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: November 16, 2012
Expiration Date: **December 16, 2012**
Permit File Number: POH-2007-00035

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. Stuart Allen, Board President, Vacation Internationale

AGENT: Mr. James Barry, Sea Engineering, Inc.

LOCATION: On the shoreline of the Pacific Ocean at Hololani Resort Condominiums, located at 4401 Lower Honoapiilani Road, City of Lahaina, Island of Maui, Hawaii (TMK: (2) 4-3-010:009).
Latitude: 20.97296 N Longitude: -156.67956 W

WORK: The proposed project is the construction of a hybrid shore protection structure that combines a vertical seawall with a sloping rock rubble mound revetment. The structure will protect approximately 370 feet of the approximately 400 feet of shoreline that fronts the Hololani. The remainder of the shoreline fronting the Hololani property will be left intact as a buffer to minimize end-effect related erosion of the neighboring property to the south. The north end of the structure will stop and return at the edge of the drainage easement. The maximum surface area to be filled within Waters of the U.S. is 7,440 square feet. For additional information on the proposed work as well as proposed site-specific best management practices (BMPs) to be implemented, please see the following attachments.

PURPOSE: Permanent shoreline erosion protection for the Hololani Resort Condominiums.

ADDITIONAL INFORMATION: Please see attached.

MITIGATION: To avoid impacts to waters of the U.S., the project has been designed in such a way that much of the proposed work will occur above the mean high water mark, and that the proposed excavation and construction will occur in the dry with minimal placement of fill

material below the high tide line required. To further minimize impacts to waters, as well as prevent adverse effects to endangered species, BMPs, particularly to control erosion and turbidity, are proposed to prevent detrimental impacts to the aquatic resources present in the near-shore environment adjacent to the proposed project site. Please see the attached information for details of the proposed BMPs.

WATER QUALITY CERTIFICATION: The U.S. Army Corps of Engineers (USACE) 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 a certification or waiver of certification from the **State of Hawaii Department of Health – Clean Water Branch** 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 the applicant to certify that the described activity affecting land or water uses in the Coastal Zone complies with the enforceable policies of the State/Territory's approved Coastal Zone Management Program and that the activity will be conducted in a manner consistent with the Program. The USACE may not issue a DA permit until the **Office of State Planning, Department of Business, Economic Development, and Tourism** has concurred with the applicant's certification.

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 clearly and concisely state the reasons and rationale for holding a public hearing.

CULTURAL RESOURCES: The latest published version of the National Register of Historic Places (NRHP) has been consulted to assist in determining the presence or absence of historic properties, including those listed in or eligible for inclusion in the NRHP. There are no listed or eligible properties in the vicinity of the worksite. Consultation of the NRHP constitutes the extent of cultural resource investigations by the District Engineer at this time, and he is otherwise unaware of the presence of such resources. This application is being coordinated with the State Historic Preservation Office (SHPO). Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in the final assessment of the proposed work.

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. Concurrently with the issuance of this public notice, the USACE will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat and provide coordination letters to the NMFS and/or USFWS, as required, with the USACE's effects determination for the proposed project.

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. Concurrently with the issuance of this public notice, the USACE will evaluate the potential impacts to EFH and provide a coordination letter to the NMFS, as required, with the USACE's effects determination for the proposed project.

SPECIAL AREA DESIGNATION: None

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 of dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). The USACE's 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 USACE's 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.

USACE 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 USACE 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.

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 commentor's name, address, and phone number. Please include the following name and reference number: **Vacation Internationale, POH-2007-00035.**

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 Ms. Emilee Stevens at **(808) 835-4310** if further information is desired concerning this notice.

Additional Project Information and Project Drawings (16 pages) are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

Attachments

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 Expires December 31, 2004

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. 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. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be processed 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 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 COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE *(an agent is not required)*
Mr. Stuart Allen, Board President	James Barry, Sea Engineering, Inc.
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
c/o Vacation Internationale 1417 116th NE Bellevue, WA 98004	Makai Research Pier 41-305 Kalanianaole Highway Waimanalo, HI 96795
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE	**10. AGENT'S PHONE NUMBERS WITH AREA CODE**
a. Residence	a. Residence (808) 265-2870
b. Business (425) 454-3605	b. Business (808) 259-7966

11. STATEMENT OF AUTHORIZATION

I hereby authorize James Barry, Sea Engineering, Inc. 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.

APPLICANT'S SIGNATURE	DATE
	10-8-12

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE *(see instructions)*

Hololani Shore Protection

13. NAME OF WATERBODY, IF KNOWN *(if applicable)*	14. PROJECT STREET ADDRESS *(if applicable)*
Pailolo Channel	4401 Lower Honoapiilani Road Lahaina, Maui, HI 96761
15. LOCATION OF PROJECT	
Maui (COUNTY) Hawaii (STATE)	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

20° 58.373'N, 156° 40.776'W TMK (2) 4-3-010:009

17. DIRECTIONS TO THE SITE

From Kapalua Airport: proceed makai down the hill from the airport, cross Honoapiilani Highway to Lower Honoapiilani Road; turn right and proceed for 0.7 miles. Property has twin 8-story buildings on makai side of the road.

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

Please see attachment and Draft Environmental Assessment.

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

Please see attachment and Environmental Assessment.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Please see attachment and Environmental Assessment.

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

Please see attachment and Environmental Assessment.

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

Please see attachment and Environmental Assessment.

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

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

1. Pohailani Condominiums, 4435 Lower Honoapiilani Rd Lahaina, HI 96761; managment company: Hawaiiana Management Company, 140 Hoohana Street, Suite 210,Kahului, Maui, HI 96732

2. Royal Kahana Condominiums, 4365 Lower Honoapiilani Rd, Lahaina, HI 96761

25. List of Other Certifications 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
State DOH	Sect. 401 WQC	Pending	Pending (11/12)		
State DLNR	CDUP	Pending	Pending (11/12)		
Maui Cnty	SSV	Pending	Pending (11/12)		
Maui Cnty	SMA	Pending	Pending (11/12)		

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

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the 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 — DATE: 10-9-12

SIGNATURE OF AGENT — DATE: 10/16/12

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.

18 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.

Sea Engineering, Inc.
Makai Research Pier • 41-305 Kalanianaole Hwy • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • FAX (808) 259-8143 • E-mail: sei@seaengineering.com • Website: www.seaengineering.com

HOLOLANI SHORE PROTECTION PROJECT:

Attachment to Eng Form 4345, *Application for Department of the Army Permit*

Note: Additional information is found in the attached Draft Environmental Assessment (DEA): *Draft Environmental Assessment for Permanent Shore Protection of the Hololani Resort Condominiums*

Block 18: Nature of Activity

Hololani Resort Condominiums, located along 400 feet of the Kahana Coast in West Maui, consists of twin 8-story building with 63 apartments. The project location is shown in Figure 1. The shoreline is dominated by a tall erosion scarp within the native volcanic clay substrate. The sand beach fronting the property is seasonally dynamic, with summer seasonal waves and occasional Kona storms causing sand accretion, and winter seasonal waves eroding the beach. The shoreline is eroding, with an average annual erosion rate of around 0.8 feet per year.

The need to stabilize this coastline has been apparent for some time. Temporary shoreline stabilization structures were authorized by County and State agencies as far back as 1988. The most recent temporary structure, a combination of geotextile sand bags and rock mattresses, has not shown any apparent impacts on the seasonal behavior of the beach, though it has helped in slowing the erosion and has provided a more durable coastline for mitigating coastal natural hazards. However, the temporary measures are not an adequate long-term solution.

Since the lot was originally partitioned in 1959, it has eroded almost 40 feet, moving the active erosion scarp to within 15 feet of northern building's corner in 2007. Nearly 5,000 square feet of property has eroded between the two buildings and the shoreline. This has significantly reduced the buffer area between the inhabited structures and the shoreline that affords protection from potential damage due to large wave events.

The proposed action is the construction of a hybrid shore protection structure that combines a vertical seawall with a sloping rock rubble mound revetment. The proposed the layout of the structure is shown in Figure 2 (Figure 1-6 in the attached DEA), and the design cross-section

is shown in Figure 3 (Figure 1-7 in the attached DEA). The structure will protect approximately 370 feet of the approximately 400 feet of shoreline that fronts the Hololani. The remainder will be left as a buffer to minimize end-effect related erosion of the neighboring property to the south. The north end of the structure will stop and return at the edge of the drainage easement, although an alternative is presented in Section 2.4.1 of the DEA that will improve the easement area as well. The hybrid structure has the following benefits:

1. The structure footprint has been minimized in order to fit within the original property boundaries and have the least excursion into the State Conservation District and navigable waters of the United States;

2. The rock rubble mound revetment that forms the seaward toe of the structure will minimize wave reflection and allow seasonal sand accretion;

3. The crest of the rock rubble mound revetment is 5 ft in width, and will provide lateral shoreline access when seasonal conditions prevent the formation of a sand beach.

4. The structure offers long-term erosion protection for the Hololani property.

5. Preventing erosion of the native clay embankment will help prevent the formation of turbidity in nearshore waters during high wave conditions.

The top of the toe of the rock revetment will be at an elevation of - 0.5 ft MSL, and the crest of the revetment will be at an elevation of +6 ft. The rock revetment has been designed for a 50-year wave event.

The wall will be constructed of vinyl sheet pile (Shoreguard SG950, or equivalent), with a concrete cap at an elevation of approximately +12 ft, and driven to a depth of -10 ft or rock refusal. The sheet pile wall will have a line of soil anchors spaced at 6-ft centers for reinforcement. The vinyl product will not corrode, is resistant to degradation from ultra-violet sunlight, and is typically guaranteed for 50 years.

Block 19: Proposed Project Purpose

The temporary shore protection in-place at the Hololani was authorized by both the State Department of Land and Natural Resources Office of Conservation and Coastal Lands (DLNR-OCCL) and the Maui County Planning Department (MCPD). The letter of authorization from DLNR-OCCL, dated February 6, 2007 (see DEA, Appendix A), affirms

the existing threat to the Hololani property:

> *Based on the information presented and a site visit by our staff on January 11, 2007 the large multi-story structure is in danger of collapse without immediate shore protection and justifies a temporary emergency response.*

The temporary structure was viewed as an interim response to the existing threat:

> *The DLNR understands that during time the temporary sandbag/Tensar structure is in place, the landowner(s) intend to apply for a shoreline setback variance for an engineered rock revetment placed landward of and to replace the proposed sand bag structure, the installation of the bags is intended to be temporary until the required permits are obtained for a more permanent rock revetment.*

The purpose of the project is to provide the Hololani Resort Condominiums with permanent shore protection that will protect the condominium buildings from wave damage and alleviate the necessity of implementing emergency measures. Pending Federal, State, and County permit authorizations, the project will ideally begin in the Spring of 2013, and will last for 3 to 6 months.

Block 20: Reasons for Discharge

The proposed project is a hybrid seawall and rock rubblemound revetment. As shown in the cross section drawing (Figure 3), the toe of the revetment will be placed at -5.5 ft MSL (approximately -6.5 ft if a Tensar rock mattress is used for soil stabilization – see DEA, Section 4.1.14). The assumed line of DA jurisdiction is the MHHW elevation. Although the MHHW elevation has been mapped as being seaward of the proposed structure (see plan view, Figure 2), the beach, and consequently the MHHW line, varies with seasonal sand deposition. A letter of inquiry to the Regulatory Branch dated November 30, 2011 showed the location of the MHHW as surveyed on June 6, 2011. The response from the Regulatory Branch, dated January 27, 2012 (File No. POH-2007-00035) indicated that while a permit may not be required, it would be advisable given the variable nature of the beach and the potential need to place temporary containment devices (sand bags and sheet pile) during construction of the revetment toe. In concurrence with the DA, it is advisable for the project to have DA permits rather than risk a shutdown should the sand beach disappear during construction.

A suggested construction method is shown in Figures 4 and 5, which illustrate a two-phase operation (see DEA Section 2.5). In Phase 1, an excavator or back-hoe accesses the shoreline from the drainage easement (see Figures 1 and 2 for location) and works progressively south by excavating and constructing the revetment toe, and building a temporary road bed. The toe excavation is protected by temporary cantilevered steel sheet pile shoring. In Phase 2, the

machinery works back north, dismantling the road, building the rest of the revetment, and removing all remaining temporary shoring. The construction sequence is:

1. (Phase 1) Shore the excavation area with steel sheet pile or steel plates in a section sized according to the reach of the equipment. Excavate top at 2H:1V slope; excavate toe behind shoring and place geotextile filter, Tensar mattresses, underlayer stone and armor stone. Construct the roadway on top of the revetment toe using underlayer stone and road plates to an elevation of +2 ft.

2. Use existing sand bags to construct a berm inside of the temporary shoring on the makai side before removing temporary shoring sheet pile. Place vinyl sheet pile wall and anchors before removing temporary shoring sheet pile on the mauka side.

3. Move forward on the road bed and emplace shoring for the next section.

4. (Phase 2) When the south end is reached, build armor stone slope and crest. Move back north – remove roadbed (excess underlayer stone) and progressively complete revetment. Remove geotextile sand bag berm before moving north to new section. Back-fill and compact top surface excavation, install Tensar mattress and landscaping.

The construction methodology of the selected contractor may vary due to the materials and equipment that they have available.

Block 21: Types of Material Being Discharged

The following material quantities shown in Table 1 are based on the dimensions in Figures 2 and 3. The quantities are conservative estimates. Quantities below MHHW are based on elevation rather than the high water mark, and therefore represent the maximum quantities that could be placed in federal jurisdiction.

The stone, vinyl sheet pile, and Tensar mattress quantities will be permanent installations. Seabags (sand-filled geotextile bags) and steel sheet pile shoring are temporary emplacements that will be removed before completion of the project.

The material estimates shown in Table 1 are conservative values based on the methods shown in Figures 3 and 4 and DEA Section 2.5. Construction methods and material quantity of temporary emplacements may vary with the selected contractor.

Table 1. Material Quantities

	Total Quantity	Quantity below MHHW
Armor Stone	1,785 tons	800 tons (13,500 cy)
Underlayer Stone	1,150 tons	1,080 tons (18,225 cy)
Vinyl Sheet pile	9,300 sq ft	4,740 sq ft (16 cy)
Steel Sheet pile	2,880 sq ft	2,424 sq ft (4.7 cy)
Tensar Mattress	8,170 sq ft (76 x 21.5' x 5')	8,170 sq ft (202 cy)
Geotextile Filter Fabric	12,500 sq ft (465 sq yds)	12,500 sq ft (465 sq yds)
Gravel Fill	202 cy	202 cy
Seabags	145 bags (approx.) 2.5 cu yds per bag (362.5 cy)	145 bags (approx.) 2.5 cu yds per bag (362.5 cy)
Excavation (seawall)	475 cy	None
Excavation (revetment)	2,600 cy	1,475 cy

Notes: 1. Stone volume computed using density of 160 lbs/cu ft and 35% porosity;
2. Vinyl sheet pile volume computed using 0.67 W/D ratio and 0.65-in thickness;
3. Tensar Mattress thickness 0.67 ft;
4. Geotextile fabric values contain 25% overlap;
5. Steel sheet pile assumes 40-ft shoring distance, 0.67 W/D ratio, and 0.375-in thickness.

Block 22: Surface Areas of Wetlands or Other Waters to be Filled, Methods and Best Management Practices

Surface area of waters to be filled

The surface area to be filled is a maximum 372-ft by 20-ft area (7,440 sq ft) along the shoreline in front of the Hololani Resort Condominiums property, as shown in Figures 2 and 3. Some or all of this area may be above the high water mark at the time of construction, depending on seasonal beach sand accretion. The maximum figure assumes that the entire footprint of the construction will be under DA jurisdiction.

Methods

Excavated material will be disposed of by the contractor. Two landfills are available for disposal:

1. Maui Demolition and Construction Landfill (private)
North Kihei Road at Honoapiilani Highway
Maalaea, Maui, HI 96753

2. Central Maui Landfill
Pulehu Road and Hansen Road
Puunene, Maui, HI 96784

Excavation for the vinyl sheet pile tie-back anchor emplacement will be replaced as compacted fill on-site. Excavation for the revetment will be trucked off-site to one of the landfills. Water content of the excavation will depend on the contractor's methods for shoring of the revetment toe construction. Trucks with waterproof lining will be used for transportation of wet material. Use of a dewatering pit within the construction area is also an option available to the contractor.

Figure 6 shows the construction easement area, including the contractor's work and storage areas and a boundary approximately 20 ft offshore of the revetment toe for deployment of silt curtains. Easement coordinates (Hawaii State Plane, Zone 2, ft) are listed in Table 2. Following the scenario developed in Figures 3 and 4 for construction methodology (see Block 20 and DEA Section 2.5), ingress and egress for excavation and construction of the revetment toe is via a temporary access road through the drainage easement at the north end of the property constructed of stone underlayer material. Two ingress/egress locations are shown for truck haul access to Lower Honoapiilani Road.

Table 2. Construction Easement Coordinates

CONSTRUCTION EASEMENT BOUNDARY: (HAWAII STATE PLANE - ZONE 2, FT)		
A.	242,448.80 N	1,639,723.05 E
B.	242,842.72 N	1,639,886.84 E
C.	242,810.74 N	1,639,934.51 E
D.	242,792.19 N	1,639,935.23 E
E.	242,736.53 N	1,639,941.35 E
F.	242,635.17 N	1,639,965.19 E
G.	242,627.09 N	1,639,931.01 E
H.	242,670.36 N	1,639,910.08 E
I.	242,670.36 N	1,639,898.10 E
J.	242,666.81 N	1,639,886.47 E
K.	242,666.81 N	1,639,879.08 E
L.	242,492.64 N	1,639,811.87 E
M.	242,479.99 N	1,639,807.33 E
N.	242,435.24 N	1,639,799.37 E

Figure 6 shows the work being done in twelve stages 30 ft in length (note: stage length will vary with contractor's methods; 40-ft was used in Table 1 for conservative estimates of material quantities). The stages encompass the area to be shored, excavated, and filled with the revetment construction materials. The stage length is dependant on the mechanized equipment available to the contractor - the length of the excavator arm, for example. Silt curtains should be deployed around each stage or a section of combined stages (three stages are used in Figure 6). After completion of excavation and fill for the section, an additional silt

curtain can be placed around the next adjacent section as the construction progresses. The silt curtain for the previous section remain in place and can be removed when water quality monitoring shows that permissable conditions have been reached inside the curtain.

Phase 2 of the construction scenario (see Block 20, Section 2.5 in the DEA, and Figure 4) does not entail placement of fill below MHHW: the temporary access road is dismantled and all sand bag shoring is removed, but no additional fill is placed.

As shown in Figure 6, the contractor's work and storage area is large enough to accommodate a dewatering basin. It is recommended that lined waterproof haul beds be used for transfer of wet material, but a dewatering basin may be preferred or used as well by the contractor.

A Clean Water Act Section 402 (National Pollutant Discharge Elimination System – NPDES) permit may also be required depending on the contractor's need to dewater the revetment toe. If necessary, it is recommended that the contractor implement a Weir Tank settling system (Figure 7). The treated effluent can be discharged at the storm drain easement location. As construction methodology will vary between contractors, the NPDES permit procurement will be the responsibility of the selected contractor.

Following are Best Management Practices and recommended mitigation practices to reduce impacts to Endangered Species:

Best Management Practices

1. Erosion control measures shall be in place before any demolition work is started. Erosion control measures include, but are not limited to, silt fence, silt curtain (as specified in the structural drawings), inlet protection, gravel ingress/egress and dust control.

2. Gravel construction for ingress/egress shall be used to minimize off-site tracking of sediment by construction vehicles.

3. Each contractor shall prevent dust resulting from his work from becoming air-borne at all times including non-working hours, weekends and holidays, in conformance with State Department of Health administrative rules, Title 11, Chapter 60-Air Pollution.

4. Temporary soil stabilization with appropriate vegetation shall be applied on areas where no ground cover or landscaping is applied. Stabilization practices may include: temporary/permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other approved appropriate measures.

5. Best management practices (bmp's) shall not be removed until all permanent erosion

controls are in place and established.

6. Contractor shall maintain and clear blockage and debris from the erosion control measures as necessary every weekend and after heavy rain storms.

7. Contractor shall prepare and submit a site specific Best Management Practices Plan (BMPP) plan to the Engineer, Department of Health, and Army Corps of Engineers.

8. Turbidity and siltation from project - related work should be minimized and contained to within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

9. Any construction-related debris that may pose an entanglement hazard to marine protected species must be removed from the project site if not actively being used and/or at the conclusion of the construction work.

10. All project-related materials and equipment placed in the water should be free of pollutants.

11. No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, etc.).

12. No contamination (trash or debris disposal, alien species introductions etc.) of marine (reef flats, lagoons, open ocean, etc.) environments adjacent to the project site should result from project-related activities.

13. Fueling of project-related vehicles and equipment should take place away from the water. A contingency plan to control the accidental spills of petroleum products at the construction site should be developed. Absorbent pads, containment booms and skimmers will be stored on-site to facilitate the cleanup of petroleum spills.

<u>NOAA fisheries' recommended mitigating measures to reduce impacts to Protected Species:</u>

1. A visual survey which will be performed by the contractor's of the project area must be performed just prior to commencement or resumption of construction activity to ensure that no protected spec(ies) are in the protected area. If protected spec(ies) are detected, construction activities must be postponed until animal(s) voluntarily leave the area.

2. If any listed spec(ies) enters the area during the conduct of construction activities, all activities must cease until the animal(s) voluntarily depart the area.

3. All on-site project personnel must be apprised of the status of any listed spec(ies)

potentially present in the project area and the protections afforded to those species under federal laws. A brochure explaining the laws and guidelines for listed species in Hawaii, American Samoa, and Guam may be downloaded from:

Http://www.nmts.nooo.gov/prolres/mmwoteh/hawaii.htm .

4. Any incidental take of marine mammals must be reported immediately to NOAA fisheries' 24-hour hotline at 1-888-256-9840. Hawaii only: any injuries to sea turtles must be reported and must include the name and phone number of a point of contact and location.

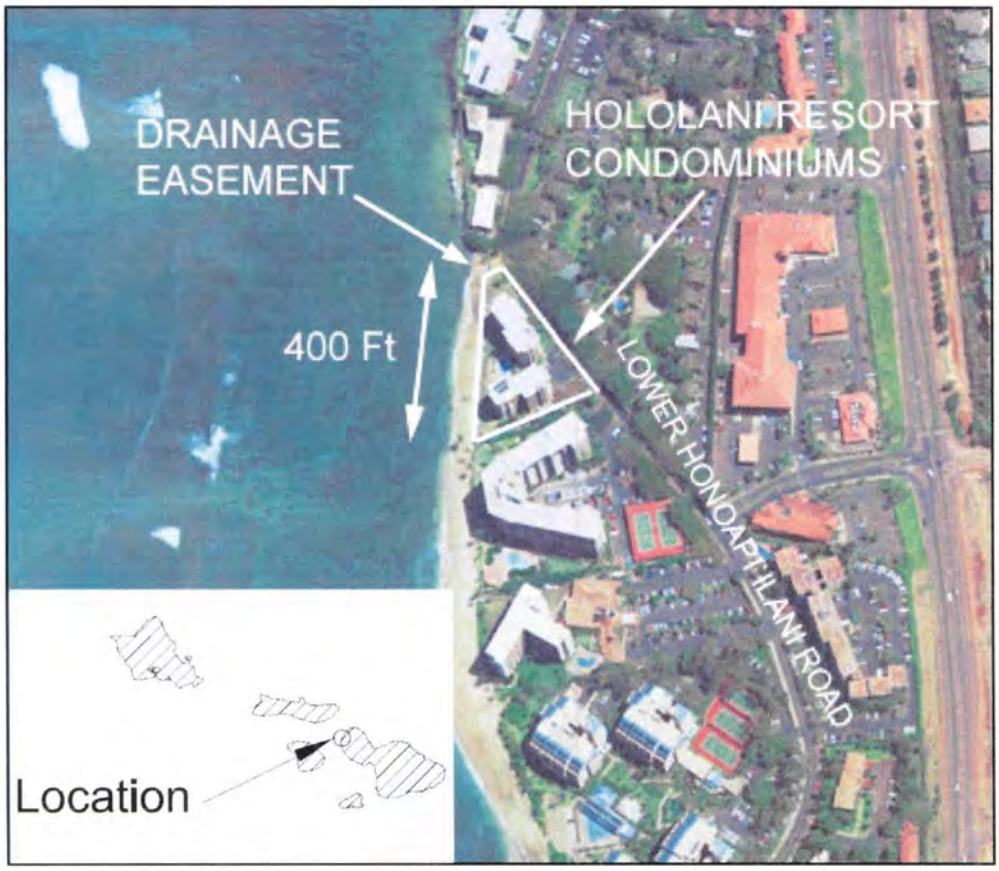


Figure 1. Vicinity Map: project site location in West Maui

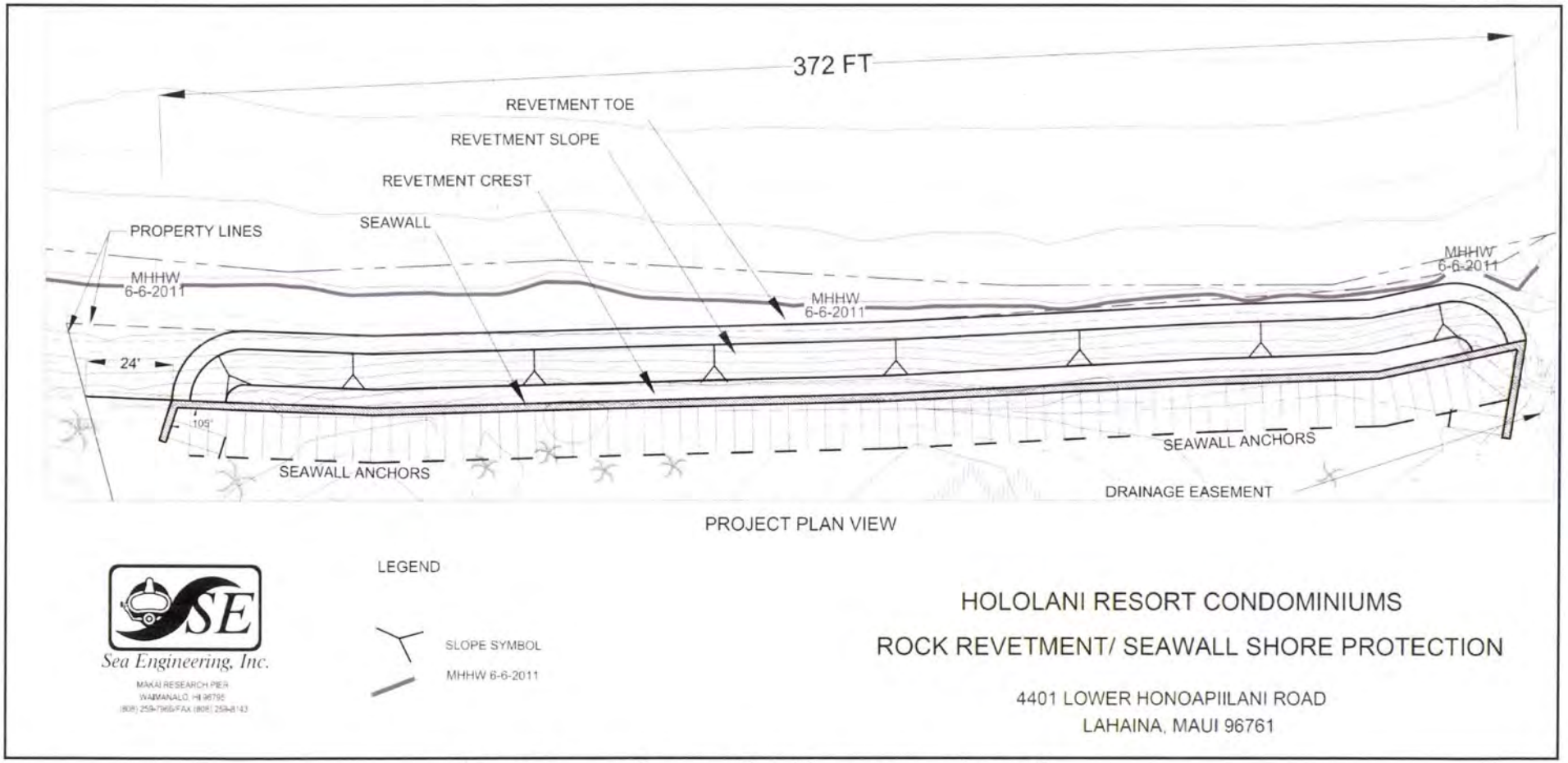


Figure 2. Layout of proposed hybrid revetment and seawall

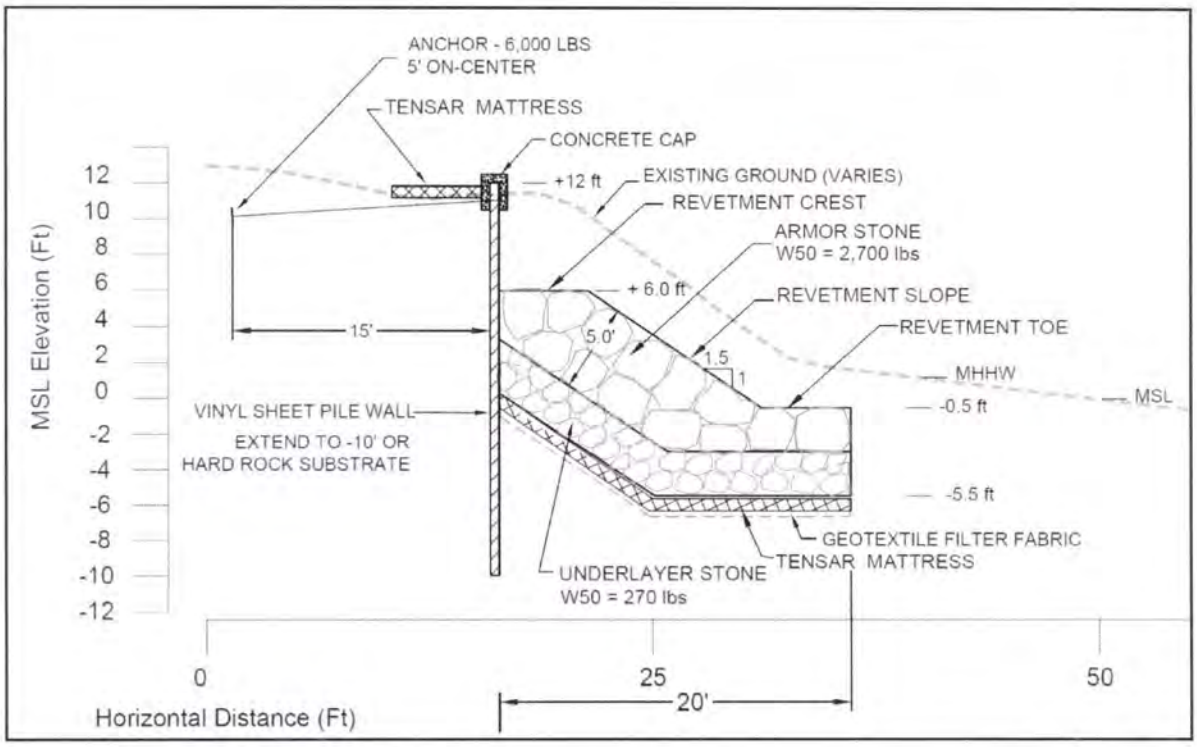


Figure 3. Cross-section of the proposed shore protection structure

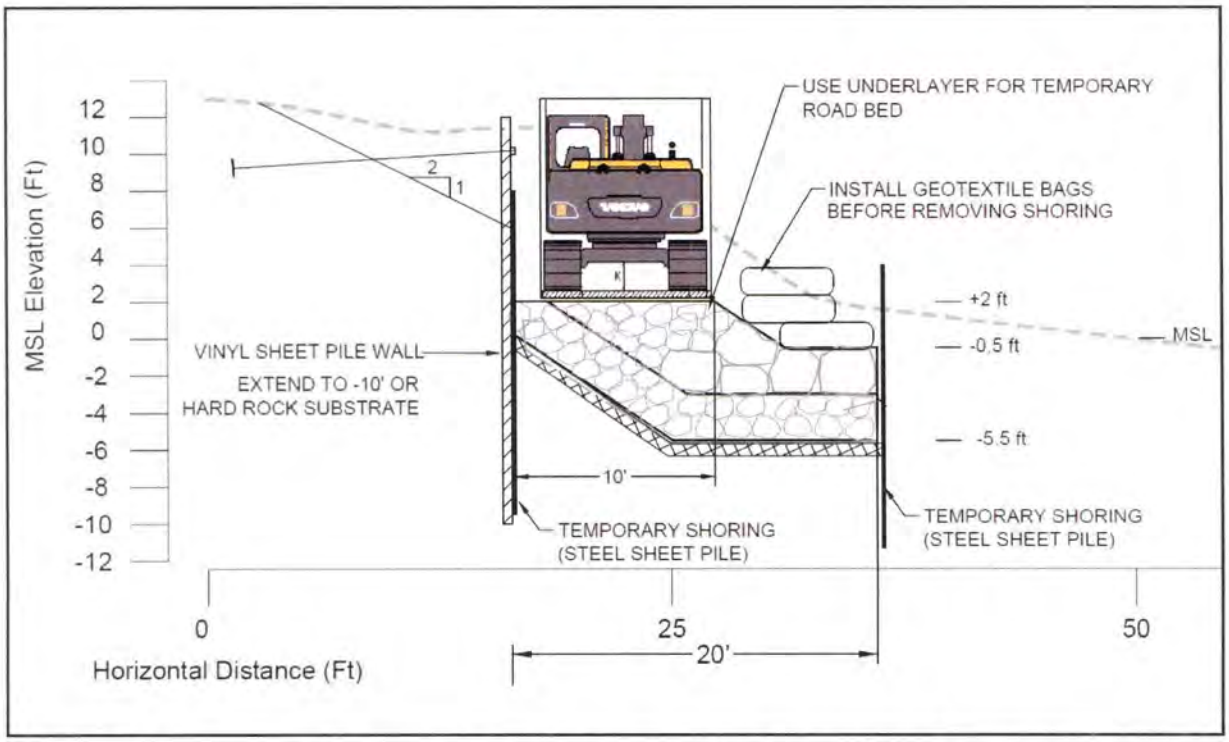


Figure 4. Construction of temporary road bed and structure toe – Phase 1, construction moving south.

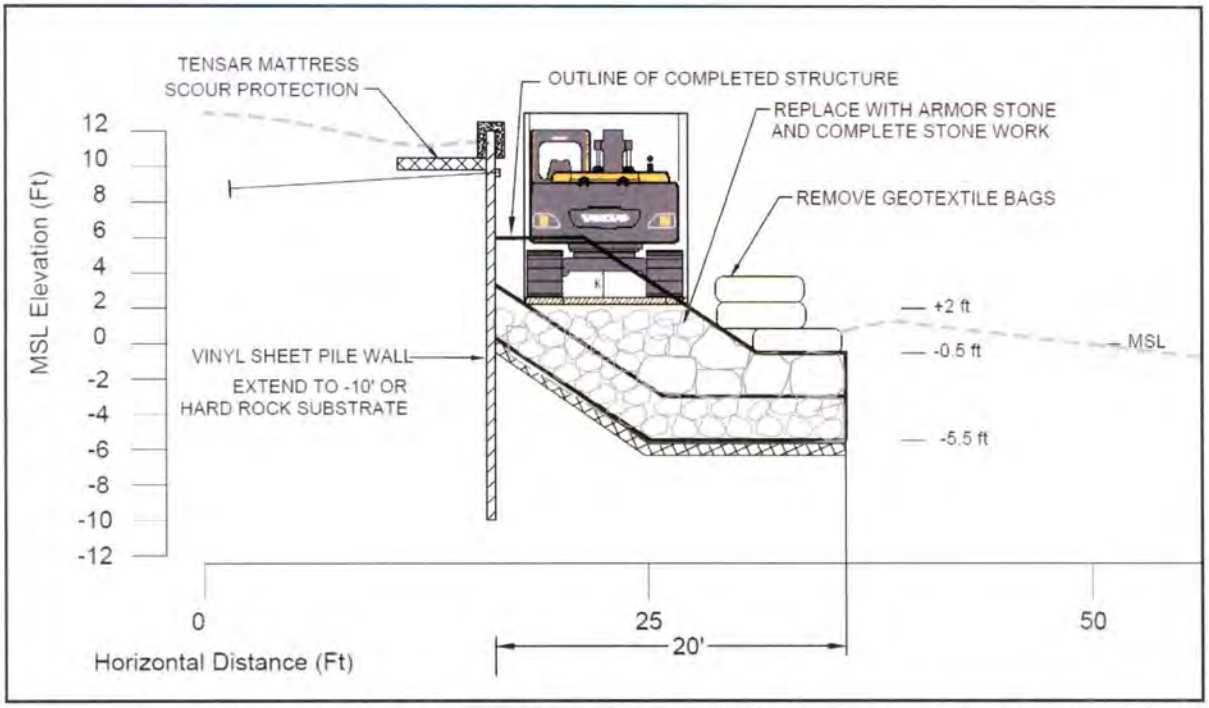
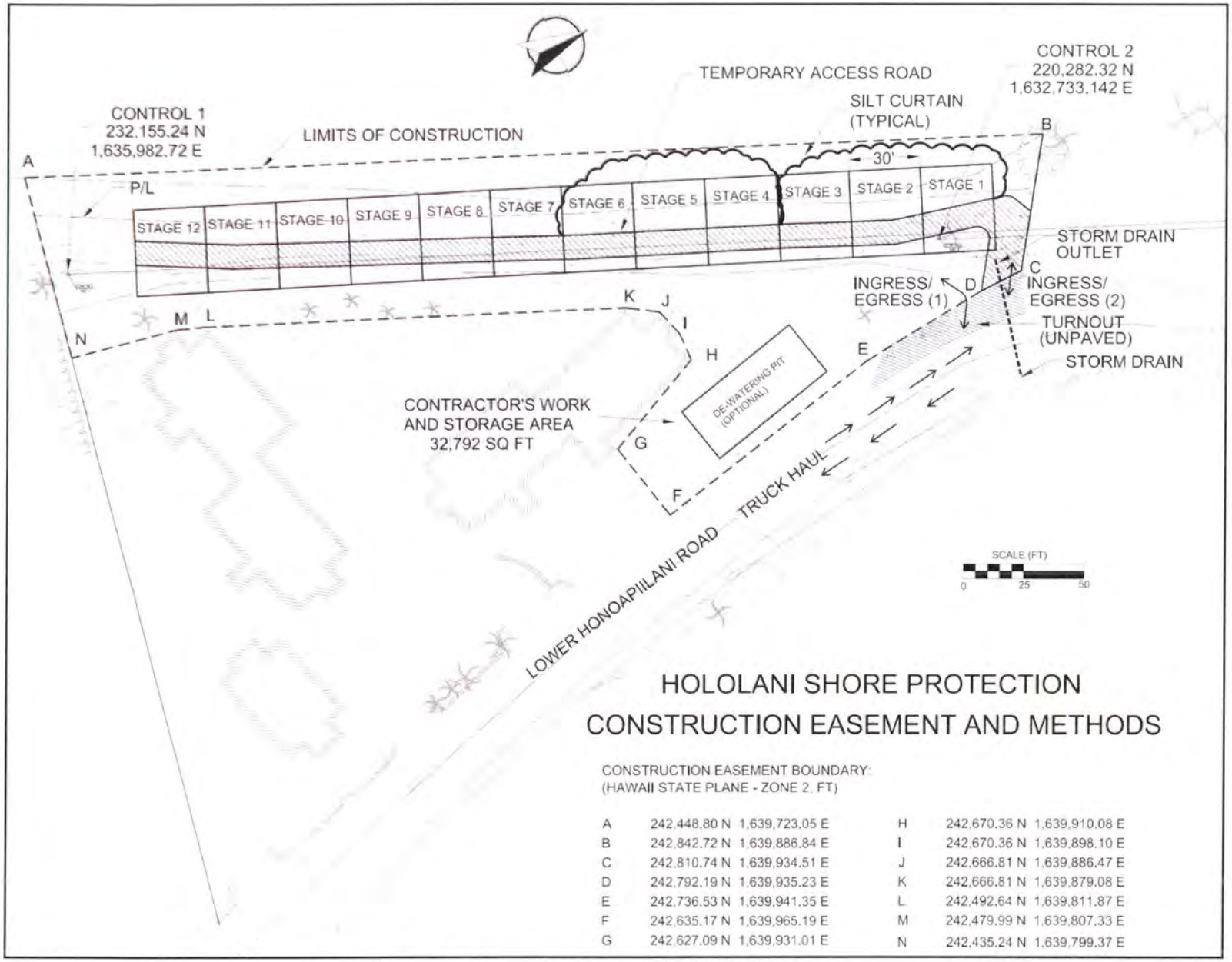


Figure 5. Construction of remainder of structure, removal of temporary shoring – Phase 2, construction moving north



HOLOLANI SHORE PROTECTION
CONSTRUCTION EASEMENT AND METHODS

CONSTRUCTION EASEMENT BOUNDARY:
(HAWAII STATE PLANE - ZONE 2, FT)

A	242,448.80 N 1,639,723.05 E	H	242,670.36 N 1,639,910.08 E
B	242,842.72 N 1,639,886.84 E	I	242,670.36 N 1,639,898.10 E
C	242,810.74 N 1,639,934.51 E	J	242,666.81 N 1,639,886.47 E
D	242,792.19 N 1,639,935.23 E	K	242,666.81 N 1,639,879.08 E
E	242,736.53 N 1,639,941.35 E	L	242,492.64 N 1,639,811.87 E
F	242,635.17 N 1,639,965.19 E	M	242,479.99 N 1,639,807.33 E
G	242,627.09 N 1,639,931.01 E	N	242,435.24 N 1,639,799.37 E

Figure 6. Construction Area Easement and Access

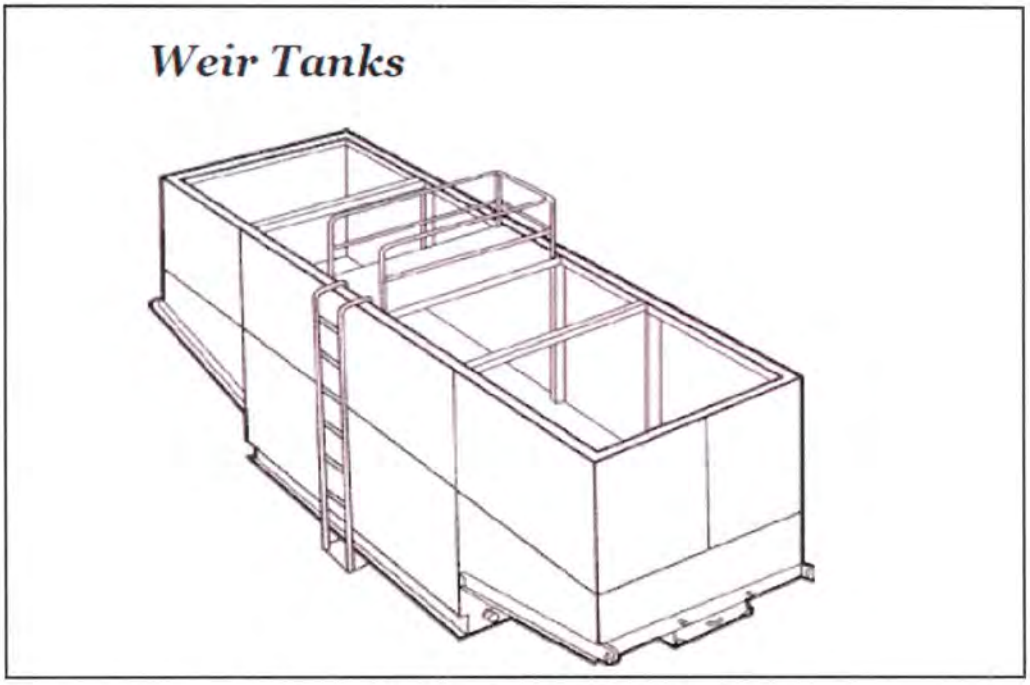


Figure 7. Weir tank for sediment settling