DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
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DEPUTY DIRECTOR

'09 APR -6 P2:07

2006/ED-14(LK)

March 30, 2009

The Honorable Katherine Puana Kealoha, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Ms. Kealoha:

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

Landowner/Applicant:	Bernadine M. Barry
Agent:	Sea Engineering, Inc.
Location:	91-447 Pupu Street – Ewa Beach
Tax Map Key:	9-1-30: 8
Request:	Shoreline Setback Variance
Proposal:	To allow (retain) a CRM wall and concrete splash deck apron within the shoreline setback area.
Determination:	A Finding of No Significant Impact is Issued

Attached and incorporated by reference is the Final EA prepared by the applicant for the project. Based on the significance criteria outlined in Title 11, Chapter 200, Hawaii Administrative Rules, we have determined that preparation of an Environmental Impact Statement is not required.

We have enclosed a completed OEQC Bulletin Publication Form, one (1) PDF and two (2) hard copies of the Final EA. If you have any questions, please contact Lynne Kauer of our staff at 768-8016.

Very truly yours,

David K. Tanoue, Director
Department of Planning and Permitting

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Final Environmental Assessment and Coastal Engineering Evaluation for a Shoreline Setback Variance at 91-447 Pupu Street, Ewa Beach, Hawaii 96706

TMK 9-1-030:008

May, 2008

Prepared for:
Bernadine Barry
P.O. Box 2455
Ewa Beach, HI 96706

Prepared by:
Sea Engineering, Inc.
Makai Research Pier
Waimanalo, Hawaii 96795

SEI Job No. 6-29

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1. GENERAL INFORMATION

(Proposed) Action	After-the-fact approval for a shoreline setback variance for a low-elevation, free-standing CRM wall and concrete deck splash apron at 91-447 Pupu Street, Ewa Beach.
Property	TMK 9-1-030:008; 91-447 Pupu Street, Ewa Beach, HI 96706
Owner/Applicant	Ms. Bernadine Barry
Planning & Zoning	State Land Use: Urban District Zoning: R5 Residential Development Plan Land Use: Low and Medium Density Residential
Special Management Area, Shoreline Setback	Located within the SMA and the shoreline area, subject to 40-foot shoreline setback
Permitting Agency	City and County of Honolulu, Department of Planning and Permitting.
Consulted Agencies	City and County of Honolulu, Department of Planning and Permitting State Department of Land and Natural Resources
Required Permits:	Shoreline Setback Variance, Chapter 23, Revised Ordinances of Honolulu (ROH) City and County of Honolulu Building Permit
Chapter 343 Action	343-5(3): Construction within the shoreline area as defined by Chapter 205A-41
Anticipated Determination	Finding of No Significant Impact (FONSI)

2. LOCATION AND DESCRIPTION OF THE PROPOSED ACTION

2.1 General Description

The project site is located at 91-447 Pupu Street in Ewa Beach on the Island of Oahu (TMK 9-1-030:008). A site location map is shown in Figure 2-1, and the TMK is shown in Figure 2-2. The site is shorefront property, with an approximate 60-foot wide shoreline frontage. The property is part of the western-most shorefront development in Ewa Beach located east of, and adjacent to, Oneula Beach Park. An aerial photograph of the project vicinity is shown in Figure 2-3. The properties in this area are built on an elevated coralline limestone platform that is characteristic of the shoreline (Figure 2-4). This platform has a nominal elevation of approximately 6 to 8 ft above Mean Sea Level (MSL). During high wave and high tide conditions, the platform elevation is not sufficient to protect the properties from flooding due to wave inundation. As a result, walls protect all of the shorefront homes in this development and both of the nearby public access easements. The walls are generally free-standing structures built as barriers to wave inundation, but not specifically to prevent shoreline erosion, as the rock shore is stable under wave attack. Most of the walls in the area are of Cemented Rubble Masonry (CRM) construction similar to the subject wall.

A new CRM wall and concrete deck splash apron were constructed on the property in April, 2005. The wall height is about 1.3 feet above the slab on the mauka side, and varies from about 3.8 feet to 1.8 feet above the uneven coralline rock surface on the makai side. This work was undertaken using casual labor that had been working on similar projects in the neighborhood, and was done without the required building permit, Shoreline Setback Variance (SSV), and shoreline certification.

A notice of violation of Chapter 23-1.5(b) of the Revised Ordinances of Honolulu (ROH) was issued on December 5, 2005 for construction of the CRM wall and concrete deck without a Shoreline Setback Variance.

This Final Environmental Assessment (FEA) is being submitted as part of an after-the-fact variance and permit application process in order to correct the above violation. A SSV from the City and County of Honolulu, Department of Planning and Permitting is being requested.

2.2 Shoreline Certification

A Shoreline Certification Survey was undertaken on April 3, 2006 by Walter P. Thompson, Inc., Registered Surveyors. The survey drawing is shown in Figure 2-5. The application and correspondence is in Appendix B. The surveyed shoreline follows the makai edge of the new CRM wall, which is contiguous with walls on adjacent properties. Prior to construction of the wall, *naupaka* vegetation existed on approximately the same alignment. Following formal procedure, the shoreline survey and certified shoreline application were submitted to the State of Hawaii, Department of Land and Natural Resources for approval. However, as expected, the application was rejected because the CRM wall was built without a SSV or building permit and is therefore currently in violation of Chapter 23-1.5(b) of the Revised Ordinances of Honolulu

(ROH). Consideration of the Shoreline Setback Variance Application must therefore be made with the existing uncertified Shoreline Survey at the discretion of the Director.

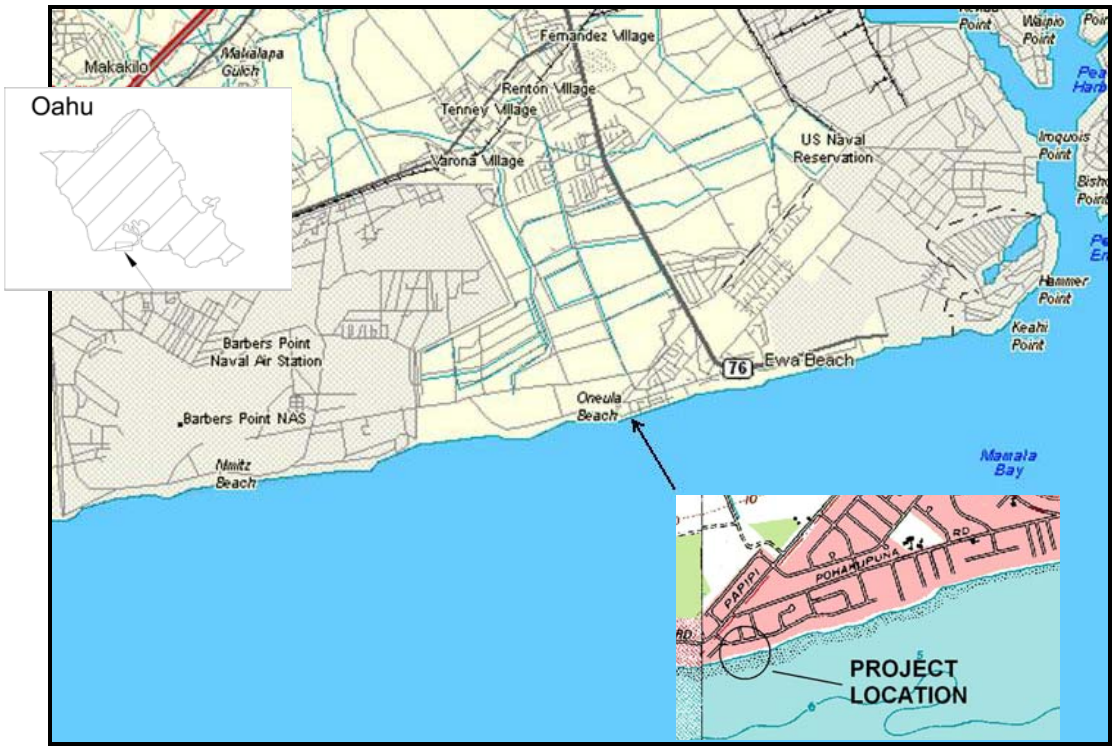


Figure 2-1 Project Site Location

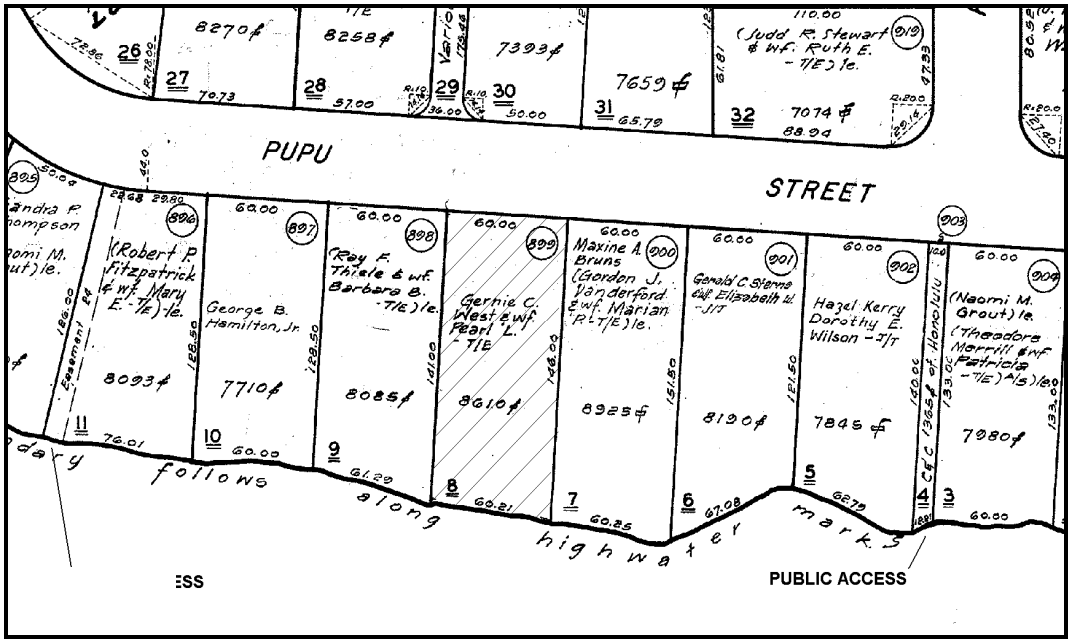


Figure 2-2 Tax Map showing TMK 9-1-30:08 (shaded), and public access location

Figure 2-3 Aerial photograph of project site with offshore bathymetry (survey lines are 200 ft)
(photograph courtesy of UH Coastal Geology Group website)

Figure 2-4 Elevated coralline limestone platform at project site

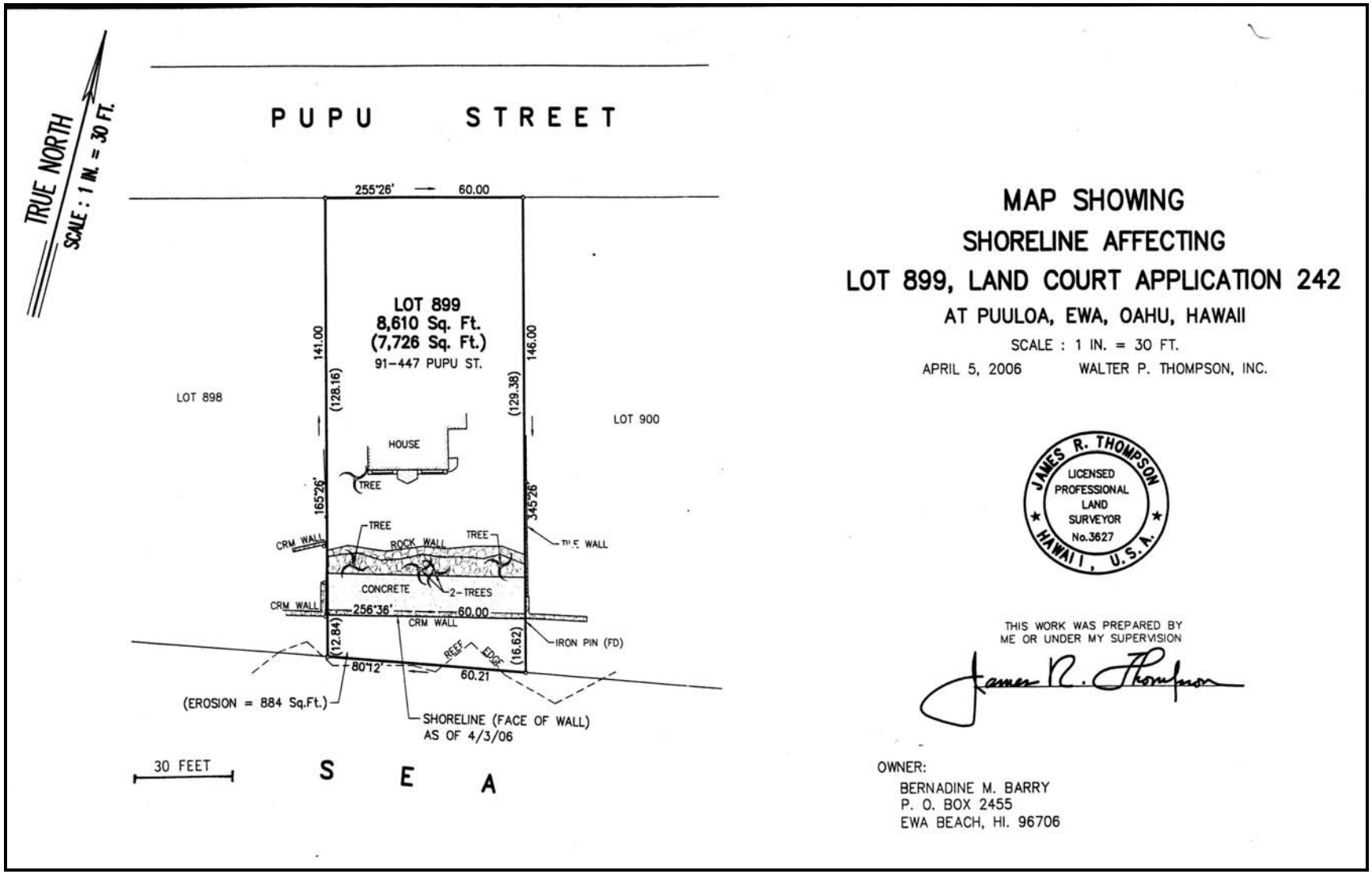


Figure 2-5 Certified shoreline survey

2.3 Technical Characteristics

The CRM wall and concrete deck were inspected by the Hawaii Engineering Group, Inc., Civil and Structural Engineers, on May 8, 2006. Technical engineering drawings are shown in Figure 2-6 and full size plans are attached to this document. The project layout plan is shown in Figure 2-5, the certified shoreline survey.

The CRM wall is a free standing, low elevation structure about 1.3 ft in height at the back (mauka side) and varying in height from 3.8 ft to 1.8 ft at the front (makai side). The base of the wall follows the uneven surface of the elevated coralline limestone platform (Figure 2-4). The crest of the wall is 1 ft 4 inches in width. The wall extends across the entire width of the property (approximately 60 ft) and meets existing walls on both adjacent properties. The new wall is placed even with makai side of the existing wall on the adjacent property to the east (TMK 9-1-030:009) and is placed approximately 0.5 ft landward (mauka) of the existing wall on the adjacent property to the west (TMK 9-1-030:007; see Figure 2-10). Photographs of the wall are shown in Figures 2-7, 2-8, 2-9, and 2-10. The wall is constructed from an assortment of rock types, but is predominately blue lava rock.

The concrete slab extends 11 ft behind the wall and covers the entire 60-ft width of the lot (Figures 2-5 and 2-6). The slab is approximately 4 in thick. As of this writing (approximately one year after construction), there are no visible cracks in the slab.

During extreme high wave conditions, the shoreline properties in the area of the project are subject inundation by wave overtopping and advance of the wave bore (i.e. the breaking part of the wave, or "whitewater"). Low walls similar to the project wall front properties along the entire reach of the housing subdivision. The walls are effective in inhibiting destructive wave bore advance, but do not completely prevent wave overtopping and wetting of the property. Wave overtopping is further discussed in Section 3.2.3.

2.4 Alternatives to the Proposed Action

2.4.1 No Action

A no action alternative would allow wave bore advance across the property during high wave conditions, and consequent inundation. During extreme conditions such as a hurricane, waves and flooding could enter the ground floor of the dwelling and cause destruction of property. No action would allow exposure of soils on the property to wave action and consequent erosion. Short-term environmental effects from soils erosion would include increased turbidity immediately offshore.

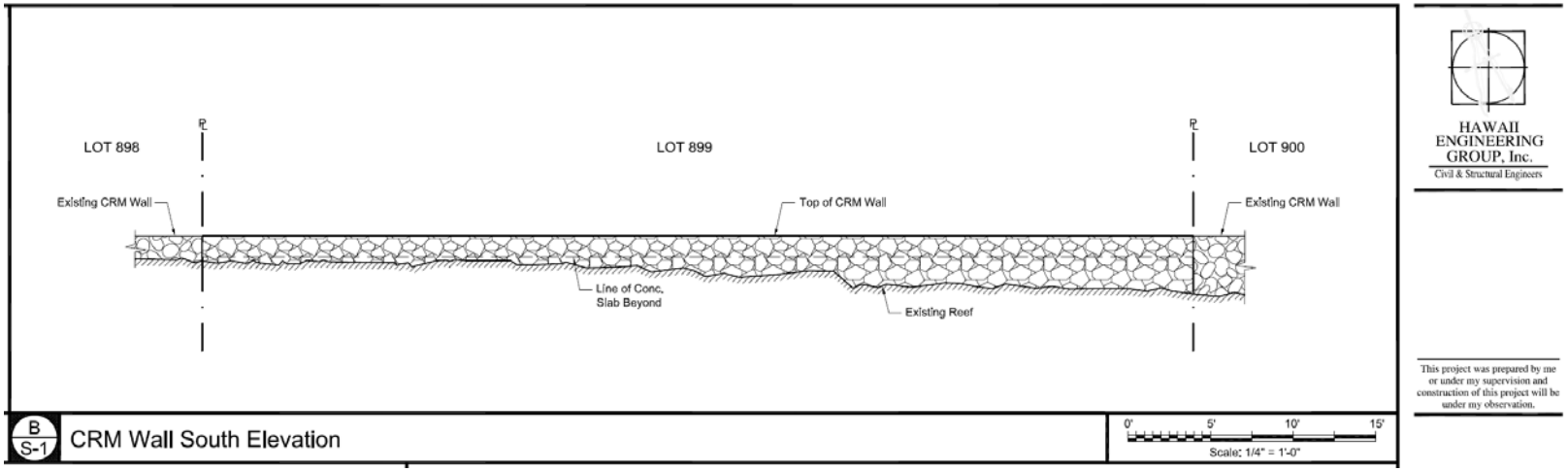
The unprotected shoreline also posed a safety hazard to the property owner. The property owner fell and sustained minor injuries on numerous occasions while trying to avoid waves on the irregular limestone terrain. This occurred when she was trying to trim back the *naupaka* vegetation that previously existed along the wall alignment.

2.4.2 Alternative Structures

Structural alternatives to a low elevation wall might include a rock revetment, a barrier built from large geotextile sand bags, or a single sand or grout filled geotextile tube. All of these solutions would require a larger construction area ("footprint") and would have negative aesthetic impacts on the local environment.

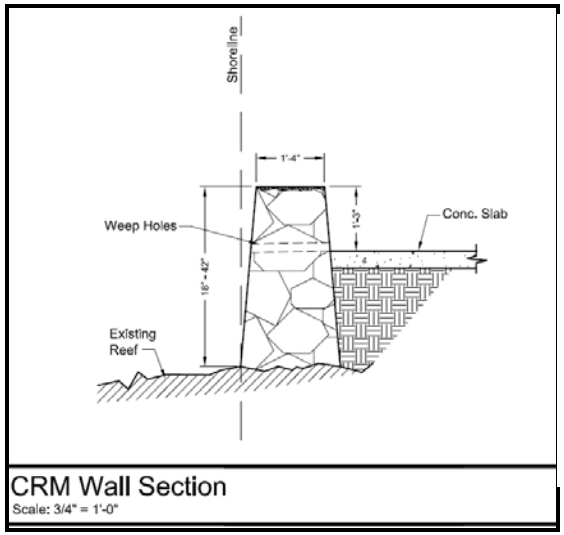
Rock revetments are sloped rubble mounds constructed from un-cemented rock, and are appropriate structures for many shore protection conditions, such as where it is necessary to build in the water, where the foundation is soft or unknown, or where it is important to minimize wave reflection. However, to match the strength of a grouted CRM wall, a revetment would need to be built of larger stone, and be a generally more massive structure. None of the advantages of a revetment structure are relevant for this project, as the structure is built on a rock platform above the waterline. Wave reflection is not an issue as there is no beach at the site, and the escarpment formed by the coralline limestone platform reflects most of the incident waves regardless of the presence of a wall. Any minor reflections off the wall during high wave and high water conditions are dissipated on the irregular rock bench and escarpment.

Geotextile sand bags have been used in recent years in Hawaii as emergency measures to protect eroding sandy shorelines. The only advantage to using sand bags is that they can be removed without undue expense by cutting them open and releasing the sand back to the beach system. However, they are not very attractive and can become slippery and a public safety hazard when wet and covered with algae growth. As the subject property is not a sand shoreline, there is no compelling reason to use sand bags instead of a properly constructed wall. Geotextile tubes have not been used to great extent in Hawaii. However, similar counter-arguments hold for them. They are not attractive, and have no advantages over a properly constructed CRM wall.



HAWAII ENGINEERING GROUP, Inc.
Civil & Structural Engineers

This project was prepared by me or under my supervision and construction of this project will be under my observation.



CRM RETAINING WALL

1. All materials and workmanship shall conform to the drawings.
2. The structural drawings and specifications represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not limited to, bracing shoring for loads due to construction equipment, wind seismic, etc. Observation visits, to the site, by the Structural Engineer shall not include inspection of above items.
3. The Contractor shall be solely responsible for all excavation procedures including lagging, shoring and protection of adjacent property sturctures, streets and utilities.
4. Design Criteria
   A. Code ..... UBC' 1997
   B. Bearing Capacity ..... 2000 psf
   C. Lateral Pressure ..... 30 pcf
      Passive Pressure ..... 250 pcf
      Friction Factor 0.3
5. All coral rock shall be clean, free of seams and blemishes or other imperfections. Rocks shall not have sand seams, be soft or crumble under load.
6. Face stones shall have a volume of not less than 0.75 Cft. Heart stone shall have a volume less than 0.5 Cft.
7. Mortar shall conform to ASTM C270 and shall be freshly prepared and uniformly mixed to the following proportions (1 part Masonry M Cement, 1 part Portland Cement, 2| parts of fine aggregate) to obtain 1800 psi, 28 day compressive strength.
8. Mortar shall be of free flowing consistency and shall fill all voids inbetween stones.
9. Weep holes shall be placed at 6'-0" on centers horizontal and vertical. Add gravel (1.5 Cft) and geotextile fabric over and around the weeper pipe.

Figure 2-6 Plans and specifications for the new CRM wall

Figure 2-7 View of CRM wall looking west

Figure 2-8 View of CRM wall looking east

Figure 2-9 View of CRM wall and concrete slab splash apron

Figure 2-10 Location of wall relative to adjacent property (west)

3. AFFECTED ENVIRONMENT AND COASTAL ENGINEERING REPORT

3.1 Affected Shoreline

3.1.1 Shoreline Description

The project is located on an approximate 3,500 ft reach of rocky shoreline that separates the sand beaches of Hau Bush Beach (and Oneula Beach Park) and the start of the sand beach at Ewa Beach near Fort Weaver Road. There is no sand beach in the vicinity of the project.

The entire 3,500-ft reach is characterized by an elevated platform or bench composed of rugged coralline limestone (Figure 2-4). The rock has an extremely rough surface texture, with sharp micro-pinnacles created by solution pitting. The shoreline is frequented by fishermen who surfcast from the rocks.

The rock bench has an irregular plan shape and typically ends abruptly at an escarpment 5 to 7 feet in height. The water depth at the base of the rock bench is on the order of 1 to 2 feet below mean sea level.

Figure 3-1 is an aerial photograph that shows shoreline features over a distance of 3,000 feet east of the project site. The elevated limestone platform is continuous along this entire reach. Most of the properties along this reach are protected by some type of wall structure to prevent flooding of the property, and these stretches are delineated by a heavy black line on the figure.

Figure 3-2 is an aerial photograph that shows shoreline features over a distance of 3,000 ft west of the project site. The elevated limestone platform narrows and is replaced by a basalt cobble and boulder berm approximately 550 ft west of the project, near the cul-de-sac shoreline access (Pupu Place). However, it is likely that the limestone underlies the cobbles and boulders, as it reappears on the shoreline after approximately 500 ft. The basalt cobble and boulder berm is likely a constructed shore protection feature.

A sand beach overlies the limestone approximately 1,500 ft west of the project site and continues into Oneula Beach Park, approximately 3,000 ft from the project.

Regional shoreline conditions are further illustrated in Sections 3.1.2 and 3.1.3.

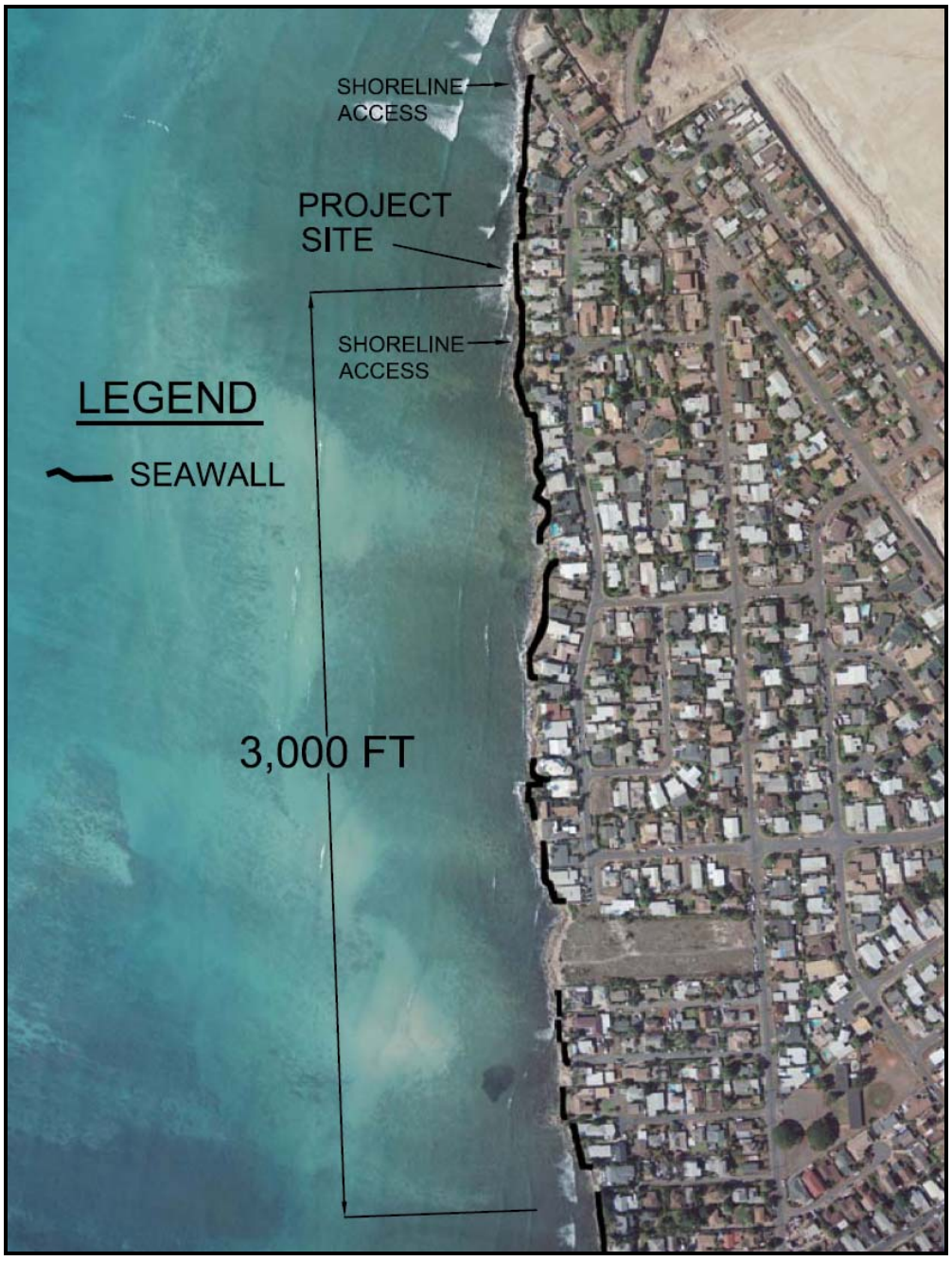


Figure 3-1 Shoreline east of project site

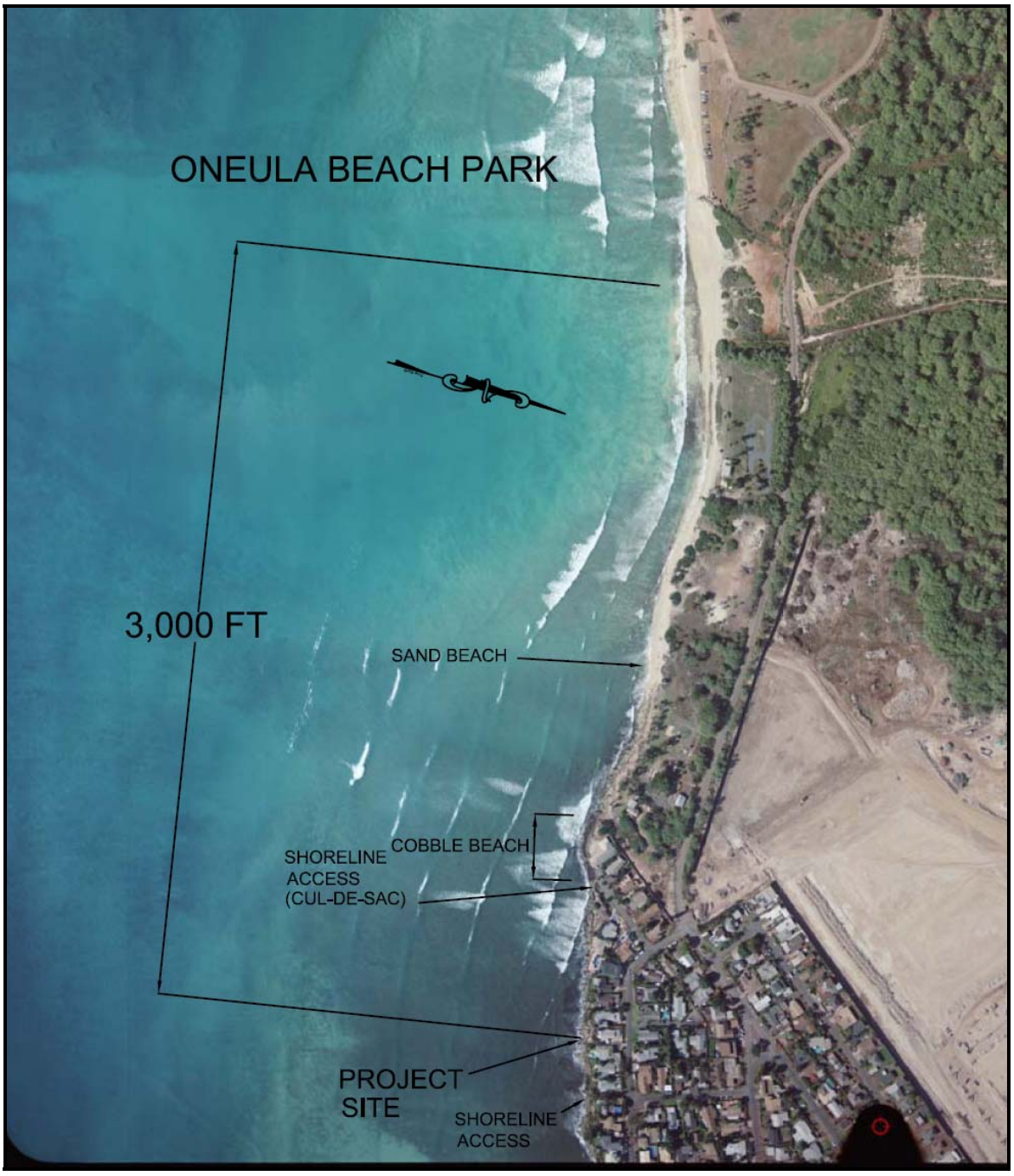


Figure 3-2 Shoreline west of the project site

3.1.2 Adjacent Properties

91-435 Pupu Street

The adjacent property to the west (91-435 Pupu Street) contains a seawall similar in size and shape to the applicant's (Figure 3-3). The seawall changes into a landscape pool feature at the west side of the property (Figures 3-4 and 3-5).

Figure 3-3 Photograph of adjacent property (1)

Figure 3-4 Photograph of adjacent property (2)

Figure 3-5 Photograph of adjacent property (3)

Photographs of the shoreline at adjacent property, 91-435 Pupu Street, showing seawall and landscaping pool

The property east of the project property has a legal non-conforming seawall. At the time the applicant's seawall was constructed, this property used the same contractor to repair and rebuild the non-conforming wall. The construction was done without a permit and the owner was given a notice of violation by the City and County of Honolulu DPP. Because the property owner had the right to repair the wall in kind up to 50% of its value, Sea Engineering wrote letters on behalf of the owner offering justification for the repairs. However, the DPP considered the repairs to have unjustifiably altered the wall. The property owner elected to demolish the repair work rather than go through the extensive permit application and environmental review process as reflected in the current document.

Figure 3-6 Legal non-conforming seawall at 41-453 Pupu Street

3.1.3 Nearby properties

All nearby properties are protected by seawalls for protection from flooding due to wave overtopping during extreme events. A search for certified shoreline records recovered five properties on the applicant's tax map that have had certified shorelines recorded along the seawall. Figure 3-7 shows the five properties on the tax map with the date of shoreline certification. Figures 3-8 through 3-12 are photographs of these shorelines. The photographs also typify the regional shoreline conditions.

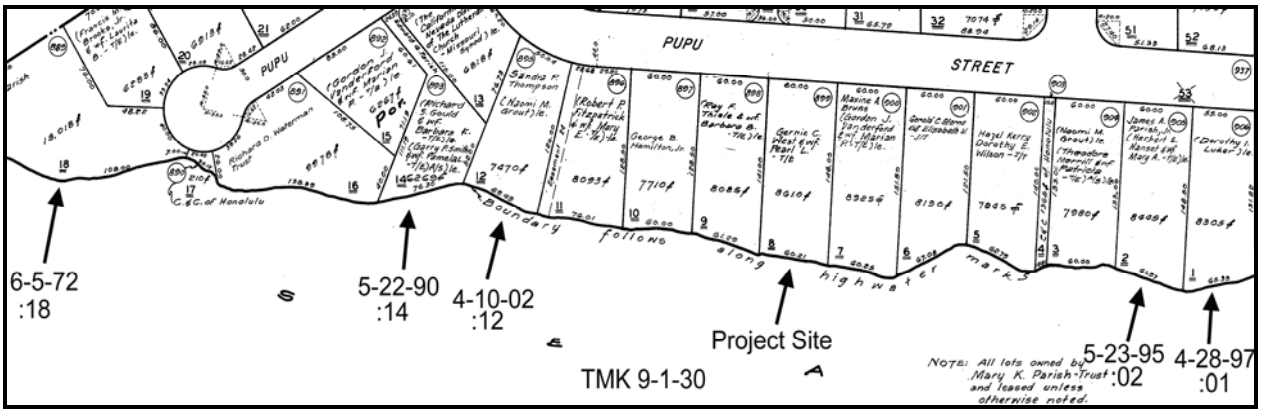


Figure 3-7 Certified shorelines near the project site

Figure 3-8 Certified shoreline (follows wall), TMK 9-1-30:01

Figure 3-9 Certified shoreline (follows wall), TMK 9-1-30:02

Figure 3-10 Certified shoreline (follows wall), TMK 9-1-30:12

Figure 3-11 Certified shoreline (follows wall), TMK 9-1-30:14

Figure 3-12 Certified shoreline (follows top of loose rock), TMK 9-1-30:18

3.1.4 Beach Profiles

Three beach profiles were taken at the project site at each end and the center of the property. Profiles were measured using a surveyor's tape to a distance of 200 ft offshore, and water depths were measured using a lead line at 25-ft intervals. Contours generated from depth measurements are shown on the aerial photograph in Figure 2-3. The three profiles are virtually identical; the center profile is typical, and is shown in Figure 3-13.

A rocky irregular bottom composed of coralline limestone with limu growth typifies the offshore bottom conditions. No sand pockets or sand channels were observed in the vicinity.

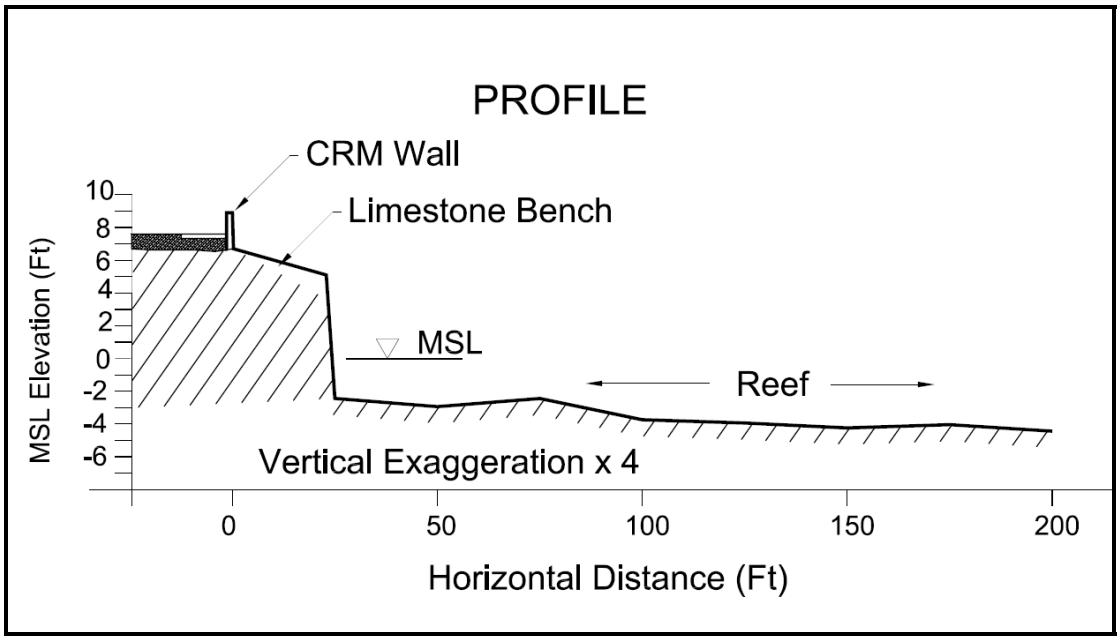


Figure 3-13 Typical profile of the project site

3.1.5 Shoreline History

The shoreline is composed of hard coralline limestone and is therefore considered non-erodible on a human time scale.

The houses on the project property and the two adjacent properties were built in 1956. Both adjacent properties have walls similar in size and structure to the project wall.

3.1.6 Flora and Fauna

The following description of the biology of the fringing reef in the project area is from *Oahu Coral Reef Inventory* (AECOS, Inc., 1979):

"Coral cover is only around 1% on the bottom at depths of 20 to 25 feet (6 to 8 m) off Oneula Beach. Although corals are more abundant westward toward Keku Point, cover does not exceed 5% of the bottom. *Pocillopora meandrina* and *Porites lobata* are the most common species (OCRI-73T1;376). At depths between 30 and 60 feet (9 to 18 m), coral cover increases to 8 or 10%. *Porites lobata* and *p. compressa* are most common (376).

The sea urchin, *Tripneustes gratilla*, is very abundant west of Oneula Beach (OCRI-73T1). *Echinometra mathaei* is common nearshore; *Echinothrix calamaris* is common below –30 feet (376). Algae are abundant, covering one-third of the bottom in many places. *Asparagopsis*, *Plocamium*, *Ulva*, *Cramium*, *Griffithsia*, and *Gracilaria* are common genera on the submerged reef flat. Where sand abrasion is high, an algal turf covers hard surfaces (386:OCRI-73T1). The pen-shell, *Pinna semicostata*, is abundant on the sand bottom below –60 feet (376).

A total of 73 species of fishes are recorded from off Oneula Beach. Fishes listed as most common off this area are *Acanthurus trostegus*, *Rhinecanthus rectangulus*, *Melichthys niger*, *Parupeneus pleurostigma*, *Thalassoma duperreyi*, and *Sufflamen frenatus* (384; 385)."

3.1.7 Coastal Use

The rock bench in front of the project property is frequently used by fishermen, who surf cast off the rocks.

The offshore reefs near the project site contain popular surfing sites. Site locations vary with swell size and direction, but the most frequented area is west of the project site at Oneula Beach Park. The coastline faces south, and is directly exposed to summertime south swell. However, wintertime west and northwest swells wrap around Barbers Point and also bring surfing waves to this part of Oahu. Access to the water in front of the property is poor due to the rugged shoreline and rock escarpment. Access along much of the shoreline in the region is similarly difficult .

A coastal access easement exists approximately 200 ft east of the subject property (see Figure 2-2). Access is also provided approximately 540 ft west of the subject property at the cul-de-sac termination of Pupu Place public street (Figure 3-14). However, access is difficult and unsafe from this direction due to the treacherous rocky shoreline conditions.

Figure 3-14 Shoreline access west of the project site (Pupu Place cul-de-sac)

3.1.8 Ewa Development Plan Land Use

The Ewa Development Plan (City and County of Honolulu Department of Planning and Permitting, 1997) includes provisions for a Shoreline Park extending form Pearl Harbor to Ko Olina. Shoreline Park plans are indistinct, but appear to be in the vicinity of the subject property. The project is entirely contained within parcel property boundaries, will not restrict coastal access, and will not affect shoreline view planes.

3.2 Oceanographic Environment

3.2.1 General Description

Ewa Beach is located on the west shore of the island of Oahu. The coastal area is primarily a residential area. The region is a relatively flat coastal plain, elevated approximately 6 to 8 feet above mean sea level (MSL) at the shoreline. The project is located on an approximate 3,500 ft reach of rocky shoreline that separates the sand beaches of Hau Bush Beach and Oneula Beach Park, and the start of the sand beach at Ewa Beach near Fort Weaver Road. There is no sand beach in the vicinity of the project.

3.2.2 Oceanographic Conditions

Wind

The general wind climate in Hawaii is characterized by two distinct seasons, primarily defined by the annual variation in persistence of the northeast tradewinds. During the summer months of April through September, the tradewinds predominate, blowing from an easterly to northeasterly direction about 70% of the time with an average speed of 12 to15 knots. On occasion, the occurrence of strong tradewinds can result in accelerated downslope wind speeds on the leeward (south) side of the Koolau's and through valleys such as Moanalua and Halawa which can cause strong, gusty winds at the project site.

During the winter months of November through March, the tradewinds weaken in persistence and the occurrence of southerly or westerly winds increase as a result of localized weather systems moving from west to east past the Hawaiian islands. Southerly and westerly, or Kona, winds occur typically during the winter months, generated by low pressure or cold fronts that move toward Hawaii from the west. Periods of Kona winds are generally of short duration (1 to 3 days) with relatively low (10 knot) wind speeds. There are, however, occasional severe Kona storms. A Kona storm in January 1980 had sustained wind speeds of 30 knots or greater for a period of 4 to 5 days, and resulted in considerable wind and wave damage to south and west facing shorelines of all the islands.

In any given year tropical storms and hurricanes can be expected to occur in the central north pacific between 140^{o} and 180^{o} west longitude and north of the equator. The Hawaiian Islands lay in the center of this region. Although hurricanes occur infrequently in the immediate vicinity of Hawaii, they do occasionally pass near the islands, and in recent times three hurricanes actually struck the island of Kauai. Hurricane Dot passed over Kauai in 1959, Hurricane Iwa passed within 30 miles of Kauai in 1982, and in 1992 Hurricane Iniki passed directly over Kauai with sustained winds exceeding 100 mph. Both Hurricanes Iwa and Iniki passed to the west of Oahu, and sustained wind speeds on Oahu were relatively low as measured at the Honolulu International Airport, peaking at about 40 knots. However, the report *Hurricanes in Hawaii* (Haraguchi, 1984) prepared for the U.S. Army Corps of Engineers following Hurricane Iwa, suggests that hurricanes can potentially approach any of the islands from the southeast to southwest. Thus, although the likelihood of occurrence is very low, the Ewa Beach area would be vulnerable to hurricanes approaching from these directions.

Waves

The general Hawaiian wave climate can be described by four primary wave types: 1) tradewind waves generated by the prevailing northeast winds; 2) North Pacific swell produced by mid-latitude low pressure systems; 3) southern swell generated by mid-latitude storms of the southern hemisphere; 4) Kona storm waves generated by local low pressure storm systems. In addition, the islands are affected by waves generated by nearby tropical storms and hurricanes.

Tradewind waves occur throughout the year, but the other wave types have seasonal distributions. North Pacific swell and Kona storm waves typically occur from October through

March during the northern hemisphere winter. Conversely, southern swell typically occurs from April through September during the southern hemisphere winter. Hurricanes and tropical storms are also summer and fall phenomena. The project coastline faces south, and is directly exposed to southern swell and Kona storm waves. The site is mostly sheltered from tradewind waves that wrap around the island from the east. Large winter swells from the west and northwest similarly wrap around the island at Barbers Point and can affect the project site.

Tradewind waves result from the strong and steady tradewinds blowing from the northeast quadrant over long fetches of open ocean. Typical deepwater tradewind waves have periods of 5 to 10 seconds and heights of 3 to 10 feet.

Southern swell is generated by storms in the southern hemisphere and is most prevalent during the summer months. These waves are typically long and low, with periods of 12 to 20 seconds and deepwater wave heights of 2 to 6 feet. Southern swell is fairly common, occurring nearly 25 percent of the time during a typical year. They approach the Ewa Beach area directly, and represent the greatest source of wave energy reaching the project site.

Kona storm waves occur at random intervals during the winter months, and approach from the sector south through west. The site can therefore be directly exposed to this wave type. Some winter seasons have several Kona storms; others have none. Wave heights are dependent upon the storm intensity, but deepwater heights can exceed 15 feet.

Storms in the North Pacific and mid-latitude low-pressure systems produce large waves which approach Oahu year round, but are most frequent during the winter months of October through March. Some of the largest waves reaching the island are of this type. Typical deepwater heights are 5 to 15 feet with periods of 12 to 20 seconds. The project site is well sheltered from north swell approach, and receives only a small percentage of the energy from waves wrapping around Barbers Point at the southwest corner of the island.

The infrequent offshore passage of hurricanes can generate large waves that affect the west coast of Hawaii. Many recorded tropical storms and hurricanes have approached the Hawaiian islands during the past 35 years. Most of these storms passed well to the south of the islands, but there have been notable exceptions. Hurricane Nina (1957) passed within 200 miles of the islands, Dot (1959) passed over Kauai, Iwa (1982) passed within 30 miles of Kauai, and Iniki (1992) passed directly over Kauai. These hurricanes generated waves that affected the entire island chain. For example, although the largest waves from Hurricane Iwa directly impacted Kauai, the estimated deepwater wave height off the west coast of Hawaii was 14 feet. In the event that a large hurricane passes near the coast, model hurricane scenarios predict deepwater wave heights over 30 feet.

Nearshore Wave Heights

As deepwater waves propagate toward shore, they begin to encounter and be transformed by the ocean bottom. The process of *wave shoaling* generally steepens the wave and increases the wave height. The phenomenon of *wave refraction* will cause wave crests to bend and may locally increase or decrease the wave heights. *Wave breaking* occurs when the wave profile shape

becomes too steep to be maintained. This typically occurs when the ratio of wave height to water depth is about 0.8, and is a mechanism for dissipating the wave energy.

The wide and shallow reef that fronts Ewa Beach forces larger waves to break far offshore, dissipating much of the wave energy. The height of the waves that reach the shoreline are limited by the water depth. High tide conditions therefore allow higher waves to break on the rocky escarpment in front of the property.

Tides

The tides in Hawaii are semi-diurnal with pronounced diurnal inequalites; i.e. two tidal cycles per day with unequal water level ranges. The following tide levels have been established for the Honolulu area by the National Ocean Service:

Tide Level	Feet (MSL)
Highest Water (2/14/1967)	2.4
Mean Higher High Water	0.9
Mean Sea Level	0.0 (Reference Datum)
Mean Lower Low Water	-0.8
Lowest Water (4/30/1911)	-2.2

Hurricanes

Tropical cyclones originate over warm ocean waters, and they are considered hurricane strength when they generate sustained wind speeds over 64 knots (74mph). Hurricanes form near the equator, and in the central North Pacific usually move toward the west or northwest. During the primary hurricane season of July through September, Hurricanes generally form off the west coast of Mexico and move westward across the Central Pacific. These storms typically pass south of the Hawaiian Islands, and sometimes have a northward curvature near the islands. Late season hurricanes follow a somewhat different track, forming south of Hawaii and moving north toward the islands. Two hurricanes have actually passed through the Hawaiian islands in the past 25 years: Hurricanes Iwa in 1982, and Iniki in 1992, both passing near or over the island of Kauai. These storms caused high surf and wave damage on the south and west shores of all the islands.

The *Windward Oahu Hurricane Vulnerability Study* (Sea Engineering, 1990) indicates that a theoretical model hurricane approaching from the south to southwest could result in deepwater waves 34 feet high with periods of 13 seconds.

Still Water Level Rise

Storms and large waves produce storm surge and wave setup that results in elevated water levels at the shoreline. During prevailing, annual conditions this water level rise can be on the order of a foot above the tide level. However, during extreme events, the still water level rise can be significantly greater. During Hurricane Iniki, water level in Honolulu Harbor rose approximately

1.5 feet above normal levels. An extreme wave condition can raise the water level on the order of 2.5 feet or more.

Tsunami

The Ewa Beach area was inundated by the tsunamis of 1946, 1952, 1957, and 1960 with flood heights of 3, 5, 9, and 9 feet, respectively (Loomis, 1976).

3.2.3 Coastal Hazards

The shoreline in the project vicinity has a "Zone AE" flood hazard designation on the FEMA Flood Insurance Rate Map (FIRM), with a base flood elevation of 8 ft. Tsunami inundation up to 9 feet occurred during the tsunami of 1957 and 1960. Extreme wave heights can occur due to southern swell, Kona Storm waves, and the presence of nearby hurricanes.

In recent years there have been numerous occurrences of tide elevations up to 0.5 ft higher than predicted tides. These are apparently caused by sea level variations over broad ocean areas, and are an active area of research. However, one effect of higher sea level is that it will allow relatively larger wave heights to reach the shoreline, and cause higher run-up levels.

Studies conducted by SEI near the project site have indicated that large yearly wave events can be expected to reach the nominal 6 to7 ft elevation of the base of the wall. More extreme Hurricane waves can be expected to severely overtop the wall, and will likely cause flooding in the home. Figure 3-2 is a photograph of waves overtopping the seawall during high tide and large wave conditions, and shows that the wall is necessary to prevent wave bore propagation into the property.

3.3 Cultural and Historical Characteristics

There are World War II era installations along the coastline, but none at the project site.

Figure 3-15 Wave overtopping during high tide conditions

4. PROJECT IMPACTS

4.1 Surrounding Area

The project area is a developed residential community. All of the properties in the surrounding area, including the public access easement to the east, have walls of similar size, construction, and relative shoreline position. The coastal access provided in front of the project property is equal to or greater than the access in front of adjacent properties and nearby properties.

4.2 Topography

The project shoreline is a rugged coralline limestone bench at an elevation of about 6 to 7 feet above mean sea level (MSL). The project will not contribute to erosion of the shoreline or have other negative effects.

4.3 Water

The project is elevated above the normal water surface elevation. The project will have no discharges or fill placed in the water. Impact to the marine environment will consist of water return due to wave impact on the wall during high wave conditions.

4.4 Air

The wall is a hand-built structure. Minimal impacts included negligible amounts of dust formation.

4.5 Noise

As the wall is a hand-built structure, impacts on the ambient area noise levels are minimal.

4.6 Recreational

The project is mid-way between two coastal access easements. The shoreline escarpment is frequented by fishermen. Coastal access in front of the wall is equal to or greater than access at adjacent and nearby properties. Use of the shoreline escarpment for fishing and any other coastal access purposes will not be affected by the project.

4.7 Visual Resources

The project structure is a low-elevation wall, with a maximum height of 3.8 feet. It has no effect on visual resources of adjacent properties.

4.8 Roads and Utilities

The project involved minor delivery of construction materials to the site, and there was little or no effect on local traffic conditions. There was no effect on utilities.

4.9 Public Services

The project will not result in any change in the demand or supply of public services, including law enforcement, fire protection, educational, medical, and recreational facilities.

4.10 Summary of Short-Term and Long-Term Impacts

Only negligible short-term impacts were sustained by the project construction, including elevated noise and dust levels, and use of the roadway for material delivery. The project will have no long-term impact on recreational, biological, or scenic resources. The project will have no long-term impact on roads, utilities, or public services.

4.11 Adverse Environmental Impacts Which Cannot Be Avoided

The project has no known adverse environmental impacts.

4.12 Irreversible and Irretrievable Commitments of Resources

Committed resources include rock, cement, concrete and other constructions materials. The project is privately funded.

4.13 Mitigation Measures

The project has only negligible short-term impacts. In keeping with standard Best Management Practices, the contractor kept all construction materials stored and contained on the mauka side of the wall, and allowed no discharge of wastewater into the marine environment.

4.14 Impacts on Cultural Practices

The project will have no impacts on current cultural practices. The project is entirely within parcel property lines, and does not restrict coastal access.

5. HAWAII COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY

5.1 CZM Policies and Project Consistency

Objectives and policies for coastal zone management in the State of Hawaii are stated in the Hawaii Revised Statutes (HRS) Chapter 205A. Authority for Special Management Areas (SMA) is delegated to the counties. Single family residences and accessory structures are exempt from permit requirements.

CZM policies are primarily constructed with the purpose of protecting sandy beaches as a public resource. To that end, shoreline structures for erosion protection such as seawalls and revetments are prohibited as a matter of policy. However structures can be justified in some circumstances where there is a hardship.

This project does not involve a sandy shoreline. The project site is a hard rocky shoreline that is effectively stable. The project structure is not really designed for erosion protection, but is a protective barrier to prevent inundation of the property due to breaking waves during extreme conditions. Therefore, the project does not involve the protective considerations used for sandy shorelines.

The shoreline is a solution pitted limestone bench, and is not considered to have eroded measurably during the last 30 years. CZM policies and OEQC guidance documents regarding shoreline hardening are primarily in reference to eroding shorelines and sand beaches. The subject property is neither eroding, nor fronts a sand beach.

Coastal access issues are also important CZM considerations. The project shoreline is used for recreation - mostly by fishermen. Public access to the shoreline fronting the property is by an easement to the east and by an open cul-de-sac to the west. Shoreline access in front of the new wall is equal to or greater than that of adjacent or nearby properties. The wall replaces a pre-existing condition of *naupaka* vegetation that was approximately on the same alignment, and even seaward of, the new wall. Controlling the *naupaka* presented a safety hazard to the property owner, and the vegetation was not effective in preventing wave inundation.

5.2 Permits Required

The project wall has already been constructed. The land use approval required is Shoreline Setback Variance. An after-the-fact Building Permit will also be required. Shoreline Setback Hardship Standards are discussed in Section 5.4.

5.3 Significance Criteria

The following significance criteria are as presented in *A Guidebook for the Hawaii State Environmental Review Process*, prepared by the State Office of Environmental Quality Control, 1997.

(1) *"Irrevocable commitment to loss or destruction of any natural or cultural resource."* The project site is a denuded rocky shoreline, with no vegetation of significance. There is no significant flora or fauna, which would be lost due to construction of the seawall. No threatened or endangered species would be impacted by the project. No known cultural resources are located on the property.

(2) *"Curtails the range of beneficial uses of the environment."* There will be no impact on public access to the shoreline. There will be no significant change in lateral access along the shore. There will be no impact to fishing seaward of the project site.

(3) *"Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS."* The project is constructed landward of the proposed certified shoreline, and thus the project is entirely out of the State Conservation District along the shore. State waters will not be impacted by the project in any way.

(4) *"Substantially affects the economic or social welfare of the community or state."* The project would have no adverse social or economic impact to the state.

(5) *"Substantially affects public health."* The project has no adverse public health impacts.

(6) *"Involves substantial secondary impacts."* The project has no impact on public services or facilities.

(7) *"Involves a substantial degradation of environmental quality."* The project will have no significant adverse environmental impacts nor will it degrade environmental quality. It will not degrade water quality, nor impact marine flora and fauna. The project will permit landscaping of the shore behind the seawall. The project will prevent possible erosion of soils into the nearshore waters. The wall is visually consistent with the existing protected shore on both sides of the project site, and in the general vicinity.

(8) *"Has cumulative impacts."* The wall would be a stand-alone project, with no cumulative impacts or commitment for larger actions.

(9) *"Substantially affects a rare, threatened, or endangered species or it habitat."* No plant or animal species listed as endangered, threatened, proposed or candidate species by the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, as amended, or by the State of Hawaii under it's endangered species program, were detected during site surveys and none is known or anticipated to utilize the property.

(10) *"Detrimentally affects air or water quality or ambient noise levels."* The wall will be located behind the mean higher high tide shoreline, and no construction will occur in the water. No debris, petroleum products, or other construction-related substances or materials will be allowed to flow, fall, leach or otherwise enter the coastal waters. All construction material will be free of contaminants or pollutants. Best Management

Practices will be adhered to during construction to minimize environmental pollution and damage.

(11) *"Affects or is likely to suffer damage by being in an environmentally sensitive area such as a flood plain, tsunami zone, beach or erosion prone area, or coastal waters."* The wall may be subject to prevailing wave conditions at the shoreline. It has been designed to withstand those conditions. The wall will provide storm wave protection for the existing home.

(12) *"Substantially affects scenic vistas and viewplanes identified in county or state plans or studies."* The wall will not be visible from any public thoroughfare. Similar structures extend on either side of the project so there will be no aesthetic impact from the wall.

(13) *"Requires substantial energy consumption."* No significant energy would be expended by construction of the revetment, nor would it entail any long-term commitment to energy use.

5.4 Shoreline Setback Variance Justification: Statement of Hardship

A variance is being sought at TMK (1)9-1-030:008 from the Revised Ordinances of Honolulu (ROH) Section 23-1.5 *Prohibitions within the Shoreline Setback Area*. The applicant constructed a CRM wall and concrete slab splash apron within the shoreline setback zone. The variance sought is therefore after-the-fact. There is at present no certified shoreline for the property, however a shoreline survey has been conducted, and the certification application submitted to the State of Hawaii Department of Land and Natural Resources. The application was not accepted due to the presence of the un-permitted CRM wall on the property (the subject of this EA), as described in a letter dated May 12, 2006. According to ROH Section 23-1.4, the shoreline determination must therefore be made by the director of the Department for the purposes of establishing the shoreline setback line.

Under ROH Section 23-1.8, a variance can be issued under a standard of hardship including the following:

(A)

(i) *The applicant would be deprived of reasonable use of the land if required to comply fully with the shoreline setback ordinance and 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:*

(iii) *The proposal is the practicable alternative which best conforms to the purpose of this chapter and the shoreline setback rules.*

(B)

> *…the applicant's proposal is a reasonable use of the land …(and) should consider factors such as shoreline conditions, erosion, surf and flood conditions, and the geography of the lot.*

The present project was initiated by the property owner as a result of flooding and hazards that occurred during previously existing conditions. Prior to the CRM wall construction, *naupaka* vegetation grew along the present wall alignment. The owner was injured from several falls that occurred when trying to control the flourishing vegetation. The falls were the combined result of wave splash and the irregular terrain. During high wave conditions, wave runup would cause inundation of the backyard of the property, depriving the owner of reasonable use of that portion of the property.

The low CRM wall and concrete splash apron act together to 1) prevent the full force of waves from propagating into the property and 2) drain the overtopping and wave splash of wave impact against the wall during high wave conditions. Because of the project construction, the property owner has a safer terrain, has full use of her backyard, and has a better viewplane.

The CRM wall is not designed as a major retaining structure, or to prevent shoreline erosion. The wall is constructed on an elevated shoreline composed of extremely durable coralline limestone. The shoreline is not subject to erosion on a human time scale. The project CRM wall, therefore, does not artificially fix the shoreline. The project circumstances are unique relative to the shoreline setback rules (ROH Section 23-1.2), as it does not involve the protection of a sandy beach, and does not question the reasonableness of the ordinance.

The project is also consistent with Section 23-1.2, as *…it is the secondary policy of the city to reduce hazards from coastal floods*. All properties along the shoreline reach, including both nearby shoreline public access easements, have seawalls that are similar in height and relative location on the property. All of these walls serve the purpose of preventing wave inundation of the properties, reducing flood hazards and allowing the property owners better use of their property.

The project is the best practicable alternative to reduce the hazards and problems due to high wave conditions. The CRM wall has a minimal footprint and elevation, and does not affect coastal access. An uncemented rock revetment would need to be a more massive structure to achieve the same strength as a CRM wall. A previously existing vegetation barrier proved to be ineffective as a wave barrier, and keeping the vegetation under control was a safety hazard to the property owner due to the irregular terrain.

5.5 Flood Hazard Determination

The shoreline in the project vicinity has a "Zone AE" flood hazard designation on the FEMA Flood Insurance Rate Map (FIRM), with a base flood elevation of 8 ft. The project topographic drawing is shown in Figure 5-1. The average top wall elevation (8.9 to 9 ft) is approximately 1 ft above the regulatory flood elevation. Both adjacent properties have walls equal in height at the property boundaries (see Figures 2-8, 2-10, and 5-1). Therefore, the presence of the wall will not

affect the regulatory flood nor aggravate existing flood related erosion hazards, and will not result in an increase in the regulatory flood hazard.

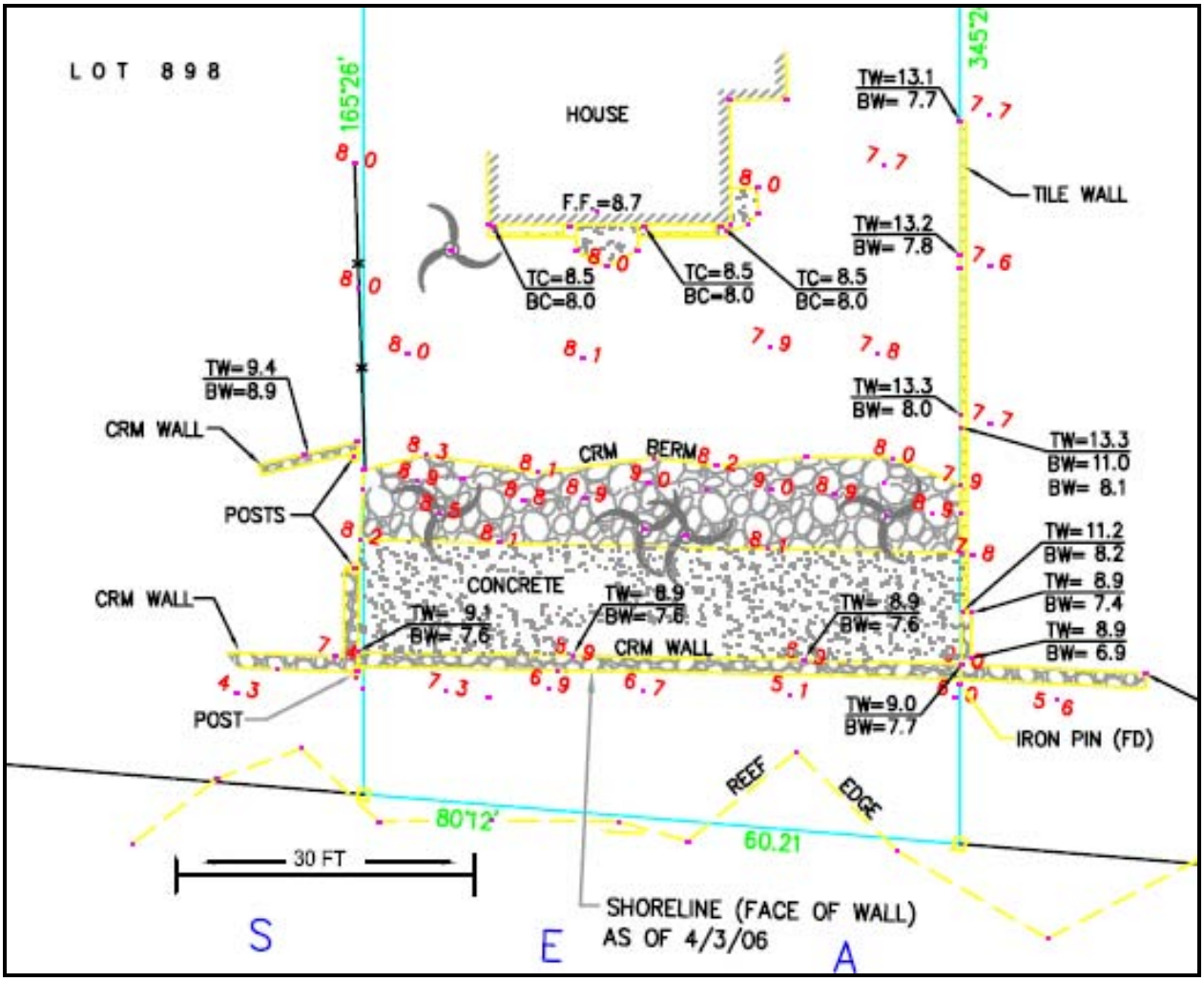


Figure 5-1 Project topographic drawing

6. ANTICIPATED DETERMINATION

Based on the materials presented and the findings of this Environmental Assessment, it is anticipated that the approving agency will determine that the project will not have a significant environmental impact. A Finding of No Significant Impact (FONSI) is anticipated.

7. REFERENCES

AECOS, Inc., 1979, *Oahu Coral Reef Inventory*, prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

Haraguchi, P., 1984, *Hurricanes in Hawaii*, Prepared for USACOE, Pacific Ocean Division.

Loomis, Harold G., 1976, *Tsunami Wave Runup Heights in Hawaii*, Hawaii Institute of Geophysics, University of Hawaii.

Sea Engineering, Inc., 1993b, Leeward Oahu *Hurricane Vulnerability Study, Determination of Coastal Inundation Limits,* Prepared for State of Hawaii Department of Defense, the USACOE, Pacific Division, and Federal Emergency Management Agency, Region IX.

APPENDIX A

Draft Environmental Assessment
Review Comment and Response Letters

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
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MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

AUG 28 2006

2006/ED-14(cm)

August 25, 2006

Mr. James H. Barry
Sea Engineering, Inc.
Makai Research Pier
Waimanalo, Hawaii 96795

Dear. Mr. Barry:

Re: Draft Environmental Assessment
Barry Seawall and Concrete Apron
91-447 Pupu Place – Ewa Beach
Tax Map Key 9-1-30: 8

We have reviewed the Draft Environmental Assessment (DEA) for the concrete apron and seawall and offer the following comments:

1. Section 1 General Information: Under Planning & Zoning, include a line for "Development Plan Land Use." The parcel included under the proposed action is within a Low and Medium Density Residential area on the Ewa DP Urban Land Use Map (August 1997). It should be noted that the subject property's current DP land use designation is not a site-specific designation, but rather an illustration of text policies.

   According to the Ewa DP, the vision for Ewa's future will be implemented through key plan elements, including a continuous Shoreline Park along the Ewa coastline. This Shoreline Park is an important element in the Ewa Open Space and Greenways Network and will stretch from Pearl Harbor to Ko Olina (Section 2.2.3 of the Ewa DP). This Shoreline Park is shown on the Ewa DP Open Space Map (August 1997). The Final EA should state the above and should describe how the proposed action supports this open space element.

2. Section 2.2 Shoreline Certification states that approval of the Shoreline Setback Variance application must therefore be made with the existing Certified Shoreline Survey at the discretion of the director. It should more appropriately be stated that *consideration* of the Shoreline Setback Variance application must therefore be made with the existing *uncertified* Shoreline Survey at the discretion of the director.

3. Section 3.1.1, Shoreline Description describes the approximate 3,500 feet reach of rocky shoreline that separates the sand beaches of Hau Bush Beach and the start of the sand beach at Ewa Beach near Fort Weaver Road. The document provides inadequate detail regarding the conditions of the shoreline along adjacent properties. The Final EA should

include specific descriptions of the shoreline in a regional approach. The neighboring shoreline should be detailed for a half mile in each direction from the proposed property.

4. Section 3.1.5, Coastal Use, and Section 4.6, Recreational, state that the coastal access provided in front of the project property is equal to or greater than the access in front of adjacent properties and nearby properties. The final EA should provide specific detail about the access and distances of access for the project property and adjacent properties.

5. Section 4, Project Impacts should be revised to assess impacts on current cultural practices which would result from the project. Guidelines for this assessment are available at Guidelines for Assessing Cultural Impacts through the OEQC website.

6. Section 5.1, CZM Policies and Project Consistency, states that since no sandy shorelines are present, the project does not involve the considerations used for sandy shorelines. Section 5.3, Significance Criteria, states that since the wall is landward of the state Conservation District and therefore state waters will not be impacted in any way. How does the project comply with the state and county policies on shoreline hardening? The Final EA should follow the guidelines enumerated in the OEQC guidance document, especially the 30-year historical coastal analysis.

7. Section 5.3 Significance Criteria, Number 12, states that there will be no aesthetic impact of the wall since similar structures extend on either side. As provided in comment Number 12, the document provides inadequate detail regarding the conditions of the shoreline along adjacent properties. The Final EA should include specific descriptions of the shoreline in a regional approach. The neighboring shoreline should be detailed for a half mile in each direction from the proposed property.

8. Section 5.2 Permits Required states that a Shoreline Setback Variance is required. The Final EA should include a section that addresses the criteria under which a shoreline setback variance may be granted. This section must specifically address the three (3) tests of the Hardship Standard, pursuant to Section 23-1.8(b)(3), ROH. We strongly recommend that a thorough discussion be provided in the context of these specific criteria.

Thank you for the opportunity to comment on the DEA. If you have any questions, please contact Carrie McCabe of our staff at 527-5349.

Very truly yours,

for Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:pl

G:/landuse/posseworkingdirectory/carrie/2006/correspondence/Barry seawall comments-dpp.com

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

October 26, 2006

Mr. Henry Eng, Director
City and County of Honolulu, Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hi 96813

Dear Mr. Eng,

Subject: Bernadine Barry Seawall, 91-447 Pupu Street, Ewa Beach

This is in response to the letter from your office dated August 25, 2006, in which you provided Draft Environmental Assessment (DEA) review comments regarding the subject wall. The comments were fairly detailed, and I have taken the liberty to repeat them here in order to clarify our responses. Original DPP comments are italicized below.

1. Section 1 General Information: Under Planning & Zoning, include a line for "Development Plan Land Use." The parcel included under the proposed action is within a Low and Medium Density Residential area on the Ewa DP Urban Land Use Map (August 1997). It should be noted that the subject property's current DP land use designation is not a site-specific designation, but rather an illustration of text policies.

According to the Ewa DP, the vision for Ewa's future will be implemented through key plan elements, including a continuous Shoreline Park along the Ewa coastline. This Shoreline Park is an important element in the Ewa Open Space and Greenways Network and will stretch from Pearl Harbor to Ko Olina (Section 2.2.3 of the Ewa DP). This Shoreline Park is shown on the Ewa DP Open Space Map (August 1997). The Final EA should state the above and should describe how the proposed action supports this open space element.

The subject wall is built entirely on private property owned by the applicant. The subject wall has no impact on any of the key plan elements envisioned by the Ewa Development Plan. A description of the Ewa Development Plan, and a discussion of why the applicant's wall will have no impact on the plan, will be added to the Final EA.

2. *Section 2.2 Shoreline Certification states that approval of the Shoreline Setback Variance application must therefore be made with the existing Certified Shoreline Survey at the discretion of the director. It should more appropriately be stated that* consideration *of the Shoreline Setback Variance application must therefore be made with the existing* uncertified *Shoreline Survey at the discretion of the director.*

The DEA will be revised to incorporate the above comment.

3. *Section 3.1.1, Shoreline Description describes the approximate 3,500 feet reach of rocky shoreline that separates the sand beaches of Hau Bush Beach and the start of the sand beach at Ewa Beach near Fort Weaver Road. The document provides inadequate detail regarding the conditions of the shoreline along adjacent properties. The Final EA should include specific descriptions of the shoreline in a regional approach. The neighboring shoreline should be detailed for a half mile in each direction from the proposed property.*

A discussion of the condition and characteristics of adjacent properties will be further detailed in the Final EA. The shoreline will be described for a half mile in each direction.

4. *Section 3.1.5, Coastal Use, and Section 4.6, Recreational, state that the coastal access provided in front of the project property is equal to or greater than the access in front of adjacent properties and nearby properties. The final EA should provide specific detail about the access and distances of access for the project property and adjacent properties.*

Adjacent properties and shoreline lateral access will be further detailed in the Final EA to provide the requested information.

5. *Section 4, Project Impacts should be revised to assess impacts on current cultural practices which would result from the project. Guidelines for this assessment are available at Guidelines for Assessing Cultural Impacts through the OEQC website.*

Impacts on cultural practices will be addressed in the Final EA.

6. Section 5.1, CZM Policies and Project Consistency, states that since no sandy shorelines are present, the project does not involve the considerations used for sandy shorelines. Section 5.3, Significance Criteria, states that since the wall is landward of the state Conservation District and therefore state waters will not be impacted in any way. How does the project comply with the state and county policies on shoreline hardening? The Final EA should follow the guidelines enumerated in the OEQC guidance document, especially the 30-year historical coastal analysis.

As noted in the DEA, shoreline hardening and coastal erosion are not an issue with this project, as the shoreline is composed of rock. The rock morphology of the shoreline is illustrated by numerous photographs in the DEA. Additional discussion of the rocky nature of the shore and thus the lack of seawall impact will be included in the Final EA.

7. Section 5.3 Significance Criteria, Number 12, states that there will be no aesthetic impact of the wall since similar structures extend on either side. As provided in comment Number 12, the document provides inadequate detail regarding the conditions of the shoreline along adjacent properties. The Final EA should include specific descriptions of the shoreline in a regional approach. The neighboring shoreline should be detailed for a half mile in each direction from the proposed property.

Adjacent properties will be further detailed in the Final EA. The shoreline will be described for a half mile in each direction.

8. Section 5.2 Permits Required states that a Shoreline Setback Variance is required. The Final EA should include a section that addresses the criteria under which a shoreline setback variance may be granted. This section must specifically address the three (3) tests of the Hardship Standard, pursuant to Section 23-1.8(b)(3), ROH. We strongly recommend that a thorough discussion be provided in the context of these specific criteria.

The DEA contains a rather thorough discussion of the hardship criteria as listed in ROH Section 23-1.8, as well as the Shoreline Setback Rules, ROH Section 23-1.2 (see DEA, Section 5.4). However, we will revise and strengthen this discussion in the final EA.

Thank you for your review and helpful comments,

J. Barry

James H. Barry
Coastal Engineer

Cc: Ms. Bernadine Barry, Applicant
Mr. William Espero, Hawaii State Senator, District 20

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

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August 21, 2006

Henry Eng
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attn: Carrie McCabe

Dear Mr. Eng:

Subject: Draft Environmental Assessment (EA)
Bernadine Barry after-the-fact seawall and SSV, Ewa Beach

We have the following comments to offer:

Shoreline hardening policy: How does this project comply with state and county policies on shoreline hardening? Follow the guidelines enumerated in our guidance document, especially the question on the 30-year historical coastal analysis. You may access the guidelines at: http://www.state.hi.us/health/oeqc/guidance/shoreline.htm

Cultural impacts assessment: Act 50 was passed by the legislature in April 2000. This mandates an assessment of impacts to current cultural practices by the proposed project. Please include this in the final EA. For assistance in the preparation refer to our *Guidelines for Assessing Cultural Impacts,* which you may find at *http://www.state.hi.us/health/oeqc/guidance/cultural.htm.*

Correspondence: In the final EA enclose copies of any correspondence received during the preconsultation period. Also enclose a copy of the certified shoreline application you recently made to DLNR.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

c: James Barry, Sea Engineering

Sea Engineering, Inc.

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Phone: (808) 259-7966 / FAX (808) 259-8143 • Website: www.seaengineering.com

October 18, 2006

Ms. Genevieve Salmonson, Director
State of Hawaii, Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI, 96813

Dear Ms. Salmonson,

Subject: Bernadine Barry Seawall, 91-447 Pupu Street, Ewa Beach

This is in response to your letter dated August 21, 2006 to the City and County of Honolulu, Department of Planning and Permitting, in which you provided Draft Environmental Assessment (DEA) review comments regarding the subject wall. Two general issues are reflected in your letter:

- How does the project comply with state and county policies on shoreline hardening?
- The need for assessment of impacts to cultural practices.

Please note that shoreline hardening is not an issue in this Shoreline Setback Variance application. The subject wall is a flood control structure of modest height that is above the upper reaches of the wash of the waves except during extreme conditions. The shoreline morphology along this reach of coast consists of an irregular, solution-pitted limestone rock escarpment that rises four to five feet more or less vertically from the water surface, and then slopes gradually to a maximum elevation between 7 and 8 feet (msl). As the shoreline morphology consists of hard limestone rock, it is not "hardened" by the subject wall. As noted in the DEA, the rock shoreline is subject to appreciable erosion only on a geologic time scale. We believe that property boundaries were surveyed at the high tide mark in 1967 and, except for some irregularity, the property line and reef edge have remained more or less the same up to the present, as indicated on the shoreline survey contained in the DEA. There has therefore been no erosion within the last 30 years that is measurable by current standard methodology. We will modify the DEA to further elaborate on this point.

Coastal use practices were addressed in the DEA. The project area is exposed to severe weather elements, and no cultural artifacts or other items of significance such as petroglyphs could possibly have survived. There was no excavation as the wall is sited on hard rock. We will modify the DEA to more fully cover these issues.

We will include correspondence and review comment response letters in the Final EA, as well as the recent shoreline certification application submitted to the Board of Land and Natural Resources.

Thank you for your review and helpful comments.

J. Barry

James H. Barry
Coastal Engineer
Sea Engineering, Inc.

Cc: Ms. Carrie McCabe, City and County of Honolulu, Dept. of Planning and Permitting
Ms. Bernadine Barry, Applicant
Mr. William Espero, Hawaii State Senator, District 20

UNIVERSITY OF HAWAI'I AT MANOA
Environmental Center

August 22, 2006
EA:0304

Ms. Carrie McCabe
Department of Planning and Permitting
650 South King Street
Honolulu, HI 96813

Dear Ms. McCabe:

Draft Environmental Assessment
and Coastal Engineering Evaluation for a
Shoreline Variance (Seawall) at 91-447 Pupu Street
Ewa Beach, Oahu

The proposed action is a an after the fact request (AFT) for approval for a shoreline setback variance for a low-elevation, freestanding cement rubble masonry (CRM) wall and concrete deck splash apron at 91-447 Pupu Street, Ewa Beach, Oahu. The property is owned by Ms. Bernadine Barry. The wall is located in the City and County of Honolulu's Special Management Area (SMA) within the 40-foot setback area.

This review was conducted with the assistance of Charles Fletcher, Geology and Geophysics; and Dolan Eversole, Sea Grant College Program.

General Comment

This is another in a long line of after-the-fact approval sought by coastal land owners in the City and County of Honolulu. Since the perception is that the process takes a long time to comply with and the penalty for disregarding the law is somewhat minor compared to the cost of the project itself, many land owners are tempted to act first and asked for permission afterwards. In the case of the Barry seawall in Ewa Beach, the house lot is situated on a rocky shoreline with no immediate threat to the owner's property from an eroding coastline. In this case there was no reason for haste. We support the Department of Land and Natural Resources zero tolerance for all illegal seawalls. If some shoreline structure is needed then the appropriate process should be engaged so that a thorough and timely review can take place.

We recommend denial of the ATF permit and removal of the wall. Once this is accomplished the owner may apply for a shoreline certification and subsequent SMA or Setback Variance for a fully-permitted retaining seawall. To allow the ATF permit will circumvent the CZM laws in place that require full environmental review and justification of such structures before they are approved.

2500 Dole Street, Krauss Annex 19, Honolulu, Hawai'i 96822-2313
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

Our reviewers are not particularly concerned with the impact the new wall may have on the coastal processes here. The region is naturally rocky on emergent fossil reef shelf. The primary concern with shoreline structures is the potential negative impact to sediment supply and restricting lateral access along the shoreline. Neither of these is pertinent in this case. Access is naturally limited due to the rocky nature, but some fishermen may use the area to fish or access nearby fishing areas.

The DEA explains that the wave run-up would cause inundation of the owner's backyard. This brings into question whether the shoreline for jurisdictional purposes was in the approximate alignment as the seawall is today as the DEA claims. The DEA states there was naupaka in-line and seaward of the existing seawall, however, naupaka is a salt-tolerant species and is not a good indicator of the shoreline as defined by Hawaii Administrative Rule or Hawaii Revised Statute.

If the seawall was in fact built seaward of the "shoreline" then it would fall into the state Conservation District and would be subject to the "no tolerance" policy the Board of Land and Natural resources adopted in 1999. This policy requires unauthorized shoreline structures built seaward of the shoreline to be removed at the owner's expense and no consideration of after-the-fact permits be made. The prior location of the shoreline is critical to ascertaining jurisdictional boundaries and whether the wall is subject to the DLNR "no tolerance" policy.

We also question the justification of the seawall in the current location, there seems to be room to locate a seawall further landward and there is no imminent threat to the dwelling that might justify hardship. Since the rocky shoreline is not highly erodable, justification for the wall is the protection of the dwelling and backyard. If waves are overtopping the present wall, won't the structure and backyard continue to be threatened during severe storm events?

Thank you for the opportunity to review this DEA.

Sincerely,

Peter Rappa
Environmental Review Coordinator

cc: OEQC
Bernadine Barry (Applicant)
Sea Engineering
James Moncur
Dolan Eversole
Charles Fletcher

Sea Engineering, Inc.

Makai Research Pier • Waimanalo, Hawaii 96795-1820 • E-mail: sei@seaengineering.com
Phone: (808) 259-7966 / FAX (808) 259-8143 • Website: www.seaengineering.com

September 26, 2006

Mr. Peter Rappa
Environmental Review Coordinator,
Environmental Center,
University of Hawaii
2500 Dole Street, Krauss Annex 19
Honolulu, HI, 96822

Subject: Bernadine Barry Seawall

Dear Mr. Rappa,

This is in response to your letter dated August 22, 2006 to the City and County of Honolulu, Department of Planning and Permitting. We note that in review of the Environmental Assessment for the seawall at 91-447 Pupu Street you have determined that there is no significant environmental impact from the wall.

However, in spite of the environmentally benign nature of the project, you appear to have concerns with procedural and jurisdictional issues. These are set by statute and departmental policy, and are things over which permit applicants, such as our client, have no control.

The City and County of Honolulu, Department of Planning and Permitting, has a process in place for review of after-the-fact permit applications for structures constructed within the Shoreline Setback Zone. Our client entered this process in good faith under instruction from the Department. The process includes the same full environmental review and CZM consistency as any other permit application. Your letter is part of this review.

Please note that the project seawall is not a retaining structure. The purpose of the wall is not to prevent shoreline erosion, but to protect the property from receiving the full impact of wave action during extreme wave conditions. It is a flood control structure and as such is specifically addressed in the Revised Ordinances of Honolulu Chapter 23 (*Shoreline Setbacks*), Section 1.2 (*Purpose*), Paragraph *a*:

> *"…It is the secondary policy of the city to reduce hazards from coastal floods."*

Virtually every one of the approximately 50 properties along this 3,000-foot reach of shoreline has a similar wall, similarly located, and built for the very same reasons. This observation extends to the two public beach access easements nearest to the project property.

We agree that it is unfortunate that this is an after-the-fact project. We have found that there is a significant amount of confusion and general lack of awareness on the part of the public

concerning shoreline rules and regulations and the permit process. These are complex issues and the rules and procedures are arcane even to those of us in the profession. On the question of motive, therefore, it is unfair to pre-suppose that the wall was built in willful disregard for the law, and we assure you that this is not so. In fact, this has been an extremely stressful situation for our client.

Finally, we note that you have concerns over the location of the wall with respect to City or State jurisdiction. Determination of the Certified Shoreline is indeed an important issue, and we would have preferred to have the mattered settled prior to the initiation and expense of the Environmental Assessment and permit application process. However, the applicant was cited for a SSV violation on the basis of City and County jurisdiction, and, as previously mentioned, we have implemented the procedures as instructed to us by the Department of Planning and Permitting, including the submission of a shoreline certification survey and application to the State Department of Land and Natural Resources. As you probably realize, the shoreline definition in ROH Chapter 23 is a "one size fits all" statement that is sometimes difficult to apply to elevated and irregular rock shorelines. Of the eighteen shoreline properties within the projects Tax Map, five have certified shorelines. The location of our client's wall is consistent with the location of the shorelines as certified on these five properties, and, as noted in the EA, the wall is contiguous with existing walls on adjoining properties. However, as a result of concerns from you and others, we have gathered more information that will be part of the Final Environmental Assessment in order to clarify the wall's location within a regional context.

Thank you for your review and helpful comments.

J. Barry

James H. Barry
Coastal Engineer
Sea Engineering, Inc.

Cc: Dr. Charles Fletcher, University of Hawaii Department of Geology and Geophysics
Mr. Dolan Eversole, Office of Conservation and Coastal Lands, State DLNR
Ms. Carrie McCabe, City and County of Honolulu, Dept. of Planning and Permitting
Ms. Bernadine Barry, Applicant
Mr. William Espero, Hawaii State Senator, District 20

LINDA LINGLE
GOVERNOR

ANTHONY J.H. CHING
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, Hawaii 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

July 19, 2006

Mr. Henry Eng, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Eng:

Subject: Draft Environmental Assessment (DEA) and Coastal Engineering Evaluation for a Shoreline Setback Variance
Bernadine Barry Seawall
91-447 Pupu Street, Ewa Beach, Hawaii
Tax Map Key: 9-1-30: 8

We have reviewed the DEA for the subject project transmitted by your letter dated July 5, 2006. We understand that a new Cemented Rubble Masonry (CRM) wall and concrete deck splash apron were constructed on the subject parcel in April 2005 without the required building permit, shoreline setback variance, and shoreline certification. We further understand that the DEA has been prepared as part of an after-the-fact variance and permit application process to correct these violations.

Based on review of the records and official maps on file at our office, we have determined that the Land Use Commission (LUC) placed the subject parcel within the State Land Use Urban District on August 23, 1964. All coastal areas of the State having an elevation *below* the highwater mark were designated within the State Land Use Conservation District.[1] As seafront property, the subject parcel would have been subject to this standard.

According to the shoreline survey (Figure 2-5), the subject parcel has lost 884 square feet of land to erosion, decreasing in size from 8,610 square feet to 7,726 square feet. Although the rocky

[1] "Highwater mark" was a term used to denote the seaward boundary of all seafront property. It has since been superseded by the term "shoreline." Section 205A-1, Hawaii Revised Statutes, defines shoreline as "the upper reaches of the wash of the waves, other than storm and seismic waves, at high tide during the season of the year in which the highest wash of the waves occurs, usually evidenced by the edge of vegetation growth, or the upper limit of debris left by the wash of the waves."

coralline limestone on which the CRM wall is constructed continues to remain stable and intact during low tide, the DEA indicates that wave runup at high tide has caused inundation of the backyard of the parcel to such an extent that it deprived the owner of reasonable use of that portion of the parcel. Figure 3-2 in the DEA further illustrates that even with the construction of the CRM wall, waves overtop it and flood the concrete deck splash apron during high tide conditions. Despite anecdotal references in the DEA to naupaka growing on approximately the same alignment as the CRM wall in the past, there is no reliable information provided at this time on the location of the shoreline prior to the construction of these improvements. If anything, the information in the DEA indicates that the shoreline would extend well inland were it not for the improvements, potentially placing both structures partially or wholly within the State Land Use Conservation District.

We therefore suggest that the applicant submit a boundary interpretation request to our office pursuant to §15-15-22, Hawaii Administrative Rules. The request should be submitted with information that substantiates the location of the shoreline prior to the construction of the CRM wall and concrete deck splash apron.

We have no further comments to offer at this time. Thank you for the opportunity to comment on the subject DEA. Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

ANTHONY J. H. CHING
Executive Officer

c: Office of Environmental Quality Control
Office of Conservation and Coastal Lands, Department of Land and Natural Resources

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

October 6, 2006

Mr. Anthony Ching, Executive Officer
Land Use Commission,
State of Hawaii, Department of Business, Economic Development, and Tourism
Post Office Box 2359
Honolulu, HI, 96804-2359

Subject: Bernadine Barry Seawall, 91-447 Pupu Street, Ewa Beach

Dear Mr.Ching,

This is in response to your letter dated August 19, 2006 to the City and County of Honolulu, Department of Planning and Permitting, in which you expressed some concerns regarding the subject wall.

After review of the project Draft Environmental Assessment (DEA) in light of your letter and others expressing similar concern, we agree that the DEA for the project could convey the impression that the wall is situated seaward of the shoreline as defined in Hawaii Revised Statutes, Chapter 205A-1.

The impression is generated by one photograph of a wave overtopping the structure without contextual information, and statements in the DEA describing inundation conditions that could be interpreted as occurring on a less than infrequent basis. We regret that the language in the draft EA is less than precise on this important subject, and will modify the final EA to more accurately characterize the wall location with respect to extreme water levels and wave inundation limits.

We recognize that, being seafront property, the subject parcel includes the boundary between Urban and Conservation Districts. At one time, this boundary was held at the "highwater mark", where the makai property line now stands. As you mention in your letter, the district boundary definition was superseded at some time in the past by the term "shoreline", which is essentially the upper reaches of the wash of the waves (HRS 205A-1). The shoreline survey, Figure 2-1 in the DEA, is part of the submittal package necessary for shoreline certification. We believe that the proposed shoreline shown in the survey is reasonably located with respect to the shoreline definition and the physical characteristics of the shoreline and adjacent properties, considering the following factors:

- The wall is located at or behind the location of walls on adjacent properties, and is entirely within the boundary lines of the property.

- The wall does not restrict public access and reasonable use of the shoreline by the public.

- A conservative value for the elevation of the seaward base of the wall, using an average of all topographic points shown in the DEA, is 6.4 feet msl. Numerical runup studies conducted by Sea Engineering for design of the new Ocean Pointe Marina, a nearby area with similar wave exposure, nearshore bathymetry, and shoreline morphology, show that the upper reaches of the wash of the waves (i.e. wave runup) in a non-storm situation can be expected to reach that elevation at a statistical frequency of once per year. Wave overwash of this elevation will therefore occur on a less frequent basis during statistically more extreme wave events, including storms and hurricanes.

- Of the eighteen shoreline properties within the project's Tax Map, five have certified shorelines. The location of our client's wall is consistent with the location of the shorelines as certified on these five properties, and, as noted in the DEA, the wall is contiguous with existing walls on adjoining properties.

The shoreline morphology along this reach of coast consists of an irregular, solution-pitted limestone escarpment that rises four to five feet more or less vertically from the water surface, and then slopes gradually to a maximum elevation between 7 and 8 feet (msl). The term "highwater mark" is therefore synonymous with the mapped reef edge, and this is how the property boundaries are marked on the Tax Map. The survey shows that the subject wall is set back 12.84 feet from the reef edge at the west end of the property, and 16.62 feet from the reef edge at the east end. As the shoreline escarpment is hard limestone, it is subject to appreciable erosion only on a geologic time scale, and, except for some irregularity, the property line and reef edge have remained more or less the same up to the present.

The term "erosion" that is used on the survey drawing, therefore, does not refer to physical loss of material from the shoreline, but is used to designate the difference between the "highwater mark" and the "shoreline". In other words, "erosion" defines the area of private property that lies between the old boundary line and the proposed new boundary line separating the Urban District from the Conservation District.

The applicant was cited for a Shoreline Setback Variance violation on the basis of City and County jurisdiction, and we have implemented procedures to address the violation as instructed by the Department of Planning and Permitting. This includes the submission of a shoreline certification survey and application for approval to the Board of Land and Natural Resources.

Hawaii Administrative Rules Title 15-15-22 refers to "Interpretation of District Boundaries" by the State Land Use Commission. Properties along the shoreline require a prior shoreline determination by the Board of Land and Natural Resources, operating under Hawaii Revised Statutes 205A-42. As stated above, we believe that the shoreline is properly and reasonably located at the seaward face of the subject wall. However, shoreline certification is still pending, and we therefore do not believe a request for a boundary determination under HAR 15-5-22 is appropriate at this time.

As a result of your concerns, we have gathered more information that will be part of the Final Environmental Assessment, and will clarify language in the EA to more precisely explain the reasonable location of the subject wall.

Thank you for your review and helpful comments.

J. Barry

James H. Barry
Coastal Engineer
Sea Engineering, Inc.

Cc: Ms. Carrie McCabe, City and County of Honolulu, Dept. of Planning and Permitting
Ms. Bernadine Barry, Applicant
Mr. William Espero, Hawaii State Senator, District 20

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
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AQUATIC RESOURCES
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:TM

Correspondence: OA 07-03

Henry Eng, FAICP, Director
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

AUG 3 1 2006

Dear Mr. Eng,

SUBJECT: Draft Environmental Assessment Comments for an After the Fact Seawall Located at 91-447 Pupu St, Oneula Beach, Ewa, Oahu, TMK:(1) 9-1-030:008

The Office of Conservation and Coastal Lands (OCCL) has reviewed the draft Environmental Assessment (EA) and Coastal Engineering Evaluation for a Shoreline Setback Variance at 91-447 Pupu Street, dated June 2006. According to the information presented, an unauthorized CRM wall and concrete deck splash slab were constructed on the property sometime in April of 2005. The unauthorized wall is approximately 60' long, 1.8'-3.8' high above the uneven coralline rock surface on the makai side and 1.3' in width. The unpermitted concrete slab extends 11' behind the wall and covers the entire 60' width of the lot. The slab is approximately 4 inches thick.

According to the information presented, during high wave conditions, the shoreline properties are subject to inundation by wave overtopping and wave bore (whitewater). The wall is effective in inhibiting destructive wave bore advance, but do no completely prevent wave overtopping and wetting of the property. Figure 3-2 of the draft EA illustrates conditions at high tide with the wave overtopping and inundating the concrete deck **(Exhibit 1)**.

The OCCL notes, "shoreline" means the upper reaches of the wash of the waves, other then storm or seismic waves, at high tide during the season of the year in which the highest wash of the waves occur usually evidenced by the edge of vegetation growth, or the upper limits of debris left by the wash of the waves. Based upon the evidence presented in the draft, it appears that the seawall may have been constructed seaward of the shoreline.

Pursuant to the Hawaii Administrative Rules (HAR), §15-15-20 Standards for determining "C" conservation district boundaries shall include lands having an elevation below the shoreline as stated by §205A-1, HRS, marine waters, fishponds, and tidepools of the State, and accreted portions of lands pursuant to §501-33, HRS, unless otherwise designated on the district maps.

Henry Eng
City and County of Honolulu, [illegible]

Correspondence: OA 07-03

We wish to inform you that the Board of Land and Natural Resources adopted a "No Tolerance" policy for any unauthorized seawall constructed after 1999. The wall appears to be in violation of the Conservation District rules. Should you have any questions, please contact our Office at 587-0377.

Sincerely,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

c: Chairperson
ODLO
Bernadine Barry

Sea Engineering, Inc.

Makai Research Pier • Waimanalo, Hawaii 96795-1820 • E-mail: sei@seaengineering.com
Phone: (808) 259-7966 / FAX (808) 259-8143 • Website: www.seaengineering.com

October 4, 2006

Mr. Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands,
State of Hawaii, Department of Land and Natural Resources
Post Office Box 621
Honolulu, HI, 96809

Subject: Bernadine Barry Seawall, 91-447 Pupu Street, Ewa Beach

Dear Mr. Lemmo,

This is in response to your letter dated August 31, 2006 to the City and County of Honolulu, Department of Planning and Permitting in which you expressed concerns that the subject wall may be improperly sited within the State Conservation District. After review of the project Draft Environmental Assessment (DEA) in light of your letter, we agree that the DEA for the project could convey the impression that the wall is situated seaward of the shoreline as defined in ROH, Chapter 23.

The impression is generated by one photograph of a wave overtopping the structure without contextual information, and statements in the DEA describing inundation conditions that could be interpreted as occurring on a less than infrequent basis. We regret that the language in the draft EA is less than precise on this important subject, and will modify the final EA to more accurately characterize the wall location with respect to extreme water levels and wave inundation limits.

There is no doubt that flooding due to wave inundation is a regional problem along this shoreline. The irregular limestone shelf morphology is continuous for approximately 3,000 feet and about 50 private properties. Nearly all of these properties contain some form of flood protection. This flood protection mostly consists of walls similar in height and relative setback from the high-water line as the subject wall. Infrequent events that require flood protection from wave overwash include hurricanes and Kona storms, as well as statistically extreme wave events and extreme wave events that are combined with unusually high water levels due to transient oceanographic phenomena. Application of the shoreline definition – trying to define a line of the "upper reaches of the wash of the waves" along this irregular rock shoreline – is a difficult task.

We believe that the project wall is reasonably located with respect to the shoreline definition and the physical characteristics of the shoreline and adjacent properties, considering the following factors:

- The wall is located at or behind the location of walls on adjacent properties, and is entirely within the boundary lines of the property.

- The wall does not restrict public access and reasonable use of the shoreline by the public.

- A conservative value for the elevation of the seaward base of the wall, using an average of all topographic points shown in the DEA, is 6.4 feet msl. Numerical runup studies conducted by SEI for design of the new Ocean Pointe Marina, a nearby area with similar wave exposure, nearshore bathymetry, and shoreline morphology, show that the upper reaches of the wash of the waves (i.e. wave runup) in a non-storm situation can be expected to reach that elevation at a statistical frequency of once per year. Wave overwash of this elevation will therefore occur on a less frequent basis during statistically more extreme wave events, including storms and hurricanes.

- Of the eighteen shoreline properties within the project's Tax Map, five have certified shorelines. The location of our client's wall is consistent with the location of the shorelines as certified on these five properties, and, as noted in the DEA, the wall is contiguous with existing walls on adjoining properties.

The applicant was cited for a SSV violation on the basis of City and County jurisdiction, and we have implemented procedures to address the violation as instructed by the Department of Planning and Permitting. This includes the submission of a shoreline certification survey and application for approval to the Board of Land and Natural Resources.

As a result of your concerns, we have gathered more information that will be part of the Final Environmental Assessment, and will clarify language in the EA to more precisely explain the reasonable location of the subject wall.

Thank you for your review and helpful comments.

J. Barry

James H. Barry
Coastal Engineer
Sea Engineering, Inc.

Cc: Ms. Carrie McCabe, City and County of Honolulu, Dept. of Planning and Permitting
Ms. Bernadine Barry, Applicant
Mr. William Espero, Hawaii State Senator, District 20

APPENDIX B

Miscellaneous Correspondence

1. USACE Regulatory Branch Jurisdictional Determination
2. Walter P. Thompson, Inc. Surveyors, Certified Shoreline Application and Correspondence

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

August 15, 2006

Regulatory Branch

File No. **POH-2006-288**

'06 AUG 21 P2:41

RECEIVED

CITY & COUNTY OF HONOLULU
DEPT OF PLANNING AND PERMITTING

Henry Eng
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Subject: Review and Comments for a Draft Environmental Assessment (DEA) for Shoreline Setback Variance at 91-447 Pupu Street, Ewa Beach, O'ahu, Hawaii (TMK: (1st) 9-1-30: 8)

Dear Mr. Eng:

This responds to your letter dated June 9, 2006 for review and comments on the above-referenced project. We have reviewed the information you provided under the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 404 of the Clean Water Act (CWA) (33 USC 1344) and Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403).

Based on the information you provided on behalf of the applicant, Ms. Bernadine Barry, we conclude the subject property consists entirely of uplands. Although the sea wall that bounds the parcel is adjacent to the Pacific Ocean, a jurisdictional water of the U.S., the proposed activities described within the DEA does not appear to involve the discharge of dredge or fill material into waters of the U.S., including the Pacific Ocean or to affect navigation; therefore, **a DA permit will not be required.**

If future plans include activities that will involve the placement of dredged or fill material into ocean (i.e. maintenance and repair of the sea wall), it is recommended that you contact our office to determine if a DA permit will be required.

If you have any questions regarding this jurisdictional determination, please contact Ms. Joy Anamizu by phone at 808-438-7023, by facsimile at 808-438-4060, or by e-mail at *joy.n.anamizu@usace.army.mil* and refer to the file number above.

Sincerely,

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

Copy Furnished:
Bernadine Barry, P.O. Box 96706, Ewa Beach, HI 96706

Post-it® Fax Note 7671	Date 8/23/6	# of pages ▶ 1
To James Barry	From MCCABE	
Co./Dept. Sea Engineering	Co. DPP	
Phone #	Phone # 527-5349	
Fax # 259-8143	Fax #	

WALTER P. THOMPSON, INC.
SURVEYING & MAPPING

MAY 16 2006

May 15, 2006

Ms. Bernadine Barry
P.O. Box 2455
Ewa Beach, HI 96706

Dear Ms. Barry:

Enclosed is a copy of the rejection letter, as expected, from the Department of Land & Natural Resources pertaining to the application for shoreline certification for Lot 899 of Land Court Application 242 at Puuloa, Ewa, Oahu, Hawaii as shown on Tax Map Key: 9-1-30: 08.

A copy of the letter has been sent to Mr. Berry of Sea Engineering.

When the wall has the proper permit, we will again submit the application for certification.

Very truly yours,
Walter P. Thompson, Inc.

James R. Thompson, LPLS
President

cc: Sea Eng. - Berry

720 IWILEI RD. • SUITE 425 • P.O. BOX 3351 • HONOLULU, HI 96801 • PHONE: (808) 536-2705 • FAX: (808) 599-4032

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 12, 2006

OA-9-1-30-08-THOMPSON-NA
LD-NAV

Walter P. Thompson, Inc.
James R. Thompson, LPLS
720 Iwilei Road, Suite 427
Honolulu, Hawaii 96801

Dear Mr. Thompson:

Subject: APPLICATION FOR SHORELINE CERTIFICATION NOT ACCEPTED
Applicant: Walter P. Thompson, Inc. - Owner: Bernadine Barry
Island: Oahu - District: Ewa Beach
TMK: (1) 9-1-030: 008

Please be informed that your application for certification of the shoreline for the subject property is not accepted for failure to submit all copies of documents supporting that the CRM Wall as shown on your submitted shoreline survey map, fronting the subject property, has been approved by appropriate governmental agencies or is exempt from such approval, as required by Chapter 13-222-7(b)(14) Hawaii Administrative Rule.

You should contact both the City and County of Honolulu, Department of Planning and Permitting located at 650 South King Street, Honolulu, Hawaii 96813 and the Office of Conservation and Coastal Lands located at 1151 Punchbowl Street, Room 131, Honolulu, Hawaii 96813 (808-587-0377), to determine whether the structure has been approved or is exempt.

Enclosed please find your shoreline application and shoreline survey map with photos. We have retained one copy of the shoreline survey map and one set of photos for our record.

If you have any questions, please feel free to contact me at (808) 587-0384. Thank you.

Sincerely,

NICHOLAS A. VACCARO
Land Agent

C: OCCL
ODLO

April 7, 2006

Mr. Peter Young, Chairperson
Dept. of Land & Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii 96813

Re: Shoreline Certification
Tax Map Key: 9-1-30: 08
Puuloa, Ewa,
Oahu, Hawaii

Dear Mr. Young:

This is to advise you that I am the owner of Lot 899 of Land Court Application 242.

I hereby give permission for personnel from your department to make an on-site inspection of the premises to obtain certification of the shoreline.

Please call **Bernadine Barry** at **398-1462** to make arrangements for the inspection.

Very truly yours,

Bernadine Barry

Bernadine ~~Barry~~

State of Hawaii
Department of Land and Natural Resources
Land Division

SHORELINE CERTIFICATION – APPLICATION FORM

The attached Application Form is for persons requesting a shoreline certification.

Please note the following important points:

1) Please refer to Chapter 13-222, Shoreline Certifications, Hawaii Administrative Rules, when applying for a shoreline certification. You can find these rules at our website: http://www.hawaii.gov/dlnr/lmd/rulesindex.html

2) A fee of $75 must accompany your application. This fee may be waived for federal, State and county projects. This fee will be returned only where the application is withdrawn prior to the Department initiating its review for completeness.

3) You will be responsible for reimbursement of any costs incurred by the State for processing of the shoreline certification, such as travel costs for site inspections. We will inform you of these costs when we notify you of the State Land Surveyor's proposed certification or rejection. You must remit payment prior to the Department releasing the signed shoreline maps.

4) The processing of shoreline certifications is subject to automatic approval. If the Department fails to render a decision on an application within 90 days from our acceptance of a completed application or the expiration of any extension granted, then the shoreline application shall be deemed certified. We will inform you of the commencement and completion dates.

5) If you find an encroachment during the shoreline survey, we recommend that you do not submit a shoreline application but rather contact the Land Division District Branch in the applicable county to resolve the encroachment. Shoreline applications will be rejected where encroachments are found.

6) Pursuant to §13-222-26, HAR, persons or agencies meeting certain criteria have standing to appeal any proposed certification or rejection within **20 days** of the OEQC publication. If you would like to file an appeal, please refer to the administrative rules and the Department's "Shoreline Certification – Notice of Appeal " form.

All applications must be complete to be considered for processing. Please submit your completed application form or direct questions to:

Department of Land and Natural Resources
Land Division
1151 Punchbowl Street, Room 220
Honolulu, Hawaii 96813
Phone: (808) 587-0446; Fax: (808) 587-0455

Please do NOT send your application to our neighbor island District Branches.

STATE OF HAWAII
DEPARTMENT OF LAND & NATURAL RESOURCES

SHORELINE CERTIFICATION
APPLICATION FORM

For DLNR use only:
Case file no.: _____
Date application recvd: _____
Date applic. complete: _____
Completion date (+90): _____
1st OEQC notice: _____
2nd OEQC notice: _____
Date appeals due (+20): _____
Date briefs due: _____
Date of decision (+60): _____

I. APPLICANT/AGENT
Applicant means the person submitting an application for shoreline certification.

Applicant name: WALTER P. THOMPSON, INC.
Applicant address: P.O. BOX 3351
HONOLULU, HI 96801
Phone numbers: (808) 536-2705 (Phone) (808) 599-4032 (Fax) jthompson@walterpthompson.com (E-mail)

II. PROPERTY OWNER
Property owner means the equitable or legal holder of interest in, or the lessee holding under a recorded lease for the property for which a shoreline certification is requested, or the authorized agent.

Owner name: BERNADINE BARRY
Owner address: P.O. BOX 2455
EWA BEACH, HI 96706
Signature: Bernadine Barry Date: APRIL 10, 2006

III. LOCATION AND ADDRESS

Island: (✓) Oahu ( ) Kauai ( ) Molokai ( ) Hawaii ( ) Maui ( ) Lanai

Town, District: EWA BEACH, PUULOA Tax Map Key: 9-1-30:08

Address: 91-447 Pupu Street
Ewa Beach, HI 96706

IV. PURPOSE

State the purpose for which the certification is being applied:

BUILDING PERMIT

V. CHECKLIST OF ENCLOSURES

(✓) At least three (3) sets of color photographs of the shoreline, in accordance with §13-222-8, HAR:

- (✓) Shoreline, as delineated on the map, is indicated on each photograph.
- (✓) Permanent markings on the ground or flaggings are indicated on the photographs.
- (✓) Each photograph is labeled by number or alphabet to coincide with the map showing the direction the photograph was taken.
- (✓) Photographs provide accurate perspectives of the shoreline in relation to permanent markings or other land features.
- (✓) Each photograph is marked with the date and time taken.

(✓) At least seven (7) maps of the shoreline, in accordance with §13-222-9, HAR:

- (✓) Maps are on whiteprints and are one of the following sizes (in inches): 8.5 x 13, 10 x 15, 13 x 23, 15 x 21, 21 x 32, 22 x 36, 24 x 36, 30 x 36, 36 x 42, 42 x 42-72.
- (✓) Maps are drawn using an engineer or architect scale, in units of feet. Scale is clearly noted on the map. No reduced or enlarged maps allowed.
- (✓) Maps are based on an actual field survey conducted within the prior 90 days.
- (✓) Maps have the licensed surveyor's seal and testament indicating the work was done by the surveyor or under the surveyor's supervision.
- (✓) Maps indicate true north pointing towards the top.
- (✓) Map title and reference to location include the original source of title and name of awardee, patentee, or grantee and the ili, ahupuaa, and the TMK and the property owner's name and address.
- (✓) Maps show all permanent identification marks established on the ground and all pertinent azimuths and distances.
- (✓) Maps indicate the type of shoreline being determined (i.e., vegetation line, debris line, upper reaches of the wash of waves, face of artificial structure, or combination).
- (✓) At least two (2) of the maps show the direction the photographs were taken and the point or shoreline depicted in the photographs.

(✓) Field survey was conducted on 4/3/06 (date of field survey) by DAVE KICAK (name of person who conducted field survey).

(✓) The licensed land surveyor who made or supervised the field survey was:

Name JAMES R. THOMPSON
Address P.O. BOX 3351, HONOLULU, HI 96801
Phone no. 536-2705

(✓) Application fee of $75 is enclosed.

(✓) Statement signed by property owner granting the State of Hawaii the right to enter the property.

( ) Statement(s) signed by applicable owners granting the State of Hawaii the right to enter land not owned by the property owner necessary for access.

( ) Copy of any federal, State or county enforcement or other legal action involving the subject shoreline.

( ) If shoreline is being located at the base of a manmade structure, copy of all documents supporting that the structure has been approved by the appropriate government agencies or is exempt from such approval.

VI. CERTIFICATION

I hereby certify that the statements and information contained in this application, including all attachments, are true and accurate to the best of my knowledge and understand that if any statements are shown to be false or misrepresented, this application may be rejected. Further, I understand that the Department may review any shoreline certification during its 12-month validity period and may rescind the certification where there is substantial misrepresentation or material fact in the application, whether intentional or unintentional, as determined by the State Land Surveyor or the Department.

JAMES R. THOMPSON
Printed Name

Date

X
Signature