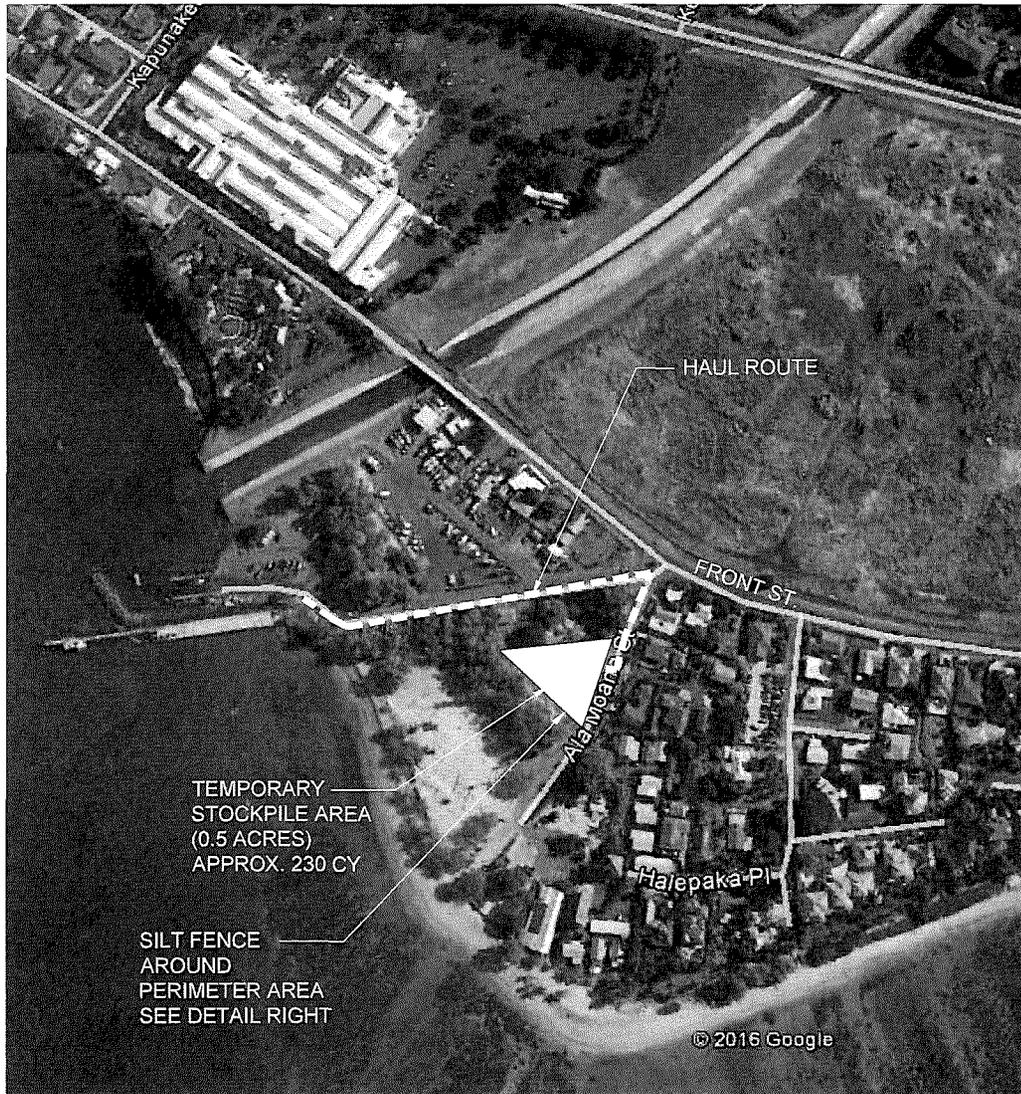
**FIGURE 4F**



**FIGURE 5. TYPICAL TURBIDITY CURTAIN SECTION**

NTS



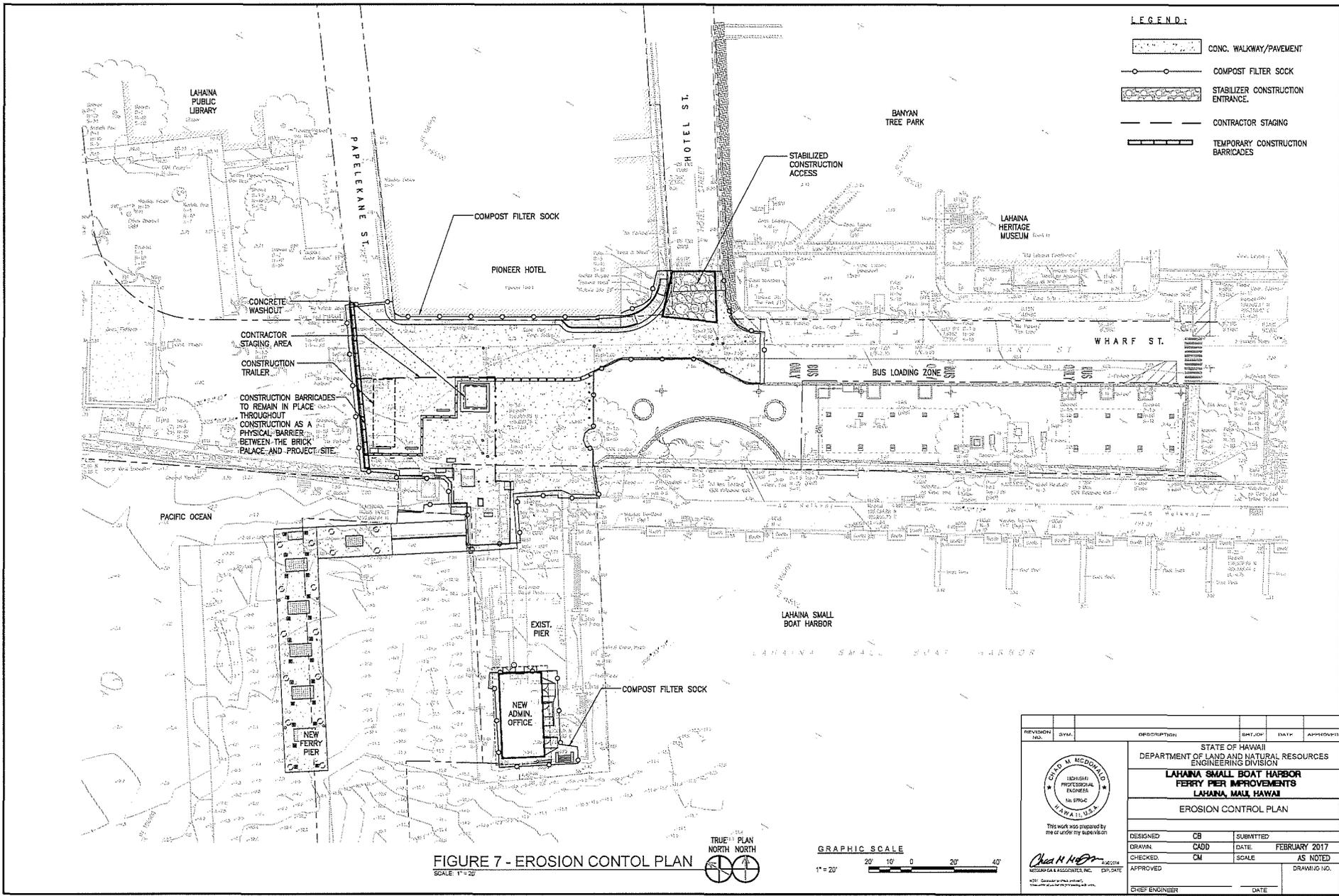


**SILT FENCE DETAIL**  
NTS

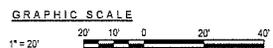
**FIGURE 6. TEMPORARY STOCKPILE AREA DETAILS**

NTS



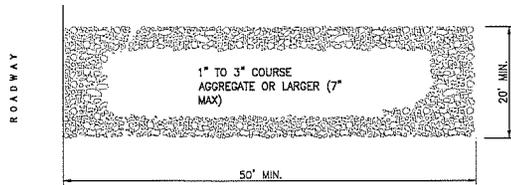


**FIGURE 7 - EROSION CONTROL PLAN**  
SCALE: 1" = 20'



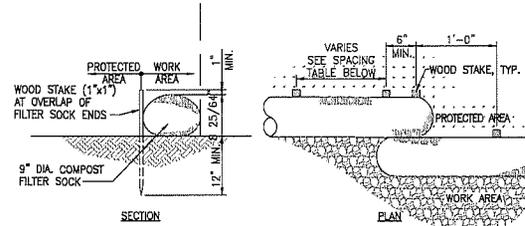
- LEGEND:**
- CONC. WALKWAY/PAVEMENT
  - COMPOST FILTER SOCK
  - STABILIZER CONSTRUCTION ENTRANCE
  - CONTRACTOR STAGING
  - TEMPORARY CONSTRUCTION BARRICADES

REVISION NO.	DATE	DESCRIPTION	DRAWN	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
<b>LAHAINA SMALL BOAT HARBOR FERRY PIER IMPROVEMENTS LAHAINA, MAUI, HAWAII</b>					
EROSION CONTROL PLAN					
DESIGNED: CB		SUBMITTED: FEBRUARY 2017			
DRAWN: CADD		DATE: AS NOTED			
CHECKED: CM		SCALE: AS NOTED			
APPROVED:		DRAWING NO.:			
CHIEF ENGINEER:		DATE:			



- NOTES:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

**1 STABILIZED CONSTRUCTION ACCESS**  
SCALE: 3/8" = 1'-0"



- NOTES:**
1. COMPOST SHALL NOT CONTAIN BIOSOLIDS & SHOULD BE CONSISTENT WITH EPA GUIDELINES
  2. WOOD STAKES ONLY REQUIRED AT CONNECTION BETWEEN FILTER SOCKS AS SHOWN ON DETAIL PLAN

**WOODEN STAKE ANCHOR SPACING:**

SLOPE	SPACING
<4:1	NOT REQUIRED
4:1 TO 3:1	10 FT. O.C.
>3:1 TO 2:1	5 FT. O.C.
>2:1	5 FT. O.C.

**3 COMPOST FILTER SOCK**  
NOT TO SCALE

**EROSION CONTROL NOTES**

**TEMPORARY EROSION CONTROL NOTES:**

1. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF LAND TO BE EXPOSED AT ANY TIME.
2. EXPOSED AREAS THAT ARE NOT AT FINAL GRADE AND ARE EXPECTED TO BE EXPOSED FOR MORE THAN 30 DAYS SHALL BE PLACED WITH A VEGETATIVE COVER OR BE MULCHED (AT A RATE OF 45 CUBIC FEET PER 1,000 SQUARE FEET) IN ORDER TO PREVENT EROSION AND SILT RUNOFF.
3. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

**PERMANENT EROSION CONTROL MEASURES:**

1. ALL SLOPES AND EXPOSED AREAS SHALL BE PAVED, SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED.
2. 2:1 SLOPES SHALL BE TREATED WITH GEOFABRIC OR TREATED WITH SOIL CONDITIONER TO AID IN THE ESTABLISHMENT OF TURF/ PLANTING.

**BMP NOTES:**

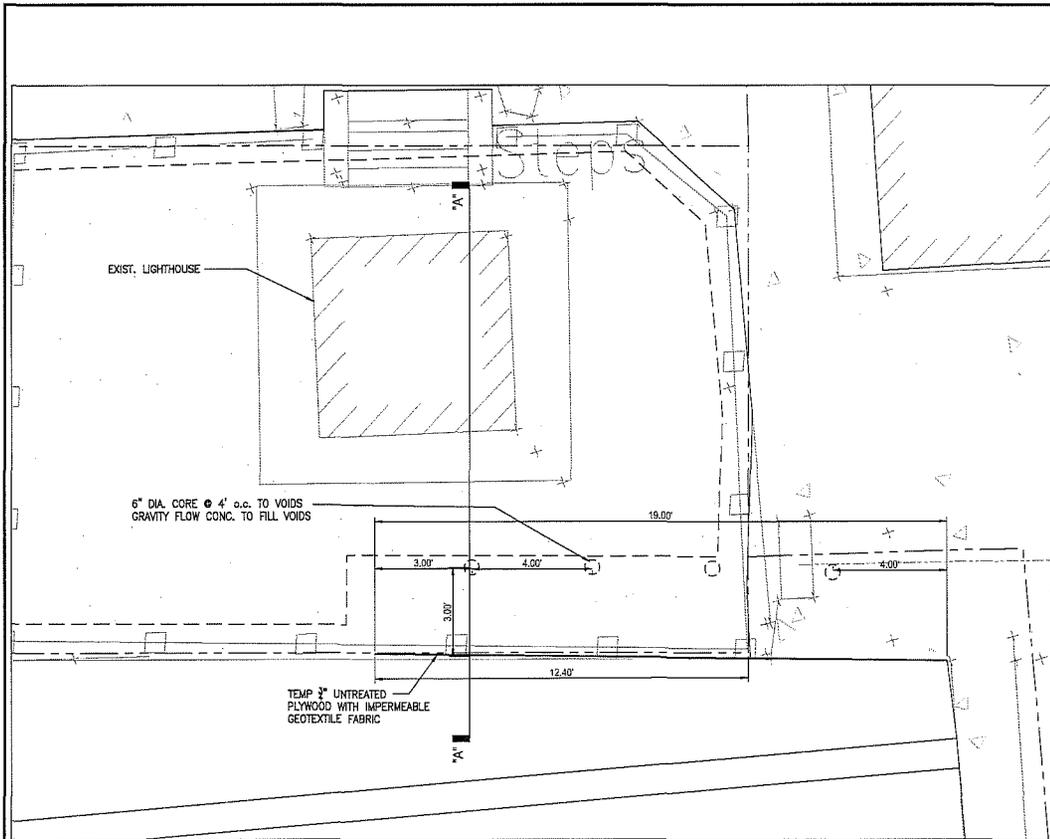
**TEMPORARY EROSION CONTROL MEASURES:**

1. PRIOR TO CLEARING LAND FOR GRADING, THE TEMPORARY EROSION CONTROL MEASURES, AS REFLECTED ON THE EROSION CONTROL PLAN SHALL BE INSTALLED.
2. AREAS NOT WITHIN THE LIMITS OF GRADING SHALL REMAIN VEGETATED DURING GRADING OPERATIONS.
3. SILT WHICH HAS ACCUMULATED ON COMPOST FILTER SOCK SHALL BE REMOVED AND DISPOSED OF ON A BI-WEEKLY BASIS.
4. WHEN CLEARED OR GRUBBED AREAS ARE NOT TO BE GRADED OR DISTURBED FOR 30 DAYS OR MORE, SEED, PLANT OR HYDROSEED TEMPORARY VEGETATION.
5. THE CONTRACTOR'S EQUIPMENT STORAGE AREAS SHALL BE PROTECTED THROUGH THE USE OF EARTH BERMS AND/OR ABSORPTION MATERIALS TO PREVENT POLLUTANTS FROM DISCHARGING INTO STATE WATERS. THE CONTRACTOR SHALL INSPECT AND MAINTAIN STORAGE AREAS.
7. ALL BMP AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.

**SEQUENCE FOR SEDIMENT CONTROL:**

1. INSTALL COMPOST FILTER SOCK, GOOD NEIGHBOR/DUST FENCE, STABILIZED CONSTRUCTION ACCESS ENTRY/EXIT, AND TEMPORARY INLET PROTECTION AT EXISTING CATCH BASINS.
2. COMMENCE GRADING OPERATIONS.
3. GROUND COVER, SUCH AS PAVING, GRASSING AND MULCHING TO BE INSTALLED IMMEDIATELY AFTER FINAL GRADES ARE ESTABLISHED.
4. AT COMPLETION OF THE PROJECT, ALL COMPOST FILTER SOCKS INCLUDING THE COMPOST MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>LAHANA SMALL BOAT HARBOR FERRY PIER IMPROVEMENTS LAHANA, MAUI, HAWAII</b>					
 <p>This work was prepared by me or under my supervision.</p> <p><i>Chad M. McDonnell</i> CHIEF ENGINEER</p>					
DESIGNED	CB	SUBMITTED			
DRAWN	CADD	DATE	FEBRUARY 2017		
CHECKED	CM	SCALE	AS NOTED		
APPROVED		DATE	DRAWING I.I.G.		
CHIEF ENGINEER		DATE			

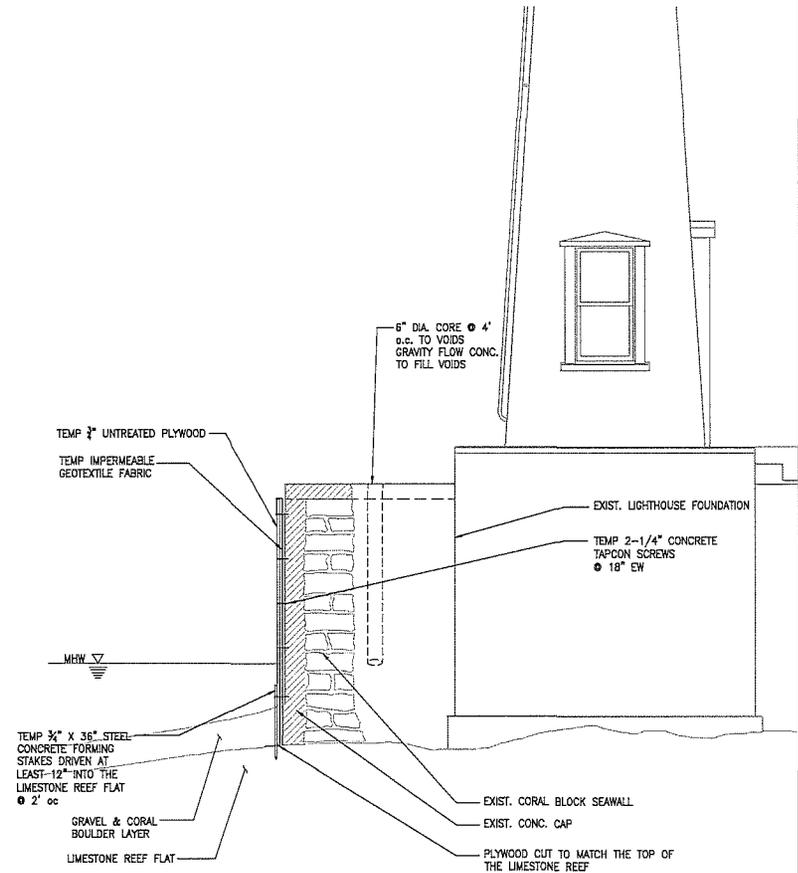


1 SEAWALL REPAIR PLAN VIEW  
 C-19 SCALE: 1" = 2'  
 TRUE PLAN NORTH NORTH

NOTES:

1. PRIOR TO THE START OF THE SEAWALL REPAIR, CLEAN AND REMOVE ALL LOOSE CONCRETE AND ROCK DEBRIS.
2. VERIFY LOCATION OF 6" CORE HOLES WITH ENGINEER PRIOR TO DRILLING.
3. CONCRETE POUR SHALL BE CONTINUOUSLY MONITORED FOR LEAKS

FIGURE 8



SECTION A-A - SEAWALL REPAIR SECTION  
 SCALE: 1" = 2'



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APPROVED: <i>Chad M. McDermott</i>		DRAWING NO.		
CHIEF ENGINEER		DATE		

JOB NO. B46XM74A/B46CM71A

SHEET NO. OF 52 SHEETS