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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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August 30, 2011

Mr. Gary Hooser, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813-2437

Dear Mr. Hooser:

Subject: Chapter 343, Hawaii Revised Statutes (HRS)
Final Environmental Assessment (EA) Determination
Finding of No Significant Impact (FONSI)

Recorded Owner/

Applicant: Ursula Heinz
Agent: Oceanit
Location: 47-119 Kamehameha Highway - Kahaluu
Tax Map Key: 4-7-19: 76, 80
Request: Shoreline Setback Variance
Proposal: Construction of a sheet pile seawall to be placed at the outer face of an existing nonconforming seawall and the retention (after-the-fact) of 6-foot high retaining rock (CRM) wall and backfill and open gazebo, within the 40-foot shoreline setback.

Attached and incorporated by reference is the Final EA prepared by the applicant for the above project pursuant to Chapter 343, HRS. We have determined that the preparation of an Environmental Impact Statement is not required and have issued a FONSI. We request publication of our determination in The Environmental Notice.

Enclosed are a completed OEQC Publication Form and one copy of the document in pdf format on a CD; and one hard copy of the Final EA. If you have any questions, please contact Steve Tagawa of our staff at 768-8024.

Very truly yours,

for David K. Tanoue, Director
Department of Planning and Permitting

DKT:nw
Enclosures

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**OEQC Publication Form
The Environmental Notice**

Instructions to Applicant or Agency:

1. Fill out this Publication Form and email to: oeqc@doh.hawaii.gov
2. Send one (1) pdf and one (1) hardcopy of the EA / EIS to OEQC

Name of Project:	Heinz Shoreline Protection Replacement and Retaining Wall Reconstruction
Applicable Law:	Section 343-5(a)(3), HRS; Section 11-200-6(b)(1)(C), HAR
Type of Document:	Final Environmental Assessment
Island:	O'ahu
District:	Ko'olaupoko
TMK:	4-7-19: 76 and 80
Permits Required:	Shoreline Setback Variance, U.S. Army Corp Permit, Building Permit
Name of Applicant or Proposing Agency:	Ursula Heinz, MD Ursula Heinz Trust
Address	47-119 Kamehameha Hwy.
City, State, Zip	Kāne'ohe, Hawaii 96744
Approving Agency:	City and County of Honolulu
Address	Department of Planning and Permitting
City, State, Zip	650 South King Street, 7 th Floor
Contact and Phone	Honolulu, Hawaii 96813 Steve Tagawa (808) 768-8024
Consultant	Oceanit Laboratories, Inc
Address	828 Fort Street Mall, Suite 600
City, State, Zip	Honolulu, Hawaii 96813
Contact and Phone	Warren Bucher, PhD, PE (808) 954-4114

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Project Summary:

To replace a damaged concrete rubble masonry (CRM) seawall and boulder protection structure with a sheet pile seawall along a 122-foot long portion of the shoreline of Kaneohe Bay. The rubble from a failed (outer) CRM seawall and boulders that were placed by the Applicant in front of the remaining (inner) seawall without authorization (for which a citation was issued), will be removed. The sheet piles will be driven into the ground, outside the existing (inner) seawall, to a depth (approximately 24 feet) to prevent scour under the seawall. The sheet piles will be placed behind the certified shoreline and will not change the configuration of the existing property, one third of which consists of fill land of Kaneohe Bay (Parcel 80).

The Applicant also seeks to retain an L-shaped CRM retaining wall and 200-square foot open gazebo, which were reconstructed without necessary approvals. The CRM retaining wall is about 6 feet high and about 56 feet long. There are no public recreational facilities at or near this site. An old boat channel dug into the shallow coral shelf provides boat access to the site and neighboring residences.

Short term impacts from construction include dust, noise, and a possible increase in turbidity of near shore waters. Best management practices (BMPs) will be implemented, including silt curtains and other barriers to minimize water quality and other possible adverse impacts. The project will require approval of a shoreline setback variance, building permits, and a Department of the Army (DA) permit from the U.S. Army Corps of Engineers.

Final Environmental Assessment

Heinz Sea Wall Repair Kane'ohe Bay, O'ahu, Hawai'i

Prepared for:

Ursula Heinz, Heinz Trust
Private Property Owner



Prepared by:

oceanit

Oceanit Center
828 Fort Street Mall, Suite 600
Honolulu, HI 96813

June 2011

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General Information Summary

Applicant::	Ursula Heinz, MD 47-119 Kamehameha Highway Kane`ohe, HI 96744
Owner:	Ursula Heinz Trust
Consultant/Preparer:	Oceanit Suite 600 828 Fort Street Mall Honolulu, HI 96813
Approving Agency:	City and County of Honolulu Department of Planning and Permitting 650 South King Street Honolulu, HI 96813
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Agencies Consulted:	Department of Land and Natural Resources/ Office of Conservation and Coastal Lands City and County of Honolulu Department of Planning and Permitting
Community Groups Consulted:	Neighborhood Board Office of Councilman DelaCruz
Individuals Consulted:	Dr. Ursula Heinz
Tax Map Key:	4-7-019:076, 080
State Land Use:	Urban District
Zoning (LUO):	R-10 Residential District
Special Designations:	Special Management Area and Shoreline Setback



Figure 4. Aerial View of the Project Site (University of Hawaii Aerial Photo)

Along a 68-foot section of shoreline, the center of the property is protected by a double wall system. The wall system consists of an outer concrete seawall and an inner concrete rubble masonry (CRM) retaining wall. The space between the walls is filled with rock and gravel. Portions of the outer seawall have collapsed, allowing water to reach the inner retaining wall. A shoreline boat channel fronting the property has eroded shoreward and probably contributed to the collapse of the outer sea wall. The CRM wall foundation is shallow, and the wall could collapse if the rocks between the old collapsed seawall and the inner CRM wall were removed. Soil erodes into the shoreline channel. Concentrated rainwater drainage may damage some areas of the inner wall, because rainwater often ponds in the yard, indicating that the soils do not drain well. The lot's eastern shoreline is protected by a CRM wall that is contiguous with the old seawall. The western shoreline is protected by a small concrete seawall that is being undermined. Portions of the wall system are shown in Figures 5 through 8. Rocks placed along the walls are encroaching into state waters (see Figure 9). The owner proposes to remove the old damaged seawall and replace the old CRM and concrete walls with a new sheet pile wall. The sheet piles will follow the certified shoreline and encroaching rocks and broken wall pieces will be removed from the ocean.

In about 1995 the owner replaced a deteriorated roof on a gazebo near the main house. The gazebo, shown in Figures 13, 15, 17 and in the 1993 survey map (Figure 16), was already on the property before Dr. Heinz rebuilt the house in 1999. The gazebo is within the 40-foot shoreline setback, and the roof replacement is subject to a Shoreline Setback Variance (SV) from the City and County of Honolulu, DPP.

In addition, Dr. Heinz received a Notice of Violation (NOV) 2006/NOV-02-033 issued February 6, 2006 and a Notice of Order (NOO) 2007/NOO-145 issued June 18, 2007 from the Department of Planning and Permitting (DPP) for the unauthorized repair of a portion of a hollow tile retaining side wall (See Appendix D). A section of the side wall was removed to allow construction equipment to conduct repairs on the property. Additional parts of the hollow tile wall collapsed. After construction was completed and the equipment removed, the retaining side wall was partially reconstructed as a CRM wall and partially reconstructed as a rock-veneered hollow tile wall that formed an “L” shape along the side and back of the lower property. (See Figures 13-14) This portion of the side wall is within the 40-foot shoreline setback zone and is subject to an SV from the City and County of Honolulu, DPP. An SV for the new seawall, the reconstructed side wall, the replacement of the gazebo roof, and landscaping inside the seawall will be submitted to the DPP for approval. Figure 13 shows the relationship of the 40-foot setback line in relation to the house, seawall, side wall, and gazebo foundation. This side wall is a retaining wall that retains the soil where the foundation of the house is situated and retains the soil from the neighboring property. This wall ranges from 4 to 6 feet high and about one foot wide. The area between the retaining wall and the seawall was filled in with gravel and rock when the house was constructed. The “L” shaped wall is located behind the gazebo (see Figure 17).

The owner also plans to place topsoil in the area shown in Figure 13. The topsoil will have a maximum depth of 6 inches at the seaward edge of the property with a slope of one percent toward the house to allow drainage.

A shoreline survey was conducted on July 28, 2009 and is shown in Figure 19. Oceanit conducted a seawall evaluation on January 25, 2007. The letter documenting this evaluation is included as Appendix B.



Figure 5. West Side of Central Double Wall System (taken 1/25/07)



Figure 6. Concrete Wall on West Section of the Wall System (taken 1/25/07)



Figure 7. Eastern Portion of the Heinz Wall System (taken 1/25/07)



Figure 8. CRM Wall on Eastern Side of Lot (taken 1/25/07)



Figure 9. Rocks Encroaching in State Waters (taken 1/25/07)

The history of the existing walls along the property shoreline is not completely known. An old shoreline map shows the outer and inner seawalls in place on January 15, 1963, which does make them nonconforming. Dr. Heinz does not have copies of the original plans for the existing walls. Dr. Heinz hired a structural engineer to draw plans of the existing walls as they appeared in 2006. These plans are shown in Figures 10 through 12. The shape of the buried parts of the walls was assumed based on what is typical. CRM wall depths below grade are not known. Reinforced concrete wall dimensions based on measurements are shown. Some of the rock areas around the walls are labeled: “new rip rap slope protection.” These rocks were added in January 2006 and have been addressed in discussions with DLNR/OCCL regarding a new shoreline certification. These rocks and the broken outer seawall will be removed as a condition of the shoreline certification.

The owner proposed to replace the existing seawall system for several reasons:

1. A section of the seawall system was a double wall. The outer wall was a seawall that was undermined by erosion along the adjacent shoreline boat channel and has mostly collapsed. The outer wall is damaged beyond the practical possibility of repair. Therefore, the design consultant initially recommended replacement. The certified shoreline formerly ran along the outer wall, but the Department of Land and Natural Resources determined that the ocean had passed through the location of the shoreline and that the shoreline would have to be moved inland to the inner wall, thereby making the outer collapsed wall and the rock fill encroachments into state waters, which would have to be removed before a certified shoreline could be approved and any repairs made.
2. Since the outer seawall must be removed, the inner CRM wall would have to work as a seawall if left in place. The CRM wall does not appear to the design consultants as properly designed or constructed to be a seawall. There is no available information on the foundation depth or type. The inner wall is a retaining wall for the dredged fill that was used to construct the property originally.

The outer wall and the rocks placed between the two walls currently support the inner wall. When the encroaching material is removed, this support will be gone. To prevent inner wall collapse, the design consultant's recommendation is to replace the CRM wall with a properly designed and constructed sheet pile wall.

3. The seawall on the east side of the property is a CRM wall that ties into the inner CRM wall and extends to the property line. No information on the foundation depth and type has been found. Coral gravel has built up along part of the east wall. The design consultant recommends that this wall be replaced with sheet piles when the remaining walls are replaced.
4. The seawall on the west side of the property is made with concrete. It has a visible foundation (not buried) with scour gaps beneath the wall. The wall does not appear to extend far enough below the surface to prevent the scouring. The concrete has deteriorated over its life. The design consultant's recommendation is to replace the wall with a new sheet pile wall rather than try to repair it. Repair would be expensive, would require excavation of the land inside the wall, and would likely require dewatering.

The proposed solution is to replace the existing CRM and concrete seawalls with a sheet pile wall that follows the shoreline/property line. Sheet piles are driven into the ground to a depth sufficient for stabilization and to prevent scour under the wall. Sheet piles have an advantage over other wall systems in that no toe excavation and therefore no dewatering are needed. So the environmental impact is less than for other wall systems. Sheet piles are made of steel, aluminum, concrete, vinyl, or fiber reinforced plastic. Vinyl sheets will be used because they do not corrode. Tiebacks will be attached to hold the sheets against soil pressure. A typical sheet pile design is shown in Figure 15.

1.3 Economic Characteristics

As the proposed action would occur on private property, the side wall, seawall, landscaping, and gazebo roof replacement will be privately funded by the property owner, Dr. Ursula Heinz. The economic benefits of the side wall, seawall, landscaping, and gazebo roof replacement are negligible to the local community.

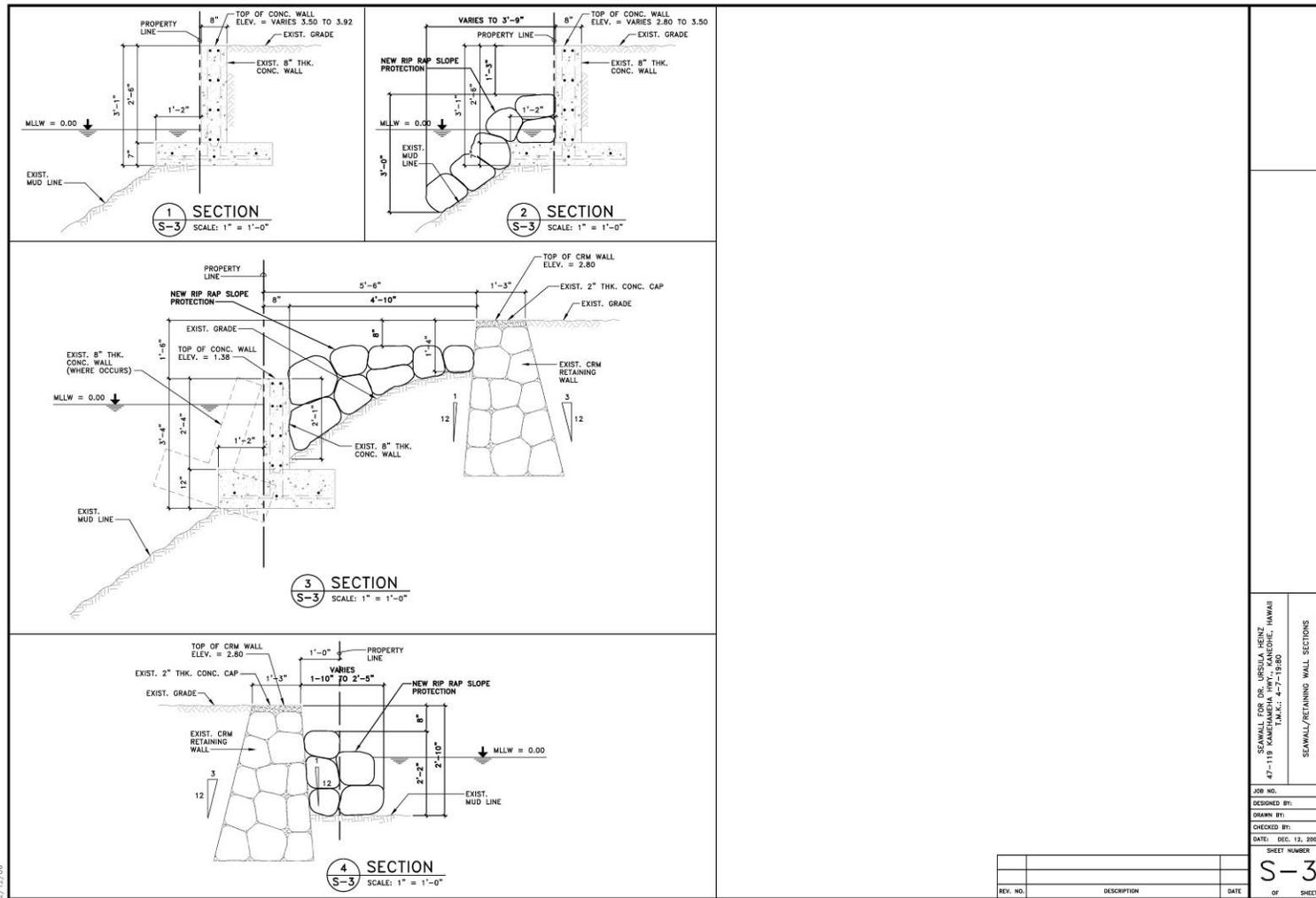


Figure 12. Existing Seawall Sections

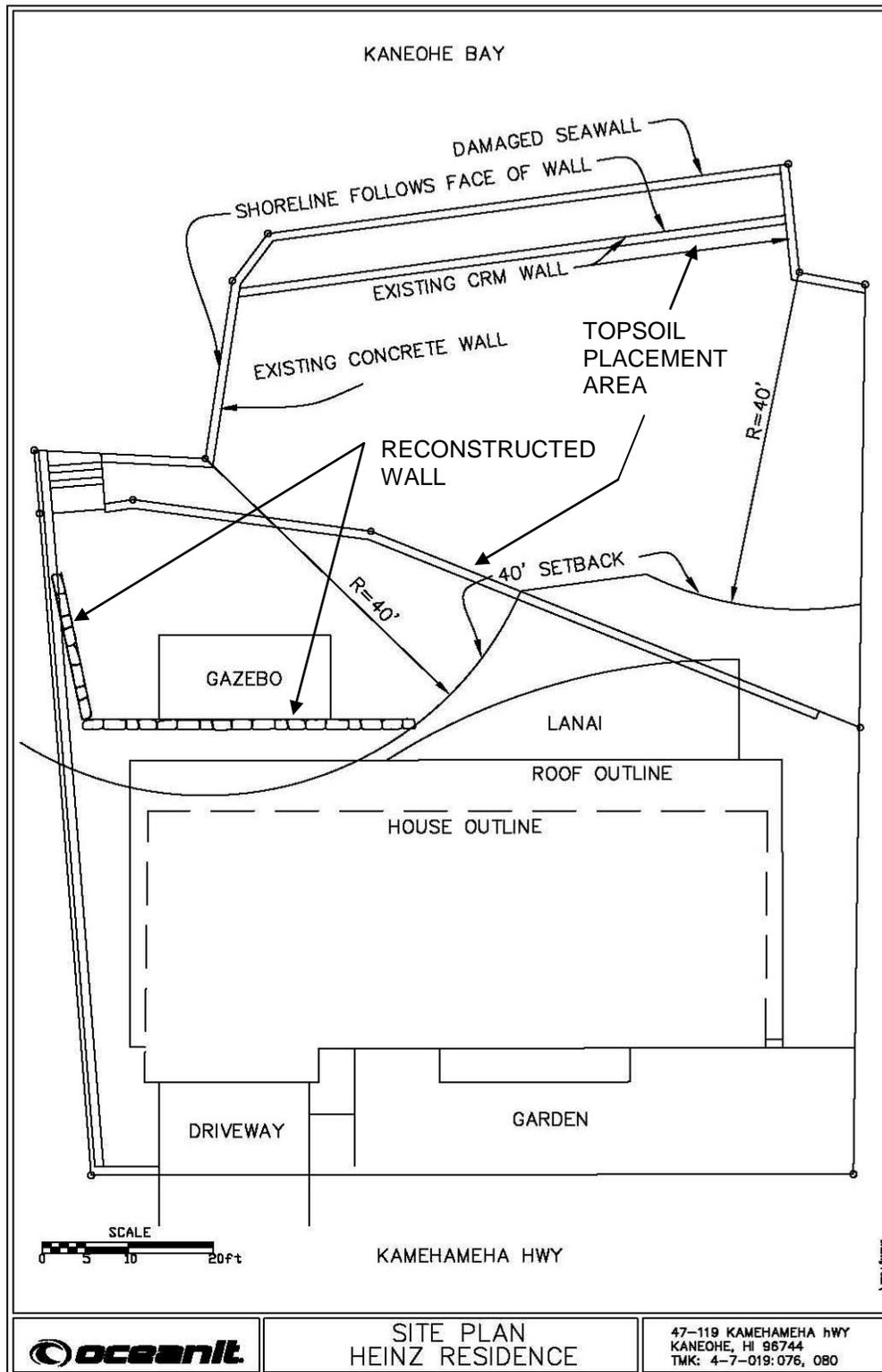


Figure 13. Site Plan with House, Walls, Gazebo, and Shoreline Setback



Figure 14. Reconstructed Side and Back CRM Wall

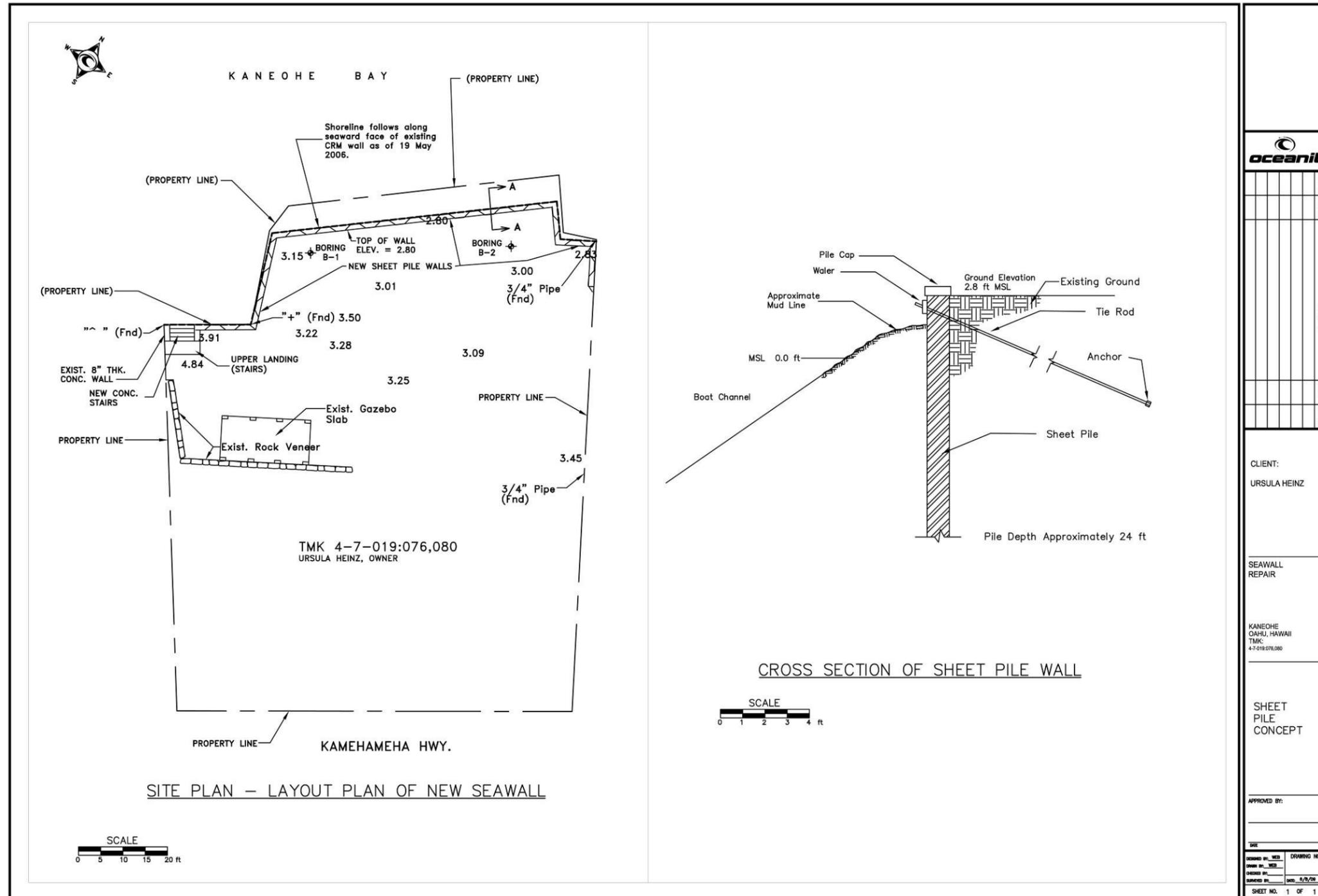


Figure 15. Sheet Pile Concept Design

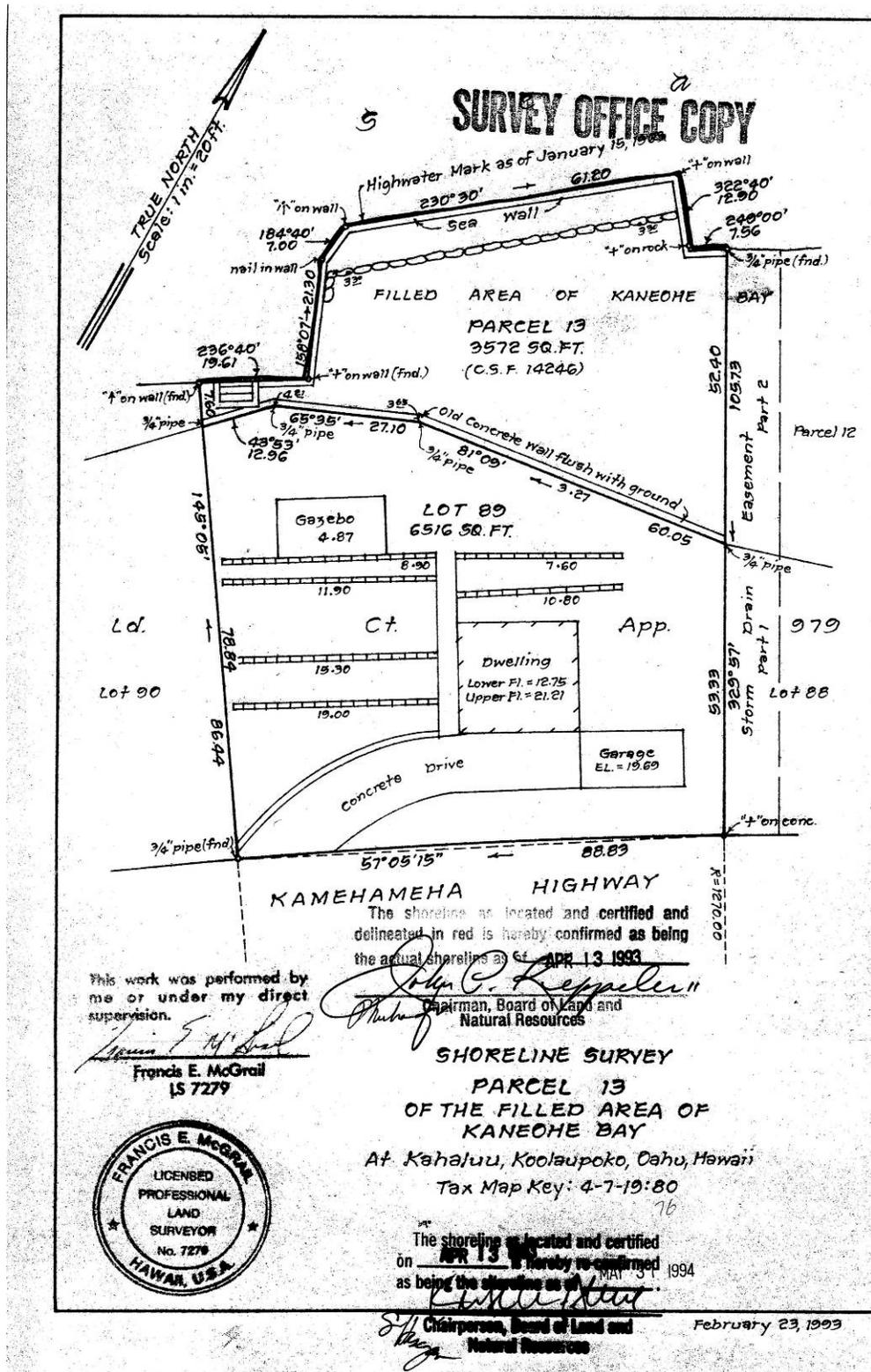


Figure 16. Survey Map of Property Prior to Rebuilding Dwelling Showing Gazebo



Figure 17. Photo of Retaining Wall Adjacent to the Gazebo with New Roof

1.4 Social Characteristics

The social characteristics of the proposed side wall, seawall, and gazebo roof replacement are negligible because the proposed action would occur on private property and have little effect in Kane`ohe Bay. Neighboring property owners may be affected by noise and water turbidity during seawall construction. These potential effects are discussed in Section 4. In general, Kane`ohe Bay is surrounded by residential and agricultural areas and by the Marine Corps Base, Hawai`i. It is an important area for recreational, commercial, and research uses and also for fishing. The current beneficial social uses of the environment include access by the landowner and neighbors to Kane`ohe Bay for kayaking or other water recreation. The Kane`ohe Bay vicinity is discussed more in depth in the proposed project area description in Section 2.1.

1.5 Environmental Characteristics

The Heinz wall system is located on the shoreline along the west side of Kane`ohe Bay (see Figure 2). The property's shoreline faces north-northwest, as shown in project vicinity map (see Figure 3). The Heinz property is partially filled with dredged material from Kane`ohe Bay, and the filled area has a grass lawn and several coconut trees (see Figure 18). The property is exposed to wind and small waves approaching from the north through the east. Incoming wave size is limited by shallow water directly in front of the Heinz property. As shown in aerial photos (see Figures 3 and 4), a shallow rock and sand fringing reef flat extends about 1000 feet to the north. Along the shoreline, a dredged boat channel runs past the property and out through the reef flat to a 40-foot-deep ship channel. These channels are shown in Figures 4 and 20.

1.6 Time Frame

Seawall construction will probably start in Spring of 2012 and would require about one to two months. This environmental assessment is the first step in the planning process.

1.7 Funding and Source

The Heinz seawall proposed project will be privately funded by the property owner. No public funds, such as those of the State of Hawai`i or City and County of Honolulu, would be used for the proposed project.



Figure 18. Property Yard along Shoreline

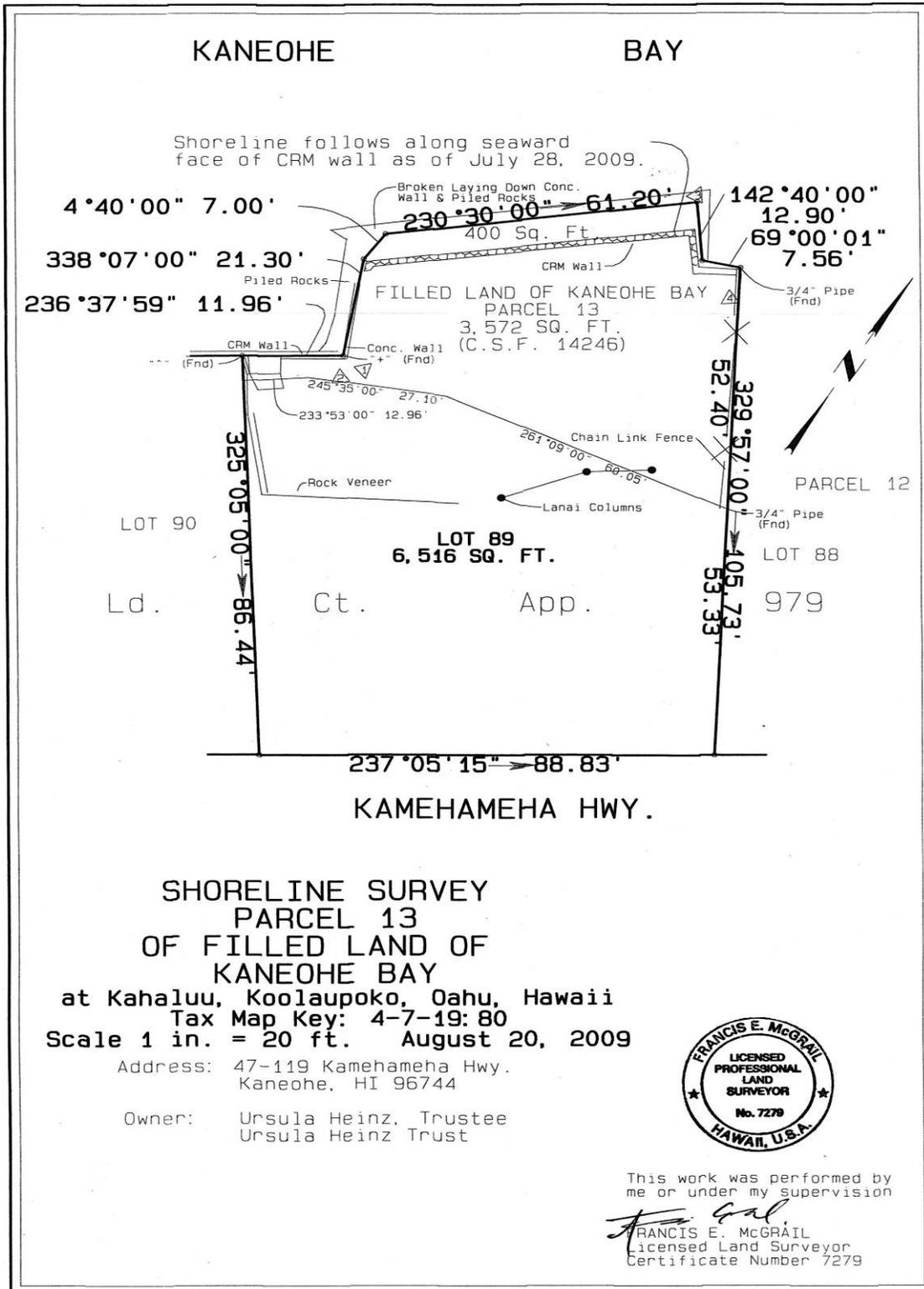


Figure 19. 2009 Shoreline Survey of Heinz Lot

2 Description of Affected Environment

2.1 Kane`ohe Bay

The project is on the shoreline of the central portion of Kane`ohe Bay on the windward side of the island of O`ahu. The project site is located on the north side of Kamehameha Highway about one mile north of He`eia Kea Boat Harbor and abuts the Kane`ohe Bay shoreline. The property is fronted by a partially damaged seawall and retaining wall. Prior to a project site visit, Oceanit gathered general information on the Kane`ohe Bay vicinity. On December 12, 2007, biologists made an underwater visual survey of the near shore bottom during the early morning at low tide (about 0.0 feet MLLW).

Kane`ohe Bay is a large embayment protected by a fringing reef with numerous emergent patch reefs within the inner lagoon area. In most areas, the inner shoreline of the bay consists of a shallow reef flat that changes from fine sand and mud at the shore to coarse sand at the reef edge in 2 to 6 feet of water. The edge of the reef varies from 100 feet to well over 1000 feet off shore with the shallow back reef supporting sand-dwelling communities and very limited coral or algae growth. Kane`ohe Bay is separated by a barrier reef from deeper ocean waters. Encompassing about 11,000 acres, the bay contains a number of islands, a barrier reef, fringing reefs, patch reefs, sand bars, mud flats, mangrove areas, small boat harbors, and two ship channels.

The Hawaiian Stilt, an endangered species, is found in Kane`ohe Bay. The best stilt habitat is at Nu`upia Ponds Wildlife Management Area near the Marine Corps Base Hawai`i. A species of concern in Kane`ohe Bay is the inarticulated brachiopod (*Lingula reevii*), which is only known to occur in the shallow, sandy reef flats in the bay. Another species of concern found in Kane`ohe Bay is the Hawaiian reef coral, *Montipora dilatata*. None of these species were observed during the December 2007 site survey, and the habitat near the wall is different from these species' natural habitats.

2.2 Project Site Shoreline

Some of the land inside the Heinz wall system is filled by dredged sediments from the bay, and coconut trees and a grass lawn grow here. The bottom seaward from the outer seawall slopes quickly into a small boat channel that runs parallel to the shoreline (Figures 4 and 7). Deep water waves and tsunami do not typically reach the project site, and there is no sand beach at the site. The seawall location is not part of a scenic vista or plane of view and cannot be seen from the Kamehameha Highway side of the property.

The reef fronting the subject property varies from 650 to 1200 feet wide and averaged 1 to 4 feet deep on the morning of the survey. The shoreline small boat channel is roughly 30 to 40 feet wide along approximately 1200 feet of shoreline and fronts a dozen shoreline homes. This shoreline channel is connected to the open bay through a 650 foot-long, 20- to 30-foot-wide access channel across the shallow back reef flat. Each of the homes fronting the shoreline channel has constructed a seawall at the shoreline.

The sea bottom near the project site contains up to 33% terrestrial sediments (University of Hawai`i CISNet Kane`ohe Bay 2008), suggesting that eroded sediment from the wall probably drops into the shoreline channel. Although trade wind waves and north swell must pass the outer Kane`ohe Bay barrier reef and traverse more than 6,000 feet of reef flat and the Ship Channel to reach the project site, there is sufficient water motion to slowly erode exposed shoreline soil and sediments.

2.3 Shoreline Use and Zoning

The proposed project site for the Heinz property is within the special management area and the shoreline setback. The special management area is the land extending inland from the shoreline as defined in Hawai'i Revised Statutes 205A, and subject to the Coastal Zone Management Act of 1972 (as amended through public law 104-150, The Coastal Zone Protection Act of 1996). The setback is 40 feet from the certified shoreline. Although the site is within the SMA, the proposed work is associated with the development of a single family dwelling and is therefore exempt from SMA requirements (Section 25-1.3(2)(N), ROH).

The bay has numerous channels dredged through the shallow reef flat to allow boat access for Kane`ohe Bay's residential, agricultural, military, and recreational uses. Recreational boating is common around Kualoa Regional Park and Mokoli`i Island, which are located at the north end of the bay. The south end of the bay is enclosed on three sides by the town of Kane`ohe and the Marine Base. A number of shoreline communities dredged channels through the shallow back reef flat up until the 1960s, providing secure mooring areas close to shore. The dredged shoreline channel in front of the Heinz property is used for small boats. Nearby properties have boats, and Dr. Heinz launches kayaks into the channel (see Figure 20).

2.4 Flora, Fauna, and Habitat Survey

On December 12, 2007, an underwater visual survey of the near shore bottom was conducted during the early morning when the tide was low (about 0.0 feet MLLW). Data was recorded and digital photographs were taken. The path of the underwater survey (Figure 20) clearly shows the wide, shallow, fringing reef flat seaward of the project site. The near shore intertidal and channel areas fronting the Heinz property and properties on either side were inspected. The access channel through the back reef area was examined, including the shallow reef front in Kane`ohe Bay. The survey included inspection of the following areas inspected based upon physical conditions and populations of fish, invertebrate, and algae communities supported. All these areas are mapped in Figure 21.

- Shoreline channel bottom
- Shoreline channel slopes
- Bay access channel bottom
- East slope of bay access channel
- Mouth of bay access channel
- West slope of bay access channel
- Shallow reef flats between the boat channel in front of the Heinz property and the main body of Kane`ohe Bay

In general, sea bottom cover and water quality at the project site are typical of near shore areas in Kane`ohe Bay. Research prior to the site survey found that throughout the bay the narrow reef face typically supports almost 100% coral cover and drops nearly vertically to the talus slope (broken rock at the bottom) and mud bottom at depths varying from 10 to 30 feet. Water quality varies considerably over the shallow near shore reefs of Kane`ohe Bay and is dependent upon tide, proximity to stream mouths, wind and wave energy, and recent rainfall. At the time of the site survey, underwater visibility was less than 2 feet close to shore, gradually improving to 15 feet at the mouth of the access channel (see Figure 20). Generally, water quality is affected by several factors. Rainfall washes sediment and nutrients into the bay through about a dozen streams. Tides and waves drive water into the bay which flows out through the two main ship channels. Before 1977–1978, sewage was dumped into the bay, but since then sewage has been diverted to deep ocean outfalls and near shore water quality has improved. Water quality and bottom cover details are included in the flora, fauna, and habitat descriptions for the aforementioned inspection areas (shoreline channel bottom and slopes; bay access channel bottom, slopes, and mouth; and shallow reef flats).

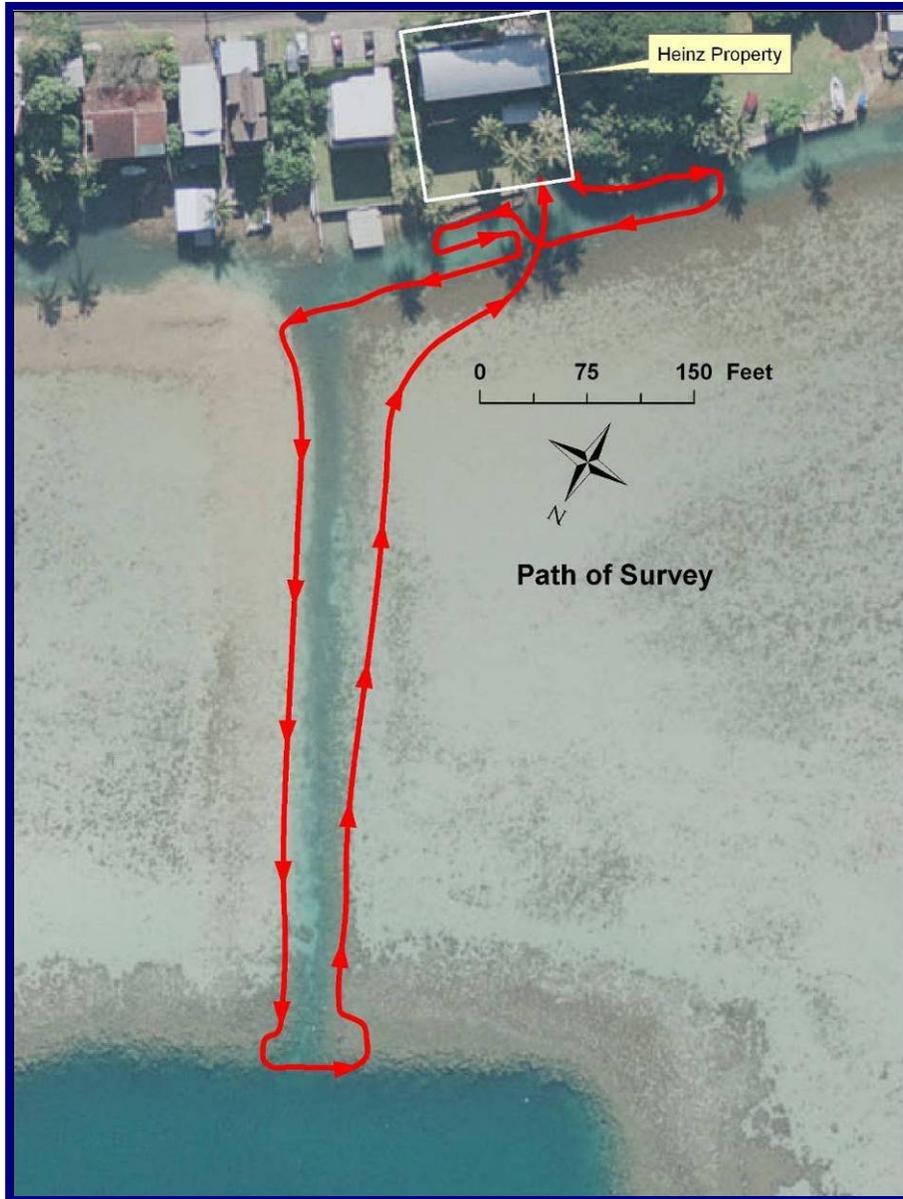


Figure 20. Path of the Underwater Site Survey Conducted December 12, 2007

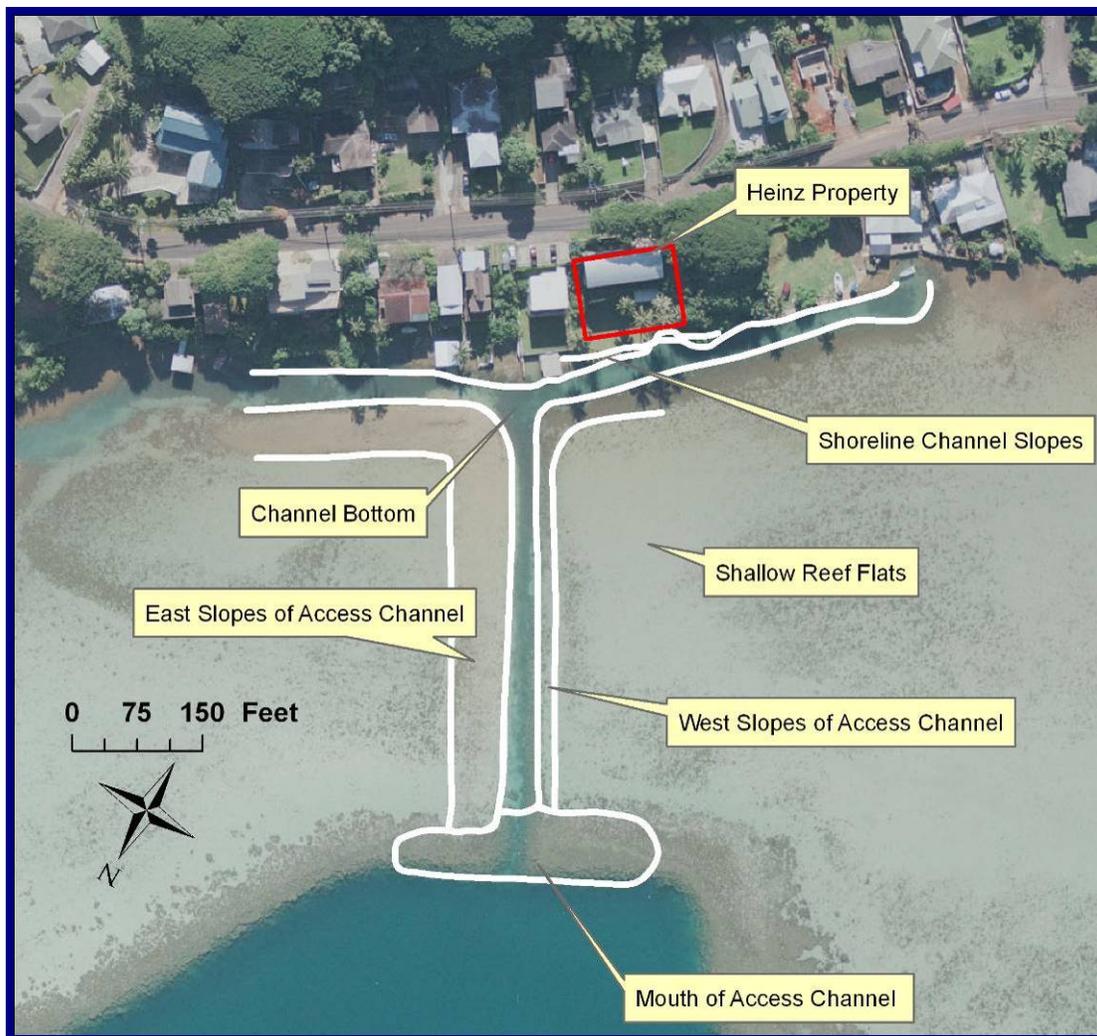


Figure 21. Inspection Areas of Underwater Site Survey

2.4.1 Shoreline Channel Bottom

Fine silt and decomposing plant material line the bottom of the shoreline boat channel fronting the subject and adjacent properties. The channel bottom is devoid of coral, but clumps of the introduced macro algae *Gracilaria salicornia* are numerous accumulating in a mat up to 6 inches thick in some areas. The water depth varies from four to eight feet. A classical representative of lagoon-like habitats, the up-side-down jellyfish (*Cassiopea medusa*), was seen in the channel as well as schools of small baitfish, likely nehu or Marquesian sardines.

2.4.2 Shoreline Channel Slopes

The slopes of the channel parallel to the shoreline have occasional young colonies of coral, primarily lace coral (*Pocillopora damicornis*) and finger coral (*Porites compressa*) attached to solid substrate and larger colonies of rice coral (*Montipora capitata*) that may have been transplanted as they do not appear firmly affixed to the bottom. The slope on the seaward side of the channel consists of a sand and rubble substrate with occasional rocks, whereas the landward slope (of each property) consists mainly of rocks, likely placed there as an early

shoreline stabilization effort. *Gracilaria* covers much of the substrate on either side of the channel. The pink sea cucumber (*Opheodesoma spectabilis*) is common on the *Gracilaria* beds.

2.4.3 Bay Access Channel Bottom

The bottom of the access channel grades from fine sand and mud with accumulations of algae nearest shore, to coarse and fine sand with occasional large colonies of corals, out near the reef edge. The bottom of the channel appears to have silted in over the years and occasional large clumps of coral and reef debris litter the bottom and support coral growth. The east (northeast) and west (southwest) side slopes of the access channel provide significantly different communities.

2.4.4 East Slopes of Access Channel

The eastern slopes support numerous well developed coral colonies, primarily finger coral (*Porites compressa*) up to several feet in diameter with associated fish and invertebrate communities. Large colonies of rice coral (*Montipora capitata*) were also common showing both the plate and fingered formations. At the upper edges of the slope occasional colonies of rose coral (*Pollilopora meandrina*) and lace coral could be found on stable reef rubble. Sand patches and rubble found on the western slopes (see Section 2.3.5) are absent, and the vertical structure created by the coral supports diverse vertebrate and invertebrate populations. The green alga *Dictyosphaeria cavernosa* was also observed.

2.4.5 Mouth of Access Channel

The mouth of the access channel, the furthest point examined during this survey, is home to numerous coral heads and reef fish. The size of the coral heads suggest that this reef has not been disturbed for a long period of time as it was at one point in the channels. Improved water quality may also play a role in the health of the reef at the mouth of the channel where the full range of reef fish typical of Kane`ohe Bay can be seen. On the day of the study, visibility was over 15 ft, compared to 10 feet or less in the channels and less than 5 feet in the shoreline channel.

2.4.6 West Slopes of Access Channel

In contrast to the east slopes of the access channel, substrate on the west slopes of the access channel represent a transition between the sandy silt found in the channels and the sandy rubble found on the reef flats. The abundance of rubble and distinct coloration makes it appear that during the creation of the channel the dredged material was sidecast here. This slope was largely void of any coral. An occasional patch of macro algae was encountered, including *Acanthophora specijera*, *Padina* sp. and the invasive red alga *Kappaphycus alvarezii*. Holes in the sandy areas suggest the presence of healthy populations of clams, worms and other invertebrates below ground.

2.4.7 Shallow Reef Flats

The shallow reef flats are a mosaic of coral patches, rubble patches and sand patches. The coral are less developed and sparse in relation to coral on the fringes of the access channel opening to the bay and along the western slopes of the access channel. Water depth ranges from 0.5 feet to 3 feet depending on the tide and wave action

2.4.8 Species Observed

The following marine plants and animals were identified during the field survey.

Species Observed during Underwater Site Survey		
Common Name	Scientific Name	Origin
Macro algae	<i>Gracilaria salicornia</i>	introduced
Red alga	<i>Kappaphycus alvarezii</i>	introduced
Green alga	<i>Dictyosphaeria cavernosa</i>	indigenous
Spiny seaweed	<i>Acanthophora spicifera</i>	introduced
Brown alga	<i>Padina sp.</i>	introduced
Nehu	<i>Encrasicholina purpurea</i>	endemic
Marquesian sardines	<i>Sardinella marquesensis</i>	introduced
Pink sea cucumber	<i>Opheodesoma spectabilis</i>	
Lace coral	<i>Pocillopora damicornis</i>	
Finger coral	<i>Porites compressa</i>	
Rose coral	<i>Pocillopora meandrina</i>	
Rice coral	<i>Montipora capitata</i>	
Jelly Fish	<i>Cassiopea medusa</i>	
Tube worm		
Nudibranch		

Table 1. Species Observed during Underwater Site Survey on December 12, 2007

2.5 Historical, Archaeological, and Cultural Resources

2.5.1 Cultural Impact Assessment

The project is located on the shoreline near the eastern border of the Kahalu`u ahupua`a, one of nine on Kane`ohe Bay. Kane`ohe Bay is culturally important for fishing and was historically divided among ahupua`a. There were many fish ponds around the bay. The inland area was also very productive (Hawaiian Voyaging Society website). After conquering O`ahu, Kamehameha I took ownership of the Ahupua`a and distributed other lands to his warrior chiefs. Kahalu`u was inherited by Kamehameha's sons Kamehameha II and III.

There are several historic sites in the project area that are on the national and state register of historical places including He`eia Fishpond and Kahalu`u Fishpond. He`eia Fishpond is over 500 years old. Owned by Kamehameha Schools, the pond was formerly leased for growing fish and limu. It is now used for cultural education and training as well as production. Volunteers are heavily involved in restoring the pond and in conducting educational programs. A number of books and research papers have been written about He`eia Fishpond, and the history is relatively well known. Kahalu`u Fishpond (Kahouna Fishpond), west of Wailau Point, is privately owned. It may have been in use for fish harvesting until about 1960. Adjacent land area is used for weddings and other gatherings. The fishpond wall was modified in the 1960s (Kahalu`u Community Master Plan Background Report, 2005). Other sites of interest include the Haluakaioamaoana Heiau, which was formerly located adjacent to Kahalu`u Fishpond on Wailau Point. The heiau was destroyed in 1911 to build a cannery, and a church now occupies the site. There is another small, unnamed, privately owned fishpond called "Senator Fong's Fishpond" located east of Wailau Point.

3 Alternatives

3.1 Alternative 1: No Action

“No Action” would be an unacceptable alternative because erosion and further wall destruction would continue, and the property owner must remove damaged pieces of the sea wall that are encroaching on State of Hawai'i waters. If the property owner does not take action, the State of Hawai'i may issue a violation. Further wall degradation would result in loss of Heinz property. Also, eroded material would continue to fall into the shoreline boat channel and potentially pollute water in the near shore area.

3.2 Alternative 2: Remove Existing Wall System without Replacement

Removal of the existing sea wall system without replacement would expose the Heinz property to severe erosion that would result in loss of property. Soil and rock erosion would pollute the near shore area and increase water turbidity, suspended materials, and sediments. Eventually, erosion could threaten the structural integrity of the house on the property site. Removal of the existing wall system without replacement is not an economically viable or environmentally sound alternative.

3.3 Alternative 3: Reinforced Concrete Seawall

Under Alternative 3, the entire existing double wall system would be replaced with a reinforced concrete seawall. Replacement of the Heinz wall system would require (1) removal of damaged sections of the inner retaining wall; (2) soil excavation for a new wall footing; and (3) construction of the reinforced concrete wall. The construction of a reinforced concrete wall would be difficult without heavy construction equipment. The project site lacks access for the heavy construction equipment, as shown in Figure 22. Excavation for a wall footing might require dewatering and could increase water pollution. A reinforced concrete wall is also expensive.

3.4 Alternative 4: Concrete Rubble Masonry (CRM) Seawall

Under Alternative 4, the entire existing double wall system would be replaced with a CRM seawall in a process similar to that required for a concrete wall. However, the soil at the site will not support the weight of a rock wall without a special foundation such as micro piles. Pile installation is typically expensive. And dewatering would likely be required for the footing excavation. A CRM wall does not appear to be economically a good choice.

3.5 Alternative 5: Sheet Pile Seawall

Sheet piles have advantages over other wall systems because no footing excavation is needed, and therefore no dewatering would be required. However, sheet piles do require pile driving equipment that can handle the sheet lengths required. Access for the equipment is restricted but appears to be possible. Sheets can be tied back to buried anchors on the property, which would allow shorter sheets to be used and possibly smaller installation equipment. The sheets will be placed inside the certified shoreline and will replace the existing walls. The property will not be extended seaward. Sheet piles are the alternative that is the most environmentally friendly. They are also technically straight forward to design and place. Sheet piles are the recommended shore protection system for the Heinz property. A conceptual design for a sheet pile system is shown in Figure 15.



Figure 22. Construction Equipment Access Area

Top left: Only available access area available for construction equipment through neighboring property. View is from backyard of property, facing southwest. *Top right:* View going down access to backyard of property, viewed facing northwest. *Bottom:* Seaward view of access from area from west of house.

4 Conformance with Plans and Policies

4.1 Hawai'i State Plan and Functional Plans

4.1.1 Background

The Hawai'i State Plan was developed to serve as a guide for future development of the State of Hawai'i in areas of population growth, economic benefits, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement. The Plan identifies, in general, the goals, objectives, policies and priorities for the development and growth of the State. The Plan has not been revised since 1990-91.

Twelve Functional Plans were also developed to further define the goals and objectives of the Hawai'i State Plan. The twelve functional plans include: 1) Agriculture; 2) Conservation Lands; 3) Employment; 4) Energy; 5) Health; 6) Higher Education; 7) Historic Preservation; 8) Housing; 9) Recreation; 10) Tourism; 11) Transportation; and 12) Water Resources Development.

The proposed project does not appear to have any positive or adverse impacts on the functional plans.

4.2 General Plan of the City and County of Honolulu, 2006 Edition

4.2.1 Background

The General Plan of the City and County of Honolulu is a requirement of the City Charter. The General Plan is a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens in eleven areas of concern:

1. Population;
2. Economic activity;
3. The natural environment;
4. Housing,
5. Transportation and utilities;
6. Energy;
7. Physical development and urban design;
8. Public safety;
9. Health and education;
10. Culture and recreation; and
11. Government operations and fiscal management.

This project at a private residence does not affect planning by the City and County of Honolulu.

4.3 Ko'olaupoko Sustainable Communities Plan

4.3.1 Background

The Ko'olaupoko Sustainable Communities Plan is one of eight community oriented plans intended to help guide public policy. It is oriented toward maintaining and enhancing the region's ability to sustain its unique character and lifestyle. This plan follows from the development plans of the City and County's General Plan.

The Plan contains a section of guidelines pertaining to shoreline areas. One of these guidelines is to "Discourage the use of shore armoring structures." However the guidelines are primarily focused on shoreline public access, beach erosion management, and view channels. The Heinz property is partially land filled by dredged material from Kane'ohē Bay. There is no beach along this or neighboring properties. Without shore protection, the property will erode back into Kane'ohē Bay, and the home could be threatened. Erosion here will fill the shoreline boat channel and cause water pollution. There is no practical alternative to seawalls on this or neighboring property.

5 Potential Impacts and Mitigation

5.1 Flora, Fauna, and Habitat Impacts

Even though removal and replacement of the existing seawall will likely cause turbid water around the work area, long-term impacts to local floral, fauna, or habitat are not expected. Removal of material from the collapsed wall and removal of encroaching rocks will suspend sediment in nearshore waters. The construction area will be surrounded by a silt curtain or other BMPs to minimize any spread of turbid water. Excavated material would be temporarily stored outside the setback or removed from the property. The positive effects of a sheet pile wall are that it will prevent soil and vegetation from the property from being eroded into Kane`ohe Bay and polluting the water. The lot is less than 100 feet wide at the shoreline and any turbidity will be temporary.

There do not appear to be any critical habitats or species that would be adversely impacted by typical construction methods used to replace the subject seawall. The marine environment near the project site was modified during the 1960s by dredging an access channel through the reef flat to the open bay. This change led to an increase in coral reef habitat along the western side of the access channel and a transition of the close near shore environment to a lagoon-like habitat. Additional small corals grow naturally on the side slopes of the shoreline channel. Other than these changes, the marine flora and fauna near the subject property are typical of those expected in this area of Kane`ohe Bay.

5.2 Historical, Archaeological, and Cultural Resource Impacts

None of the historic sites mentioned in Section 2 are in immediate proximity to the property. Part of the property is filled land where no buried artifacts are likely. The landowner is not aware of any cultural activities that are/were practiced on or near the property or would be affected by the proposed plans.

No impacts on the neighboring community are expected under Alternatives 3, 4, or 5. However, if no action is done (Alternative 1) or the sea wall is removed without replacement (Alternative 2), soil erosion could eventually damage neighboring properties. Replacement of the damaged seawall will not change access to or uses of Kane`ohe Bay.

5.3 Mitigation

Under Alternatives 3, 4, and 5, best management practices will be used to minimize water pollution during construction. These practices include using silt curtains or other barriers during construction and placement of stockpiled materials inland as far as possible to minimize potential runoff. Unused construction materials and any debris will be removed from the shoreline area. No other mitigation is planned.

In the event that historic resources, including skeletal remains, lava tubes, and lava blisters/bubbles are identified during construction activities, all work shall cease in the immediate vicinity of the find, the find shall be protected from additional disturbance, and the State Historic Preservation division should be contacted immediately at (808) 692-8015.

6 Significance Criteria

The determination is a Finding of No Significant Impact (FONSI), and the significance analysis is provided below.

- (1) **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource:** The project does not substantially change the existing property configuration or use. The existing seawall is broken and will be removed. An interior CRM retaining wall will be replaced with a sheet pile seawall. There are no known cultural resources at the site primarily because the location of the seawall is on land filled from dredging Kane`ohe Bay. There is no irrevocable commitment to loss or destruction of any natural or cultural resource.
- (2) **Curtails the range of beneficial uses of the environment:** The current beneficial uses of the environment include access by the landowner and neighbors to Kane`ohe Bay for kayaking or other recreation. This access will not change. Another beneficial use of the environment is the use of property for recreation and relaxing near the water. Without the proposed seawall, the property along the water will be lost.
- (3) **Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders:** The purpose of Chapter 344, HRS is to "establish a state policy which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment..." Repairing or replacing the damaged seawall prevents fill sediments and vegetation from being washed into Kane`ohe Bay, thereby polluting the water and possibly damaging marine life on the nearby fringe reefs.
- (4) **Substantially affects the economic or social welfare of the community or state:** The proposed repairs will have no major effect on the economic or social welfare of the community or state other than providing income for consultants and contractors. However, the repairs will be a large financial burden to the property owner, and without repairs, erosion could eventually damage the home on the property.
- (5) **Substantially affects public health:** The only public health issue for a seawall repair project is water pollution. The project is small, short term, and best management practices such as silt curtains can be used during construction to minimize turbid water escaping the work area.
- (6) **Involves substantial secondary impacts, such as population changes or effects on public facilities:** The proposed project is for a private lot with a single family home. There are no public facilities at the site other than an old, little used, shoreline boat channel that serves a few private residences. If the seawall is not repaired, eroded soil would wash into the shoreline channel. Population is completely unaffected by the project.
- (7) **Involves a substantial degradation of environmental quality:** If the wall is not repaired as proposed, there will be some local degradation to water quality. During repair, the nearby water may become turbid temporarily, but BMPs will be used.
- (8) **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions:** The proposed repair is small in scope and affects only the immediate property. It is not part of a larger plan that could cause considerable impact to the environment.
- (9) **Substantially affects a rare, threatened, or endangered species, or its habitat:** The Hawaiian Stilt, an endangered species, is found in Kane`ohe Bay. The best Stilt habitat is at Nu`upia Ponds Wildlife Management Area near the Marine Corps

Base Hawai'i. A "species of concern" in Kane`ohe Bay is the inarticulated brachiopod (*Lingula reevii*), which is only known to occur in the shallow, sandy reef flats in the Bay. Another species of concern found in Kane`ohe Bay is the Hawaiian reef coral, *Montipora dilatata*. None of these species were observed at the site and none should be substantially affected by repairing or replacing a seawall along the eroding shoreline, since the habitat near the wall is different from the natural habitat.

- (10) **Detrimentially affects air or water quality or ambient noise levels:** Nearby water will likely become turbid during seawall construction. Best management practices, such as silt curtains, will minimize release of turbid water from the work site. Since soil is wet or underwater at the work site, release of air pollutants such as dust is highly unlikely. Use of small construction equipment will cause a temporary increase in noise but not to detrimental levels. Large construction equipment cannot access the site.
- (11) **Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters:** The project is to repair/replace a damaged seawall that has been in place on the shoreline of Kane`ohe Bay for many years. The existing wall was damaged by slow erosion from locally generated wind waves. A wide, shallow fringing reef is located mauka from the property, and deep water waves and tsunami do not typically reach the project site. There is no sand beach at the site.
- (12) **Substantially affects scenic vistas and viewplanes identified in county or state plans or studies:** The seawall location is not part of a scenic vista or viewplane. Its low height means that the wall would not be very noticeable unless an observer was in a boat nearby. Homes and vegetation at higher elevation essentially block any view of the wall from Kamehameha Highway.
- (13) **Requires substantial energy consumption:** Other than fuel to run equipment during construction, the new seawall will require no energy consumption.

7 Permits, Variances, and Approvals

7.1 Permits

- A. Shoreline Setback Variance, City and County of Honolulu, Department of Planning and Permitting. Status: in preparation
- B. Building Permit, City and County of Honolulu, Department of Planning and Permitting. Status: Will be prepared after designs are complete
- C. Certified Shoreline Approval, Department of Land and Natural Resources Office of Conservation and Coastal Lands
- D. Department of the Army Permit, Section 10 or Section 404 will be required for removing rocks and broken seawall and for placing sheet piles.
- E. Department of Health 401 Water Quality Certification may be required if a Department of the Army Section 404 is required. This permit includes a Best Management Practices Plan with water quality and assessment plans.

7.2 Shoreline Setback Variance

Section 23-1.8 of Revised Ordinances of Honolulu governs granting a variance for work in the shoreline setback, which is 40 feet inland from the certified shoreline. The Hardship Standard is as follows:

Section 1.8(b)(3)(A) A structure or activity may be granted a variance upon grounds of hardship if:

- (i) The applicant would be deprived of reasonable use of the land if required to comply fully with the shoreline setback ordinance and the shoreline setback rules;*
- (ii) The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of this chapter and the shoreline setback rules; and*
- (iii) The proposal is the practicable alternative which best conforms to the purpose of this chapter and the shoreline setback rules.*

The shoreline portion of the Heinz property was constructed with dredged fill from Kaneohe Bay. This soil is soft and easily eroded. The property was protected by a double wall system, a seawall plus and inner CRM retaining wall, across a 65-foot section. This seawall bordered on a shoreline small boat channel and was the shoreline in 1963. The seawall has partially collapsed after the foundation material eroded into the boat channel. The inner wall is a CRM wall that is not technically constructed as a seawall. The space between the two walls is filled with marine gravel and rock. Since the outer seawall collapsed, the inner wall is now exposed to the ocean at some places; and the certified shoreline, formerly at the outer wall, has been moved to the seaward face of the CRM inner wall. If the existing inner wall, which lies within the certified shoreline, is not reconstructed; it will soon fail due to physical degradation and undercutting caused by erosion. If the wall is permitted to fail completely, or if it is removed without replacement, the filled land will erode and slump into the adjacent shoreline boat channel. The property owner will then lose a significant part of her property. The home on the property is supported on large piles that depend on stable soils. If continuing erosion approached the piles, the home could eventually be threatened. The home cannot be moved farther inland. The reconstructed side wall and the gazebo roof replacement are also within the shoreline setback and subject to the SV.

The alternative designs for shoreline protection are discussed in Chapter 3. A sheet pile wall is the selected alternative design because it is less expensive and causes fewer environmental problems than other alternatives. Rock or concrete seawalls typically require excavation for a footing. The footing excavation would be below sea level and could require dewatering. There is no practical way to store or dispose of dewatering effluent at the site. Excavation also exposes the soil to wave erosion and resulting water pollution. Sheet piles will minimize the possibility of pollution. Therefore, sheet piles are the most practicable alternative that best conforms to the purpose of Chapter 23 Shoreline Setbacks and the shoreline setback rules.

8 Contacts with Community Groups and Agencies

- A. Letter to Councilman Dela Cruz's office with project description. No response.
- B. Letter to Kahalu`u Neighborhood Board #2 with project description. No response.
- C. Discussion and site visit with the Department of Land and Natural Resources Office of Conservation and Coastal Lands on shoreline location.
- D. Discussion with planner at the City and County of Honolulu Department of Planning and Permitting.

9 REFERENCES

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University of Hawai`i CISNet Kane`ohe Bay 2008

Appendix A: Marine Biological Evaluation, December 2007

MARINE BIOLOGICAL EVALUATION

Kaneohe Bay at the Heinz Property

47-119 Kamehameha Highway

December 12, 2007

Background

The project site is on the shore of the central portion of Kaneohe Bay on the windward side of the island of Oahu. Kaneohe Bay is a large embayment protected by a fringing reef with numerous emergent patch reefs within the inner lagoon area. In most areas, the inner shoreline of the bay consists of a shallow reef flat grading from fine sand or mud at the shore to coarse sand at the reef edge in 2 to 6 feet of water. The edge of the reef varies from 100 feet to well over 1000 feet off shore with the shallow back reef area supporting sand dwelling communities and very limited coral or algae growth. Up until about the 1960s a number of shoreline communities dredged channels through this shallow back reef flat to allow boat access to the open bay and to provide secure mooring areas close to shore. One such access channel exists fronting the Heinz property providing access to the reef face about 650 offshore. Throughout the bay the narrow reef face typically supports almost 100% coral cover and drops nearly vertically to the talus slope and mud floor of the bay at depths varying from 10 to 30 feet. Water quality varies considerably over the shallow nearshore reefs of Kaneohe Bay and is dependent upon tide, proximity to stream mouths, wind and wave chop energy, and recent rainfall. Underwater visibility at the time of the visit was less than 2 feet close to shore, gradually improving to 15 feet at the mouth of the access channel.

Methods

On December 12, 2007, two Oceanit biologists conducted an underwater visual survey of the nearshore bottom during the early morning when the tide was low (about 0.0 feet MLLW). Data was recorded and digital photographs were taken. The nearshore intertidal and channel areas fronting the Heinz property and properties on either side were inspected. The access channel through the back reef area was examined out to and including the shallow reef front in Kaneohe Bay. The survey included inspection of the channel and its slopes fronting the property, inspection of the access channel that connects to the main body of Kaneohe Bay and its slopes, and inspection of the shallow reef flats between the shoreline channel in front of the property and the main body of Kaneohe Bay.

Results

The reef fronting the subject property varies from 650 to 1200 feet in width and averaged 1 to 4 feet deep on the morning of the survey. A shoreline channel has been dredged parallel to the shoreline roughly 30 to 40 feet wide along approximately 1200 feet of shoreline fronting a dozen shoreline homes. This shoreline channel is connected to the open bay through a 650 foot-long, 20 to 30 foot-wide access channel across the shallow back reef flat. Each of the homes fronting the shoreline channel has constructed a seawall at the shoreline.

The areas inspected can be broken down into assemblages based upon physical conditions and populations of fish, invertebrate, and algae communities supported:

1) Shoreline Boat Channel Bottom

Fine silt and decomposing plant material lines the bottom of the shoreline boat channel fronting the subject and adjacent properties. The channel bottom is devoid of coral, but clumps of the introduced macro algae *Gracilaria salicornia* are numerous accumulating in a mat up to 6-inches thick in some areas. The water depth varies from four to eight feet. A classical representative of lagoonal habitats, the up-side-down jellyfish (*Cassiopea medusa*) was seen in the channel as well as schools of small baitfish, likely nehu or Marquesian sardines.

2) Shoreline Channel Slopes

The slopes of the channel parallel to the shoreline have occasional young colonies of coral, primarily lace coral (*Pocillopora damicornis*) and finger coral (*Porites compressa*) attached to solid substrate and larger colonies of rice coral (*Montipora capitata*) that may have been transplanted as they do not appear firmly affixed to the bottom. The slope on the seaward side of the channel consists of a sand and rubble substrate with occasional rocks, whereas the landward slope (of each property) consists mainly of rocks, likely placed there as an early shoreline stabilization effort. *Gracilaria* covers much of the substrate on either side of the channel. The pink sea cucumber *Opheodesoma spectabilis* is common on the *Gracilaria* beds.

3) Kaneohe Bay Access Channel Bottom

The bottom of the access channel grades from fine sand and mud with accumulations of algae nearest shore, to coarse and fine sand with occasional large colonies of corals, out near the reef edge. The bottom of the channel appears to have silted in over the years and occasional large clumps of coral and reef debris litter the bottom and support coral growth. The east (north-east) and west (south-west) side slopes of the access channel provide significantly different communities.

4) West slopes of Access Channel

Substrate on the west slopes of the access channel represent a transition between the sandy silt found in the channels and the sandy rubble found on the reef flats. The abundance of rubble and distinct coloration makes it appear that during the creation of the access channel the dredged material was sidecast here. This slope was largely void of any coral. An occasional patch of macro algae was encountered, including *Acanthophora specifera*, *Padina* sp. and the invasive red alga *Kappaphycus alvarezii*. Holes in the sandy areas suggest the presence of healthy populations of clams, worms and other invertebrates below ground.

5) East Slopes of Access Channel

In contrast to the western slopes of the access channel, the eastern slopes support numerous well developed coral colonies, primarily finger coral (*Porites compressa*) up to several feet in diameter with associated fish and invertebrate communities. Large colonies of rice coral (*Montipora capitata*) were also common showing both the plate and fingered formations. At the upper edges of the slope occasional colonies of rose coral (*Pocillopora meandrina*) and lace coral could be found on stable reef rubble. Sand patches and rubble

are absent, and the vertical structure created by the coral supports diverse vertebrate and invertebrate populations. The green alga *Dictyosphaeria cavernosa* was also observed.

6) Shallow Reef Flats

The shallow reef flats are made up of a mosaic of coral patches, rubble patches and sand patches. The coral are less developed and sparse in relation to coral on the fringes of access channel opening to the Bay and along the western slopes of the access channel. Water depth ranges from 0.5 feet to 3 feet depending on the tide and wave action.

7) Mouth of Access Channel

The mouth of the access channel, the furthest point examined during this survey, is home to numerous coral heads and reef fish. The size of the coral heads suggest that this reef has not been disturbed for a long period of time as it was at one point in the channels. Improved water quality may also play a role in the health of the reef at the mouth of the channel. At the mouth of the channel the full range of reef fish typical of Kaneohe Bay can be seen. On the day of the study, visibility was over 15 ft, compared to 10 feet or less in the access channel and less than 5 feet in the nearshore shoreline channel.

Interpretation

The marine environment near the project site was modified approximately a half century ago by the dredging of the access channel through the reef flat to the open bay. This change has led to an increase in coral reef habitat along the western side of the access channel and a change in the very near shore habitat making it more like a lagoon. Additional small corals grow naturally on the side slopes of the shoreline channel, but it appears that some larger colonies may have been transplanted to these areas. Other than this change, the marine flora and fauna off from the subject property is typical of that expected from this area of Kaneohe Bay. There do not appear to be any critical habitats or species that would be adversely impacted by any reasonable construction methods used to restore the subject seawall.

The following marine plants and animals were identified during the field survey:

Gracilaria salicornia (introduced)

Kappaphycus alvarezii red alga (introduced)

Dictyosphaeria cavernosa green alga (indigenous)

Acanthophora spicifera

Padina

Pink sea cucumber: *Opheodesoma spectabilis*

Coral: *Montipora capitata*

Jelly Fish

Tube worm

Nudibranch

Appendix B: Seawall Evaluation, January 2007



February 26, 2007

Dr. Ursula Heinz
47-119 Kamehameha Highway
Kaneohe, HI 96744

Subject: Seawall Evaluation Report for 47-119 Kamehameha Highway

Dear Dr. Heinz:

The following is Oceanit's evaluation of the seawall at 47-119 Kamehameha Highway with recommendations.

SITE VISIT

I inspected the seawall on January 25, 2007. From the inspection and from discussion with you, I learned the following:

1. There are two parallel walls along the shoreline. The outer wall is concrete and the inner wall is concrete rubble masonry (CRM). The space between the walls is filled with rock and gravel. Sections of the outer wall have fallen. The CRM wall may also be damaged.
2. There have been sinkholes in the yard indicating that soil is being washed out to the bay under the CRM wall. Sinkholes are evidence that the wall foundation is shallow and probably not stable.
3. There is a boat channel dredged just outside and parallel to the outer wall. The bottom slopes down from the wall into the channel. This channel may have contributed to the loss of foundation material from under the outer wall.
4. Rainwater apparently ponds in the yard indicating that the soils do not drain well. If the drainage concentrates in a few locations, that could also aggravate flow and loss of soil from under the inner wall.
5. Some rocks were placed outside the existing walls, and the Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL) determined that these were encroachments into state waters.
6. The survey produced by Francis McGrail shows that the shoreline follows along the seaward face of the inner CRM wall.
7. Part of the retaining wall along the border of your property was demolished to allow equipment access. You received a violation from the City and County for rebuilding the wall without a permit.

EVALUATION

The rocks placed between the two walls have damaged the outer wall and have not helped with stabilizing the inner wall. The City and County Department of Planning and Permitting (DPP) typically requires a Shoreline Setback Variance (SV) to place rocks along the shoreline. They will likely request that these rocks be removed or that you apply for an after-the-fact SV. You will need a certified shoreline to get the variance; however, DLNR will not certify the shoreline if there are encroachments such as the rocks inside and outside the outer wall. You will also need an environmental assessment (EA).

Existing Conditions

I discussed the location of the certified shoreline with DLNR/OCCL. Since the outer wall is no longer intact and the new rocks are not permitted, the shoreline would likely be certified along the seaward face of the inner wall. This would mean that any new wall would have to replace the existing inner wall, and the outer wall could not be repaired or replaced. They would also request that the new rocks be removed.

However, we obtained a copy of the certified shoreline map from 1993-94 that shows the shoreline around the outer wall (copy attached). The wall has apparently been in place since 1963, which is prior to the state's conservation laws in 1964 and the county's grandfather date of July 1970.

Outer Wall

There is a chance that DPP might allow the outer wall to be replaced or restored. If they did, then the shoreline could again be placed at the outer wall. DPP would probably require an SV or a Building Permit or both. However, DPP might not grant a permit now that the wall is more than 50 percent damaged.

If DPP will not grant permission to restore the outer wall, then the inner wall is the only remaining barrier to more property loss.

Inner Wall

Since the sinkholes show that the inner wall foundation is not deep enough to prevent flow under the wall, the foundation will probably have to be made deeper. This can be done by digging down behind the wall and placing rock and cement grout. This type of repair is difficult and does not always work. However, DPP might grant a repair permit if the wall is considered less than



50 percent damaged. With a repair permit, no environmental assessment (EA) would be required. A building permit would be required.

A second alternative to the rock and grout repair is to place sheet piles along the seaward face of the inner wall if the certified shoreline allows. Sheet piles are driven into the mud by special equipment and might be difficult because site access is restricted. Sheet piles could also be placed along the inner face of the inner wall. The wall could then be removed since it would no longer have any function.

A third alternative is to replace the existing inner wall with a concrete or rock retaining wall with a deep foundation.

The second and third alternatives require an SV and an EA plus design plans.

RECOMMENDATIONS

1. Meet with DPP to discuss the possibility of repairing/replacing the existing outer wall with a City and County permit but without a new certified shoreline. Stress that the inner wall is not designed as a seawall and that if the outer wall is removed, you will lose property to erosion very quickly. If needed, Oceanit could write a letter on your behalf that states that fact. Emphasize that the boat channel dredged along your property has contributed to the erosion and loss of foundation for your wall. (It would be good to know when that channel was dredged.) The idea is to ask DPP to accept the old certified shoreline until repairs/replacement is done and to convince them that the outer wall was slowly being undermined.
2. If DPP agrees, obtain an engineered design for the work and apply for a building permit.
3. Remove the new rocks located between the walls and in state waters outside the existing wall. Stockpile them toward your house as far as possible so that they are not in the 40-foot setback.
4. Repair the outer wall to the extent allowed by DPP. Preferably, replace the wall with a new design. If that isn't allowed, restore the wall to its former condition.
5. Make a new shoreline survey so that the shoreline is along the seaward side of the outer wall. You will need preliminary agreement with DLNR/OCCL to do this. You might also need agreement from the City and County DPP.
6. If DPP and DLNR do not agree to the repair or replacement scheme given in steps 1-6 above, then you will probably have to replace the inner wall as described in the Evaluation section above and remove the outer wall.

There are a number of unknowns in the recommended process. These will have to be handled as they arise. You may have better luck negotiating with DPP than



Heinz Seawall Evaluation
February 26, 2007
Page 4 of 4

Oceanit would, since you could potentially lose property. There is no beach outside your seawall and no harm to the shoreline or your neighbors if you repair or replace the wall. A new wall will not damage the environment. Any turbidity during construction would be temporary. The county gains nothing by denying you the right to make the repairs.

We understand that the process of design and permits can be complex and confusing. We can prepare a proposal to assist you with the recommended tasks if you want. Design tasks will have to be done by a professional, but you can process permit applications yourself to keep costs down. You will need a competent construction contractor if you receive permission to replace the old structures with new ones.

Please let us know if you have questions on the evaluation or recommendations.

Sincerely,

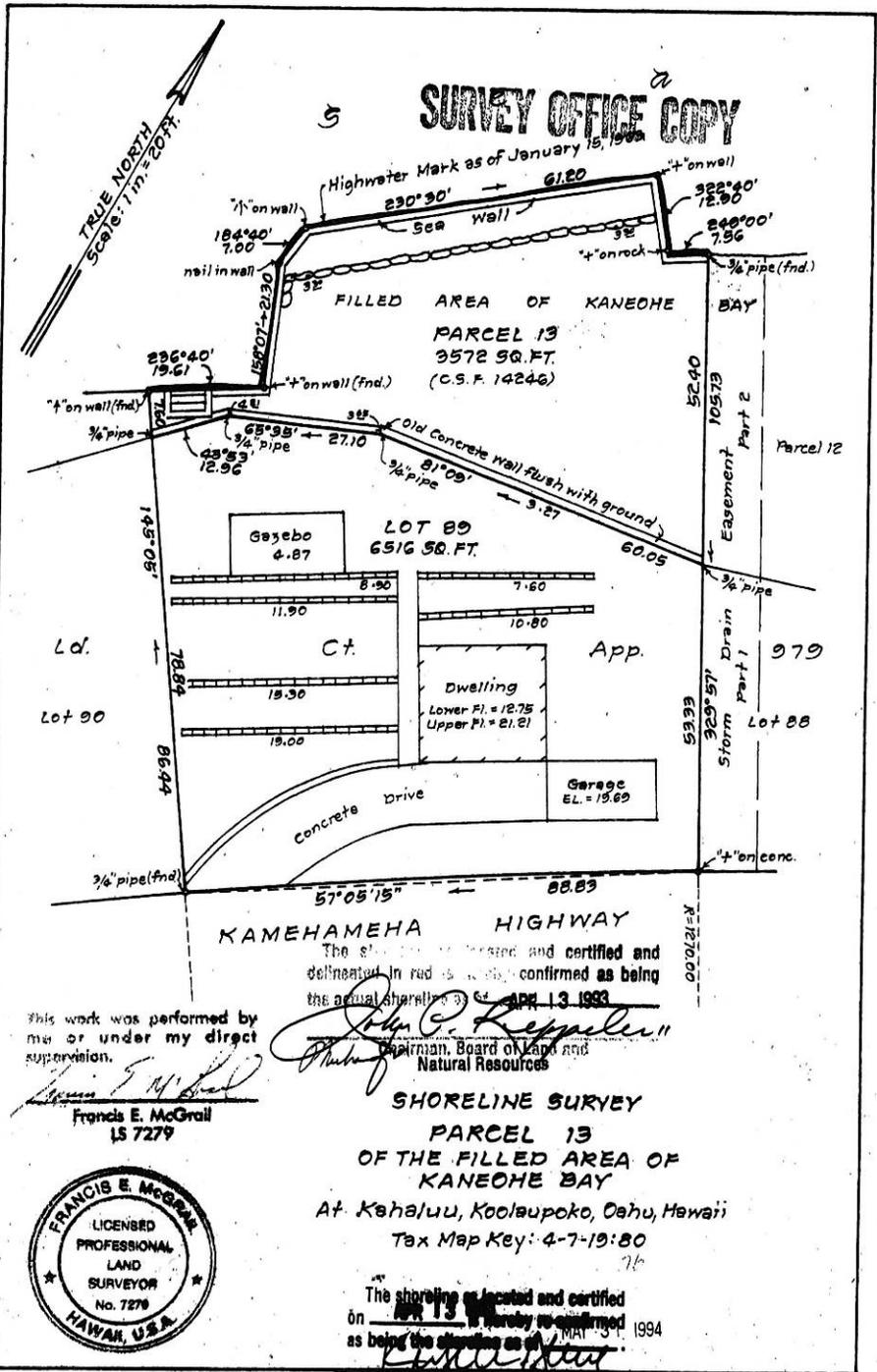


Warren E. Bucher, Ph.D., P.E.
Senior Ocean Engineer

Attachment - Certified Shoreline Map 1993-94
Cost Estimate



SURVEY OFFICE COPY



This work was performed by me or under my direct supervision.

Francis E. McGrail
LS 7279



SEAWALL REPAIR COST ESTIMATE
HEINZ PROPERTY
2/16/2007

TASK	COST EST	COMMENTS
<u>OUTER WALL RESTORATION</u>		Do this task first to re-establish the prior shoreline.
DESIGN FOR WALL RESTORATION	\$7,500	
PERMITS (depends on City reqmts)	?	Need to consult with City DPP.
SHORELINE SURVEY	\$4,000	This has to be done by a Licensed Land Surveyor
CONSTRUCTION	\$8,000+	
<u>OUTER WALL REBUILD</u>		Do this if shoreline approved at outer wall and replacement permitted.
DESIGN	\$10,000	
PERMITS		
Shoreline Setback Variance	\$8,000	
Building Permit	\$4,000	
EA	\$12,000	Required with SV.
CONSTRUCTION QUALITY CONTROL	\$6,000	Inspection required if design stamped by Professional Engineer.
CONSTRUCTION	\$63,000	Get quotes for a better estimate.
<u>INNER WALL REBUILD</u>		Do this if not allowed to rebuild outer wall.
SHORELINE SURVEY	\$4,000	Shoreline would follow outer face of inner wall if outer wall not allowed.
DESIGN	\$10,000	
PERMITS		
Shoreline Setback Variance	\$8,000	
Building Permit	\$4,000	
EA	\$12,000	Required with SV.
CONSTRUCTION QUALITY CONTROL	\$6,000	Inspection required if design stamped by Professional Engineer.
CONSTRUCTION	\$63,000	Get quotes for a better estimate.



Appendix C: Comment Letters and Response

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII -1 A11 :38
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707
CITY & COUNTY OF HONOLULU

DATE: November 24, 2009

LOG: 2009.4481

DOC: 0911RS17

TO: Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

SUBJECT: **Chapter 6E-42 Historic Preservation Review / Draft Environmental Assessment for Heinz Seawall, Kaneohe, Koolaupoko, Oahu**
Permit # (None)
Building Owner: Ursula Heinz
Location: 47-119 Kamehameha Highway
Tax Map Key: (1) 4-7-019:076

Mahalo for the opportunity to review and comment on this *Draft Environmental Assessment for the Heinz Sea Wall Repair, Kaneohe Bay, Oahu, Hawaii* by Oceanit.

The project consists of replacement of damaged seawall at 47-119 Kamehameha Highway following procedures based upon the National Environmental Policy Act (NEPA) 42 U.S.C. 4321, 40 CFR §1500-1508, and HRS 343.

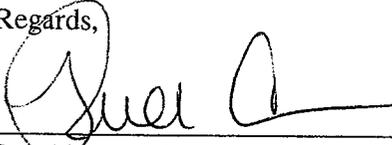
The current dual wall system of concrete and concrete rubble masonry is failing, leading to erosion of the filled area mauka. The owner has studied several remedies, including removing the existing wall without replacement; constructing a reinforced concrete seawall or concrete rubble masonry seawall; a sheet pile structure; or doing nothing. The owner proposes to replace the existing dual system with the sheet pile wall option, following the shoreline/property line. Sheet piles would be driven into the ground deep enough for stabilization and scour prevention. Such sheet piles are seen to have an advantage over other potential wall systems because no toe excavation and no dewatering would be needed. While differing materials, such as steel, aluminum, concrete, vinyl, or fiber reinforced plastic are available for a sheet pile wall, the final material has not been chosen. Tiebacks may also be employed to prevent soil from pushing the wall over. The area of potential affect would be the wall footprint and, during the construction period, areas immediately adjacent.

Historical resources located nearby include the 500 year old Heeia and Kahaluu Fishponds and what is locally known as "Senator Fong's Fishpond". The site of the now destroyed Haluakaiomaoana Heiau abuts the Kahaluu Fishpond.

The owner seeks a finding of no significant impact (FONSI) for the project. It is the opinion of this office that, because the project is a replacement, we concur with a FONSI determination. We also accept the Draft document. Please send a copy of the FINAL document in both printed and electronic form to us for the Division Library.

Any questions should be addressed to Ross W. Stephenson at (808) 692-8028 or ross.w.stephenson@hawaii.gov.

Regards,



Pua Aiu, Administrator, Hawaii State Historic Preservation Division

In the event that historic resources, including human skeletal remains, lava tubes, and lava blisters/bubbles are identified during construction activities, all work should cease in the immediate vicinity of the find, the find should be protected from additional disturbance, and the State Historic Preservation Division should be contacted immediately at (808) 692-8015.

cc: Warren Bucher, PhD, PE
Oceanit Laboratories, Inc
828 Fort Street Mall, Unit 600
Honolulu, HI 96813

cc: Office of Environmental Quality Control
235 South Beretania Street, Unit 702
Honolulu, HI 96813

cc: Dr. Ursula Heinz
47-119 Kamehameha Highway
Kaneohe, HI 96744



August 5, 2010

Ms. Pua Aiu, Administrator
Hawaii State Historic Preservation Division
601 Kamokila Boulevard, Room 555
Kapolei, HI 96707

Subject: Chapter 6E-42 Historic Preservation Review / Draft Environmental
Assessment for Heinz Seawall, Kane`ohe, Ko`olaupoko, Oahu

Dear Ms. Aiu:

Thank you for the comments on the Draft Environmental Assessment for the
Heinz Seawall, dated November 24, 2009 (copy of comments attached). As you
requested, we will send you both a print and electronic copy of the Final EA.

We will include in the project plans and specifications your statement that:

*In the event that historic resources, including human skeletal remains,
lava tubes, and lava blisters/bubbles are identified during construction
activities, all work should cease in the immediate vicinity of the find, the
find should be protected from additional disturbance, and the State
Historic Preservation Division should be contacted immediately at (808)
692-8015.*

If you need additional information, please contact me or Joanne Hiramatsu at
531-3017.

Sincerely,

Warren E. Bucher, Ph.D., P.E.
Senior Engineer

Attachment

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-09-160

December 27, 2009

Warrant Bucher
Oceanit Laboratories, Inc.
828 Fort Street Mall, Suite 600
Honolulu, Hawaii 96813

Dear Dr. Bucher:

SUBJECT: Draft Environmental Assessment for Heize Seawall Repair
Kaneohe, Oahu, Hawaii
TMK: (1) 4-7-019: 076 and 080

Thank you for allowing us to review and comment on the subject application. The application was routed to the various branches of the Environmental Health Administration. We have the following Clean Water Branch and General comments.

Clean Water Branch

According to page 3 of the DEA, "[A]long a 68-foot section of shoreline, the center of the property is protected by a double wall system. The wall system consists of an outer concrete seawall and an inner concrete rubble masonry (CRM) retaining wall. The space between the walls is filled with rock and gravel. Portions of the outer seawall have collapsed, allowing water to reach the inner retaining wall. . . Rocks placed along the walls are encroaching into state waters (see Figure 9)."

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject DEA and offers the following comments. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 (titled Water Quality Standards (WQS)) and 11-55 (titled Water Pollution Control). The Applicant, Dr. Ursula Heinz, may be responsible for fulfilling additional requirements related to our program. We recommend that Dr. Ursula Heinz should also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, §11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, § 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, §§ 11-54-4 through 11-54-8).
2. Based on information contained in the DEA, we recommend that the Honolulu Engineer District (HED) of the U.S. Army Corps of Engineers (COE) should be consulted for the potential Department of the Army (DA) permitting requirements for construction activity such as the removal of outer wall and rock that is encroaching into State waters (navigable waters of the U.S.?) A Clean Water Act (CWA), Section 401, Water Quality Certification (WQC) may be required if a DA CWA, Section 404 permit is required.
3. The potential adverse impact resulting from the installation of the proposed "Sheet Pile" shore protection measure needs to be discussed.

The potential adverse impact to the eastern (CRM wall) and western (concrete wall) property shore protection measures was not discussed. Specifically, the potential impact to "the western shoreline is protected by a small concrete wall that is being undermined." Applicable monitoring should be properly established to monitor the potential adverse impact, if any. A contingency plan may be needed if any adverse impact to the adjacent properties and/or their shore protection measures is detected.

4. Please clarify the "term" used in the DEA.

Terms such as the "Shoreline channel," "boat channel," "small boat channel," "Ship Channel," "access channel," and "Bay access channel" are used in the DEA. Exactly how many channels are there near the project site?

5. The receiving State water, Kaneohe Bay, is classified by the DOH as "Class AA, Marine waters. An Applicable Monitoring and Assessment Plan should be properly designed and implemented to ensure the adequacy of the implemented BMPs measures and to demonstrate that the project construction and/or operation related discharge activities do not cause basic and applicable specific water quality criteria to be violated in the receiving State waters.
6. Dr. Ursula Heinz must be informed that all discharges related to the project construction activities, whether or not a Section 401 WQC is required, must comply with the State WQS.

Dr. Bucher
December 27, 2009
Page 3

Noncompliance with WQS requirements contained in HAR, Chapter 11-54, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

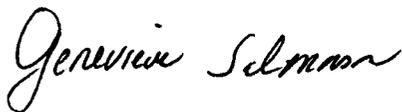
General

We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist) created by Built Environment Working Group (BEWG) of the Hawaii State Department of Health. The BEWG recommends that State and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



GEVEVIEVE SALMONSON, Acting Manager
Environmental Planning Office

c: EPO
CWB



August 12, 2010

Ms. Genevieve Salmonson, Acting Manager
Environmental Planning Office
State of Hawaii Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Draft Environmental Assessment for Heinz Seawall Repair
Kane`ohe, Oahu, Hawaii, TMK: (1) 4-7-019:076 and 080

Dear Ms. Salmonson:

Thank you for your review and comments on the subject DEA dated December 27, 2009, reference EPO-09-160. We also received comments from the Honolulu Engineer District of the U.S. Army Corps of Engineers (COE). The COE has assigned file number POH-2010-00020 to the project and has determined that the project will likely result in the excavation and discharge of dredged or fill material into navigable waters of the U.S. Therefore, the landowner will apply for a Department of the Army Permit to remove a collapsed seawall and rock fill. The landowner will also replace the existing seawall with a sheet pile seawall that will follow the same line. The new wall will be subject to the ebb and flow of the tide. Oceanit is representing Dr. Heinz for permit actions related to replacing existing seawall structures with a new sheet pile seawall.

The following is our response to the Clean Water Branch comments by comment number:

1. Our client and her selected contractor will be informed of the requirements of HRS Chapters 11-54 and 11-55. We have provided the client with the CWB standard comments and have informed her of the requirement for BMPs.
2. As stated above, we have received comments from the COE on their permit requirements and will be submitting a permit application for removing rocks and a broken seawall from the water and for placing sheet piles. The COE may require a Section 404 permit for placing sheet piles at the location of the existing seawalls.
3. The potential impact from placing sheet piles and removing the existing walls will be discussed in the FEA. The existing retaining walls and seawall will be removed as they are replaced by sheet piles. During removal, the contractor will have to control soil loss from the yard until the

sheet piles are in. We anticipate water quality monitoring during construction and a BMP will be prepared. We do not expect any adverse impact to neighboring properties or their seawalls. The new sheet pile wall will butt up against the adjacent walls at the sides of the property. Neighboring walls will not be removed or replaced, although the concrete wall on the west will have to be vertically cut because it is continuous across neighboring property. Some patching at the cut may be necessary. The neighboring CRM wall on the east is not attached to Dr. Heinz's CRM wall.

4. There are three interconnected channels near the project site. A small "shoreline channel" parallels the shoreline and allows boats to reach waterfront properties. The shoreline channel is connected to the deeper waters of Kane`ohe Bay by an "access channel" through the reef flat. A larger "ship channel" runs from the ocean through Kane`ohe Bay to the Marine Corps Base Hawaii. The channels will be labeled on an aerial photo in the environmental assessment.
5. A Best Management Practices Plan (BMP) including a water quality monitoring and an assessment plan will be prepared for the project.
6. Water quality will be measured pre-, during-, and post-construction and compared with the Chapter 11-54 standards. The property owner will be informed of Chapter 11-54 requirements and penalties.

A copy of your comments letter is attached. Please let me know if you need additional information.

Sincerely,



Warren E. Bucher, Ph.D., P.E.
Senior Engineer

Attachment



REPLY TO
ATTENTION OF:

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

January 19, 2010

Regulatory Branch

File No.: POH-2010-00020

David K. Tanoue
Director
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Tanoue:

This responds to your request for comments for the draft Environmental Assessment (dEA) and Shoreline Setback Variance Application for a proposed remove and replace seawall project (TMKs 147019076, 147019080), Kaneohe Bay, Oahu Island. Based on the information provided, I have determined that the proposed activities and development at this location will likely result in the excavation of, and discharge of dredged or fill material into navigable waters of the U.S., namely Kaneohe Bay. Prior to undertaking this project, Dr. Ursula Heinz, or her authorized agent should consult with our office to determine the information requirements for submitting a Department of Army (DA) permit application.

The dEA was reviewed pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 requires that a Department of Army (DA) permit be obtained for certain structures or work in or affecting navigable waters of the United States (U.S.), prior to conducting the work (33 U.S.C. 403). Navigable waters of the U.S. are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified as navigable by the Honolulu District. In addition, a Section 10 permit is required for structures or work outside this limit if they affect the course, location, or condition of the waterbody as to its navigable capacity.

Section 404 requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work (33 U.S.C. 1344). For regulatory purposes, the area of Corps jurisdiction under Section 404 extends shoreward to the high tide line for the waters of Kaneohe Bay. The term "high tide" includes spring high tides and other high tides that occur with periodic frequency, but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

File Number POH-2010-00020 has been assigned to this project. Please feel free to contact Mr. Farley Watanabe of my staff at 438-7701, or by facsimile at 438-4060 or by email at Farley.K.Watanabe@usace.army.mil if you have additional questions.

Sincerely,



George P. Young, P.E.
Chief, Regulatory Branch

Copy Furnished:

Clean Water Branch, Environmental Management Division, Hawaii State Department of Health,
P.O. Box 3378, Honolulu, HI 96801-3386

State Planning, Coastal Zone Management Program, P.O. Box 2359, Honolulu, HI 96811

State of Hawaii, DLNR, OCEA, P.O. Box 621, Honolulu, HI 96809

Dr. Ursula Heinz, 47-119 Kamehameha Highway, Kahalu`u, HI 96817



August 9, 2010

Mr. George P. Young, P.E., Chief
Regulatory Branch
Department of the Army
U.S. Army Corps of Engineers, Honolulu District
Ft. Shafter, HI 96858-5440

Subject: Comments on Draft Environmental Assessment for Remove and
Replace Seawall Project, TMK: (1) 4-7-019:076, 080,
File No. POH-2010-00020

Dear Mr. Young:

The following is our response to your comments on the subject Draft
Environmental Assessment. A copy of your letter is attached.

We agree that the project involves removal of fill material from the navigable
waters of the U.S. The owner plans to remove an old broken seawall and rock
fill. She will also remove the remaining existing seawalls and the inner CRM wall
and will replace them with a sheet pile wall system that will follow the certified
shoreline and location of the existing walls. The existing and proposed seawalls
are subject to the ebb and flow of the tide to the mean high water mark. The top
of the existing vertical walls is at an elevation over 3 feet above MSL, which is
above Mean Higher High Water (MHHW). The owner will apply for a Department
of the Army Permit.

Thank you for your assistance. If you need additional information, please contact
me or Joanne Hiramatsu at 531-3017.

Sincerely,

Warren E. Bucher, Ph.D., P.E.
Senior Engineer

Attach

cc: City and County of Honolulu, DPP

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

10
REC'D
APR 29
HRD09/4794

January 29, 2009

David Tanoue
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

RE: Request for comments on Heinz sea wall repair draft environmental assessment (DEA), Kahalu'u, O'ahu, TMK: 4-7-019:076 and seaward.

Aloha e David Tanoue,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated December 31, 2009. OHA has reviewed the project and offers the following comments.

OHA asks if there is a certified shoreline and if not, that one be done. Further, we urge that the shoreline be certified along the mauka side of the inner wall. If the preferred alternative of sheet pilings is decided upon, they can be placed along the inner face of this inner wall and then the walls could then be removed since they would no longer have any function as the applicant's seawall evaluation states. (Appendix B, page three.) We recognize that there are ongoing impacts to the environment being caused by the current degraded state of the outer seawall and agree that this should be addressed. OHA is concerned that the applicant should not be allowed to extend their property makai into ceded lands take away from the public trust in the process.

Naturally we were glad to read that best management practices will be put in place to safeguard the resources in the area; however, OHA is curious as to why a portable cofferdam was not explored as an alternative. We have seen this used in other projects in this state and it does seem to be a viable alternative to include for this proposal in an environmental disclosure document.

David Tanoue
January 29, 2010
Page 2

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o
Chief Executive Officer

C: Sam Lemmo
Office of Conservation and Coastal Lands
PO Box 621
Honolulu, Hawai'i 96809



August 9, 2010

Mr. Clyde W. Namu`o, Chief Executive Officer
Office of Hawaiian Affairs
711 Kapi`olani Boulevard, Suite 500
Honolulu, HI 96813

Subject: Comments on Heinz Seawall Repair Draft Environmental
Assessment (DEA), Kahalu`u, O`ahu, TMK: 4-7-019:076

Dear Mr. Namu`o:

Thank you for your comments on the subject DEA. A copy of your letter is attached. Our response to each comment is given below.

The property owner is required to obtain a certified shoreline before making repairs to the seawall. The project surveyor has submitted a shoreline survey map to DLNR for processing. The certified shoreline will most likely be on the outer face of the inner wall along the front side of the property and along the seaward face of the existing walls on the sides. This is a typical placement for existing walls of this type. The waves at this location are very small and the high wash of the waves does not overtop the walls. The new sheet pile walls will be placed inside the certified shoreline along the property line as the existing walls are removed. Placing the sheet piles inside the existing walls can be difficult. If there is a buried foundation that extends inward from the wall, the sheet piles cannot be driven because they cannot penetrate concrete or rock. The shape of the buried part of the existing wall is not known so the risk is considered too high. To determine the walls' inside structure, the contractor would have to dig a trench or make borings along the wall. Trenching or borings are expensive and could result in wall damage. Since the walls will be removed, we don't the additional work and cost is justified.

The new sheet piles will not encroach into state waters. The owner will not be extending her property makai. She is actually giving up property by moving the shoreline over 5 feet mauka to the inner wall.

The collapsed outer wall and the rock fill between the two walls are not presently causing any environmental problems. The material is considered an encroachment by DLNR and will be removed.

A portable cofferdam is not useful for placing sheet piles. Cofferdams are used when it is desirable to work in a dry space. The water contained by the cofferdam must be pumped out to dewater the work area. Dewatering requires a permit from the Department of Health, and the effluent may not be returned to the ocean. The effluent must be placed in a holding pond, and there is absolutely no space for a holding pond anywhere near this property. Sheet piles can be placed "in the wet," so no dewatering is needed. One of the reasons the sheet pile alternative was selected was to avoid dewatering and its associated environmental problems and cost.

Thank you again for your review and suggestions. Please contact me or Joanne Hiramatsu at 531-3017 if you need additional information.

Sincerely,



Warren E. Bucher, Ph.D., P.E.
Senior Engineer

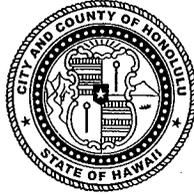
Attach

cc: City and County of Honolulu DPP

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluluapp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR



DAVID K. TANOUE
DIRECTOR
ROBERT M. SUMITOMO
DEPUTY DIRECTOR

2009/ED-16(ST)

March 11, 2010

Mr. Warren Bucher, PhD
Oceanit
828 Fort Street Mall, Suite 600
Honolulu, Hawaii 96813

Dear Mr. Bucher:

Subject: Draft Environmental Assessment (EA)
Shoreline Setback Variance
Ursula Heinz
47-119 Kamehameha Highway - Kahaluu
Tax Map Key 4-7-19: 76 and 80

We apologize for our late response. The following are our comments on the Draft Environmental Assessment (EA):

Section 1.1 Environmental Assessment Requirements

Since no Federally owned or controlled lands or funds are involved, this EA is not a National Environmental Protection Act document. Therefore, this section should be revised to indicate that the EA was necessary because the proposal requires a shoreline setback variance (SV), pursuant to Chapter 23, Revised Ordinances of Honolulu (ROH), and that it was prepared pursuant to the State Environmental Impact Statement regulations, Section 343-5(3), Hawaii Revised Statutes (HRS), and Section 11-200-6(b)(1)(C), Hawaii Administrative Rules, respectively.

Section 1.2 Technical Characteristics

A brief history of all structures within the shoreline setback area, including side walls and their original construction dates, should be provided. The dimensions of the existing structures (i.e., height, width, composition, and volume of rubble) as well as section drawings of these structures should be provided.

The regulatory status of these structures (i.e., nonconforming, unauthorized, etc.) should be disclosed. Our records indicate that a two-tiered seawall did exist at this site before there were restrictions on shoreline construction, which means that the original structures are considered nonconforming. The outstanding Notice of Violation (NOV) and a Notice of Order (NOO) from the Department of Planning and Permitting (DPP) for the unauthorized repair to these structures

Mr. Warren Bucher
March 11, 2010
Page 2

should be mentioned. Copies of the NOV and NOO should be attached as an appendix to the Final EA.

We also find that greater technical detail explaining the "problem" which the proposal seeks to address is necessary. Actual evidence documenting the shoreline stability problem (i.e., photos of foundation undermining, etc.) should be provided. We note that the Seawall Evaluation in Appendix B (2007) only states that "The CRM wall may be damaged." Please note that the applicant's placement of boulders in front of the Concrete Rubble Masonry (CRM) seawall is considered anecdotal evidence, and not engineering proof of a shoreline stability problem.

The Site Plan (Figure 10) should be revised to delineate the 40-foot shoreline setback line and show all improvements, including side walls. The EA should also provide a complete description of the site, which includes the existing dwelling and its distance from the shoreline. Please note that any improvements, which were not disclosed in the EA nor included in an SV approval, may not be retained unless they have previously been recognized by DPP as nonconforming.

Section 2.3 Shoreline Use and Zoning

This section should clarify whether the dredged channel in front of the site is actually utilized for recreational water craft use (i.e., kayaks, jet ski, canoes, etc.). In addition, this section should be revised to clarify that although the site is within the Special Management Area (SMA) established by Chapter 205A, HRS, the proposal is associated with the development of a single-family dwelling, which is "exempt" from SMA requirements (Section 25-1.3(2)(N), ROH).

Section 6 Permits, Variances, and Approvals

The Final EA should indicate that a Section 10, Department of the Army permit and a Section 401 Water Quality Certification from the State Department of Health will likely be required for the proposed project.

Additional sections should be added to the Final EA as follows:

Ko'olaupoko Sustainable Communities Plan (SCP) - This section should explain that Section 3.1.3.2 of the SCP discourages the use of shoreline armoring structures.

Shoreline Setback Ordinance, ROH Chapter 23

The section should describe how the proposal meets the three tests of "hardship" necessary to obtain a shoreline setback variance pursuant to Section 23-1.8, ROH. We strongly suggest that a thorough evaluation of the alternatives considered, but not selected, be provided. Explain how the proposed alternative best meets the objectives and criteria set forth by the shoreline setback regulations; and why other alternatives, which may be practicable, were deemed to have greater adverse impacts to the shoreline and coastal resources.

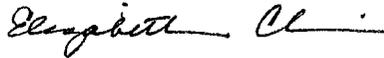
Mr. Warren Bucher
March 11, 2010
Page 3

Comment Letters

We have enclosed copies of the four comment letters submitted for the proposed project. In accordance with the procedural provisions of EIS regulations, all comment letters received during the 30-day comment period, which began with the initial publication of a notice of availability of the DEA in The Environmental Notice on December 8, 2009, require a response addressed directly to the commenter. The final EA must include all comment letters and responses to the letters, as well as appropriately revised text.

If you have any questions, please contact Steve Tagawa of our staff at 768-8024.

Very truly yours,



for David K. Tanoue, Director
Department of Planning and Permitting

DKT:nt

cc: DLNR-OCCL
OEQC

ED\DEAHeinz.com



August 9, 2010

Mr. David K. Tanoue, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Attn: Mr. Steve Tagawa

Subject: Response to March 11, 2010 Comments on Draft Environmental Assessment, Shoreline Setback Variance, Ursula Heinz, 47-119 Kamehameha Highway – Kahalu`u, TMK 4-7-019:076 and 080

Dear Mr. Tanoue:

Oceanit is responding to the attached comments on behalf of Ursula Heinz, MD, the property owner.

Section 1.1 Environmental Assessment Requirements

This section will be revised to show that the EA is being prepared because the project requires a shoreline setback variance (SV) pursuant to Chapter 23, Revised Ordinances of Honolulu (ROH) and is being prepared according to State Environmental Impact Statement regulations, Section 343-5(3), Hawaii Revised Statutes (HRS), and Section 11-200-6(b)(1)(C), Hawaii Administrative Rules.

Section 1.2 Technical Characteristics

The history of the existing walls along the property shoreline is not completely known. An earlier shoreline map shows the outer and inner seawalls in place on January 15, 1963, which does make them nonconforming. Dr. Heinz does not have copies of the original plans for the existing walls. Dr. Heinz hired a structural engineer to draw plans of the existing walls as they appeared in 2006. These plans will be included in the Final EA. The shape of the buried parts of the walls was assumed based on what is typical. CRM wall depths below grade are not known. Reinforced concrete wall dimensions based on measurements are shown. Some of the rock areas around the walls are labeled: "new rip rap slope protection." These rocks were added in January 2006 and are being addressed in continuing discussions with DLNR/OCCL regarding a new shoreline

certification. These rocks and the broken outer seawall will be removed as a condition of the shoreline certification.

The existing walls are nonconforming. The outstanding Notice of Violation (NOV) and Notice of Order (NOO) were not issued for unauthorized repair to the seawalls. They were issued for a retaining wall along the west side of the property. This retaining wall was partially demolished to bring in a small excavator for work on the seawall. The retaining wall was re-built without a building permit and without a shoreline setback variance, and 2006/NOV-02-033 was issued on February 6, 2006. 2007/NOO-145 was issued on June 18, 2007. Copies of the Notices will be included in the FEA.

The owner proposed to replace the existing seawall system for several reasons:

1. A section of the seawall system was a double wall. The outer wall was a seawall that was undermined by erosion along the adjacent boat channel and has mostly collapsed. The outer wall is damaged beyond the practical possibility of repair. Therefore, the design consultant initially recommended replacement. The certified shoreline formerly ran along the outer wall, but the Department of Land and Natural Resources determined that the ocean had passed through the location of the shoreline and that the shoreline would have to be moved inland to the inner wall, thereby making the outer collapsed wall and the rock fill encroachments into state waters, which would have to be removed before a certified shoreline could be approved and any repairs made.
2. Since the outer seawall must be removed, the inner CRM wall would have to work as a seawall if left in place. The CRM wall does not appear to the design consultants as properly designed or constructed to be a seawall. There is no available information on the foundation depth or type. The inner wall is a retaining wall for the dredged fill that was used to construct the property originally. The outer wall and the rocks placed between the two walls currently support the inner wall. When the encroaching material is removed, this support will be gone. To prevent inner wall collapse, the design consultant's recommendation is to replace the CRM wall with a properly designed and constructed sheet pile wall.
3. The seawall on the east side of the property is a CRM wall that ties into the inner CRM wall and extends to the property line. No information on the foundation depth and type has been found. Coral gravel has built up along part of the east wall. The design consultant recommends that this wall be replaced with sheet pile when the remaining walls are replaced.
4. The seawall on the west side of the property is made with concrete. It has a visible foundation (not buried) with scour gaps beneath the wall. The wall does not appear to extend far enough below the surface to prevent the scouring. The concrete has deteriorated over its life. The design consultant's recommendation is to replace the wall with a new sheet pile

wall rather than try to repair it. Repair would be expensive, would require excavation of the land inside the wall, and would likely require dewatering.

The site plan shown in Figure 10 of the DEA will be modified to show the setback line, the existing house, and other improvements.

Section 2.3 Shoreline Use and Zoning

The dredged channel in front of the Heinz property is used for boats. An aerial photograph shows boats at several properties along the channel including the neighbor to the east. The owner confirms that boats use the channel. The owner launches kayaks from her property into the channel. This information will be included in the Final EA.

The Final EA will also be edited to state that although the site is within the Special Management Area (SMA), the proposed work is associated with the development of a single-family dwelling and is therefore "exempt from SMA requirements (Section 25-1.3(2)(N), ROH).

Section 6 Permits, Variances, and Approvals

The Final EA will be revised to include the requirement for a Department of the Army Permit to remove the broken outer seawall and rocks placed in the ocean and to place the proposed sheet piles. A Section 401 Water Quality Certification may also be required from the State Department of Health for placing sheet piles.

Additional sections to be added to the Final EA:

A new section titled "Conformance with Plans and Policies" will be added. This section will discuss conformance with the "Ko`olaupoko Sustainable Communities Plan (SCP) on use of seawalls. We will also discuss the fact that part of the Heinz property was originally constructed with dredged fill from Kane`ohe Bay. Retaining walls were necessary (and are still necessary) to maintain the integrity of the lot.

A section will be added to the Final EA that describes how the proposed replacement of the old seawall meets the three tests of "hardship" necessary to obtain a shoreline setback variance pursuant to Section 23-1.8, ROH. The Final EA will also discuss the merits of each considered alternative relative to the setback regulations and why the selected alternative best meets the objectives of the regulations.

Responses to comments from other regulatory agencies will be prepared and sent directly to the commenter. Copies of comment letters and responses will be included in the Final EA.

Response to DEA Comments Heinz Seawall Repair
August 9, 2010
Page 4 of 4

Please contact me or Joanne Hiramatsu at 531-3017 if you need additional information.

Sincerely,



Warren E. Bucher, Ph.D., P.E.
Senior Engineer

Attach

Appendix D: Notice of Violation and Notice of Order



CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET * HONOLULU, HAWAII 96813
 Fax: (808) 523-4400

Notice of Violation

Violation No.: 2006/NOV-02-033 (BV)

Date: February 06, 2006

Owner(s)

Paula Ursula
 47-119 Kamehameha Hwy.
 Kaneohe, HI 96744

PH-239-8272

<u>Contractor(s)</u>	<u>Tenant/Violator</u>	<u>Architect/Plan Maker</u>
<u>Lessee</u>	<u>Agent</u>	<u>Engineer</u>

TRK: 4-7-019-076 47-119 KAM HWY

Specific Address of Violation: 47-119 KAMEHAMEHA HWY.

I have inspected the above-described premises and have found the following violations of City and County of Honolulu's laws and regulations governing same:

<u>Codes and/or Ordinance(s) and Section(s)</u>	<u>Violation(s)</u>
ROH 1990, as amended, Chapter 18 Section 18-3.1	THE CONCRETE ROCK MASONRY FENCE WALL WAS CONSTRUCTED WITHOUT FIRST OBTAINING THE REQUIRED BUILDING PERMIT. THE FENCE WALL IS APPROXIMATE 6'-0" HIGH. OBTAIN THE REQUIRED BUILDING PERMIT WITHIN THE TIME SPECIFIED HEREIN.
ROH 1990, as amended, Chapter 18 Section 18-6.2 (d)	A DOUBLE FEE PENALTY SHALL BE ASSESSED FOR THE WORK DONE WITHOUT FIRST OBTAINING A BUILDING PERMIT.
ROH 1990, as amended, Chapter 18 Section 18-7.5	STOP WORK IS HEREBY ORDERED. ANY VIOLATION OF THIS ORDER WILL RESULT IN THE IMMEDIATE REFERRAL FOR CIVIL FINES.

STOP WORK: You are hereby ordered to stop illegal work immediately.

You are hereby ordered to obtain permit(s) and/or correct violation by March 10, 2006.

Restore the area immediately and complete all work within 30 days from the date of this notice.

Please call the undersigned after the corrections have been made.

If work is not completed within 30 calendar days, the work will be done by the City and the cost thereof shall be charged to the owner.

You are reminded that if no action is taken within the specified time:

1. This matter will be referred to the Prosecuting Attorney and/or Corporation Counsel for appropriate action; and/or
2. A Notice of Order will be issued by the Department of Planning and Permitting imposing CIVIL FINES for the specified violations.

Special Instructions: OBTAIN THE REQUIRED PERMITS FOR THE ROCK MASONRY WALL THAT WAS CONSTRUCTED ON THE LEFT BACKSIDE PROPERTY. IF THE BUILDING PERMIT IS UNOBTAINABLE, THEN THE MASONRY WALL SHALL BE REMOVED AND THE AREA RESTORED TO ITS ORIGINAL CONDITION WITHIN THE TIME SPECIFIED HEREIN.

Inspector:

Thomas Ah Sam
 Thomas Ah Sam

Phone: 527-6084

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 527-8743
INTERNET: www.honolulu.gov • DEPT. WEB SITE: www.honolulu.gov/dpp



MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANQUE
DEPUTY DIRECTOR

CERTIFIED MAIL
7006 0810 0003 4635 5200
7006 0810 0003 4635 5217
RETURN RECEIPT REQUESTED

NOTICE OF ORDER

NO.: 2007/NOO-145

DATE: June 18, 2007

TO: Owner/Contractor/Lessee/Tenant: _____
Owner: Ursula Heinz Tr. Lien Holder: Countrywide Home Loans, Inc.
47-119 Kamehameha Highway 4500 Park Granada
Kaneohe, Hawaii 96744 Calabasas, California 91302-1613

Address of Violation: 47-119 Kamehameha Highway – Kahaluu

Tax Map Key: 4-7-019: 076

Description: Construction of a CRM retaining wall at rear/left of property without a building permit

The Department of Planning and Permitting (DPP) inspected the above-described structures and/or premises and found a violation of one or more ordinances of the City and County of Honolulu. As a result, Notice of Violation (NOV) 2006/NOV-02-033 was issued on February 6, 2006 (copy attached). As of this date, the violation described on the NOV has not been corrected. Pursuant to the authority granted by the Revised Ordinances of Honolulu (ROH), you are hereby ordered to:

1. Pay a fine of \$50 by July 19, 2007.
2. Correct the violation by July 18, 2007. If corrective action has not been completed by this date, a daily fine of \$50 will be assessed until the correction is completed. You are responsible for contacting the inspector, Thomas Ah Sam at 768-8132, to verify the corrective action.

Checks (with the Notice of Order number) are payable to the City and County of Honolulu, and should be mailed or delivered to the Department of Planning and Permitting, 650 South King Street, 8th Floor, Honolulu, Hawaii 96813.

Appendix E: U.S. Fish and Wildlife Service Recommended Standard Best Management Practices

U.S. Fish and Wildlife Service

Recommended Standard Best Management Practices

The Fish and Wildlife Service recommends that the following measures be incorporated into projects to minimize the degradation of water quality and adverse impacts to fish and wildlife resources.

1. Turbidity and siltation from project-related work shall 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.
2. Dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods and sea turtle nesting and hatching periods.
3. Dredging and filling activities in the marine/aquatic environment shall be designed to avoid or minimize the loss of beach and special aquatic site (coral reefs, wetlands, streams etc.) habitat, and any ecological functions unavoidably lost as a result of the project shall be replaced.
4. All project-related materials and equipment (dredges, barges, backhoes etc) to be placed in the water shall be cleaned of pollutants prior to use.
5. No project-related materials (fill, revetment rock, pipe etc.) shall be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands etc.);
6. All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.
7. No contamination (trash or debris disposal, non-native species introductions attraction of non-native pests etc.) of adjacent marine/aquatic environments (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests etc.) shall result from project-related activities. This shall be accomplished by implementing a litter-control plan and developing a Hazard Analysis and Critical Control Point Plan (HACCP – see <http://www.haccp-nrm.org/Wizard/default.asp>) to prevent attraction and introduction of non-native species.
8. Fueling of project-related vehicles and equipment shall take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.
9. Any under-layer fills used in the project shall be protected from erosion with stones (or core-loc units) as soon after placement as practicable.
10. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).