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CITY AND COUNTY OF HONOLULU
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2004/ED-32 (ASK)

April 8, 2004

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

Dear Ms. Salmonson:

CHAPTER 343, HRS
Environmental Assessment (EA)/Determination
Finding of No Significant Impact

Recorded Owner		
Applicant/	:	Galt Speak VI, LLC
Agent	:	Paul M. Dold, AAL
Location	:	59-601 Ke Iki Road, Haleiwa, Hawaii
Tax Map Key	:	Portion of 5-9-3: 24
Request	:	Shoreline Setback Variance and Special Management Area Use Permit
Proposal	:	Construction of a Seawall
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 and four copies of the Final EA. If you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,

ERIC G. CRISPIN, AIA
Director of Planning
and Permitting

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2004-04-23 FONSI
HALEIWA SEAWALL RECONSTRUCTION

Final
Environmental Assessment and
Coastal Engineering Evaluation for
TMK: 5-9-03:24 Lot 8
(Paul M. Dold)

March 2004

Prepared for:

Paul M. Dold
59-601 Ke Iki Road
Haleiwa, Hawaii 96712

Submitted by:

Sea Engineering, Inc.
Makai Research Pier
Waimanalo, Hawaii 96795

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59-601 Ke Iki Road, Haleiwa, Oahu

B. TMK, Applicant and Recorded Fee Owner

TMK: 5-9-03-24

Applicant: Paul M. Dold
59-601 Ke Iki Road, Haleiwa, Hawaii 96712

Recorded Fee Owner: Galt Speak VI

C. Agent: Paul M. Dold

D. Lot Area: 36,155 sq. ft.

E. Zoning: R5 Residential

2.0 LOCATION AND GENERAL DESCRIPTION OF THE PROPOSED PROJECT

This draft environmental assessment and coastal engineering evaluation has been prepared to accompany a Shoreline Setback Variance application (SSV) to the City and County of Honolulu, Department of Planning and Permitting (DPP), for a shoreline lot at Pupukea on the north shore of Oahu. The project site is located at 59-601 Ke Iki Road, less than a mile northeast of Waimea Bay (Figures 1, 2 and 3). The project site location is shown in Figure 1. Figure 2 is an aerial photograph of the site, and Figure 3 is a schematic showing the physical characteristics of the area. The shoreline in front of the project is part of a public park, Pupukea Beach Park, which includes the popular diving and swimming sites of Three Tables and Sharks' Cove. Ke Iki Road runs for about 2,200 ft parallel to and on the makai, or ocean, side of the main public artery, Kamehameha Highway. It services a group of about 60 homes that are located on the coastal promontory between the beach and the highway. The property is located near the southwest, or Haleiwa side of the development area. The local tax map key is shown in Figure 4. The lot, TMK5-9-03-24, lot 8, is CPR of five units, numbered 8A through 8E. Units 8D and 8E are the shorefront units on the property.

The coast at the project site is notable for a very prominent emergent coralline limestone shelf, known as Kulaloa Point, that is 800 feet wide directly in front of the property. The shelf decreases in width to the southwest where it forms the protected lagoon of Shark's Cove. The shelf abruptly ends northeast of the property, and the shoreline transitions into a dynamic sandy beach.

At one time an 11-foot high seawall (note: top wall elevation is about +15 feet MSL) extended continuously for about 300 feet along this shoreline (Figures 5 and 6). An 85-foot section of the wall directly in front of the applicant's property and the adjacent property to the north (TMK 5-9-03-25, lot 9) fell over on to the property in 1992. Figures 5 and 6 show the scale of the wall and the nature of the collapse. Various other non-engineered shore protection in the form of armor stone and other rip-rap are continuous with and extend beyond this wall on either side. Portions of the wall that have not collapsed are considered a public hazard, and signs on the wall warn persons to stay clear.

The seawall was reportedly built after World War II in response to shoreline alteration such as sand mining or reef rock mining that occurred during the war. However, specifics concerning these actions are not well known.

At first glance this shoreline would appear to be well protected from wave onslaught and coastal erosion. After all, the property is fronted by 800 feet of high relief limestone. However, this part of the North Shore is considered a high hazard area due in part to the extreme wave climate, with breaking wave heights over 30 ft not uncommon. Extreme swell events have demolished homes in the vicinity and caused human injury. The 15-foot high elevation of the seawall is periodically over-topped by the most extreme winter wave conditions, and where the wall has fallen the soil is being progressively eroded.

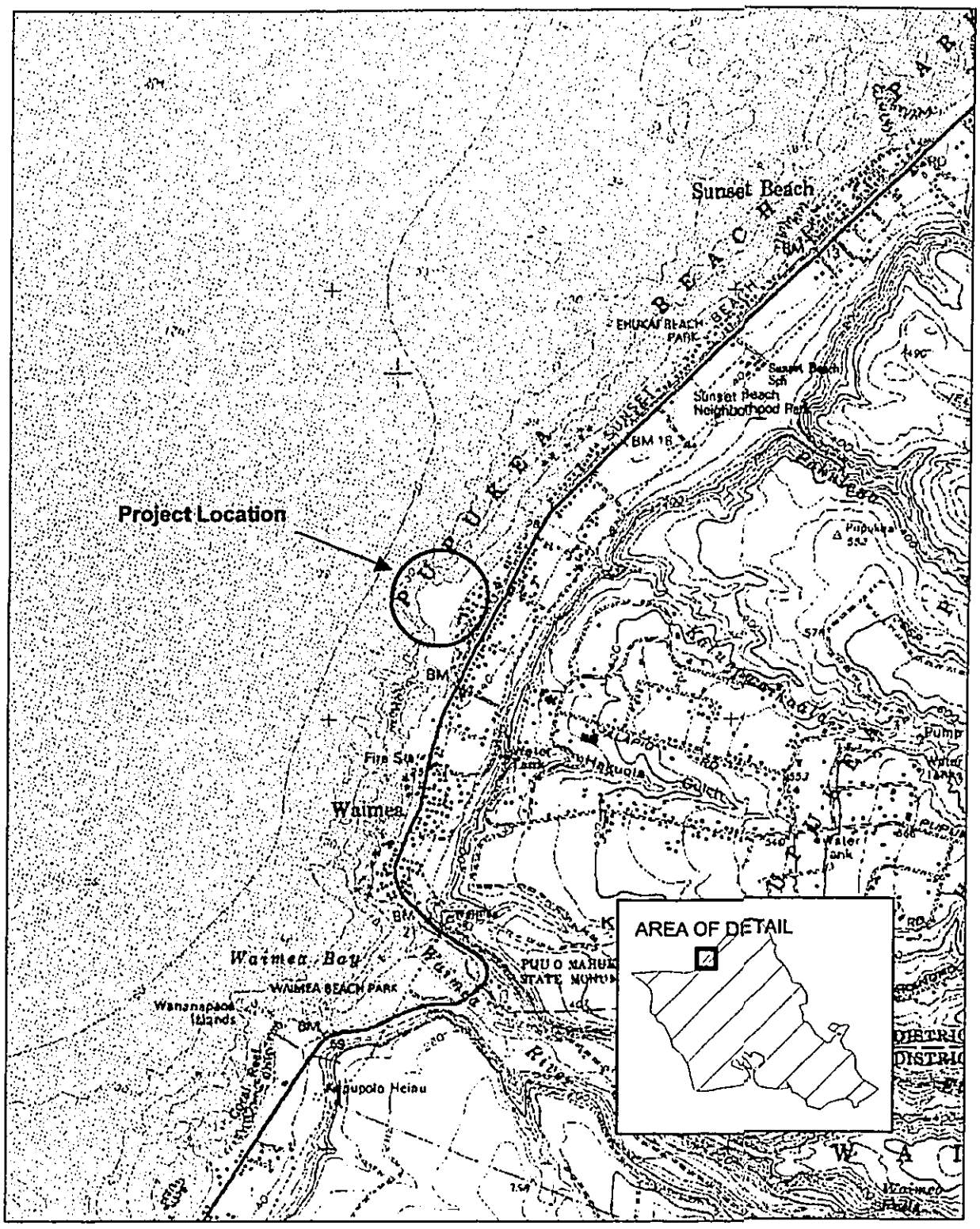

Figure 1. Project Location

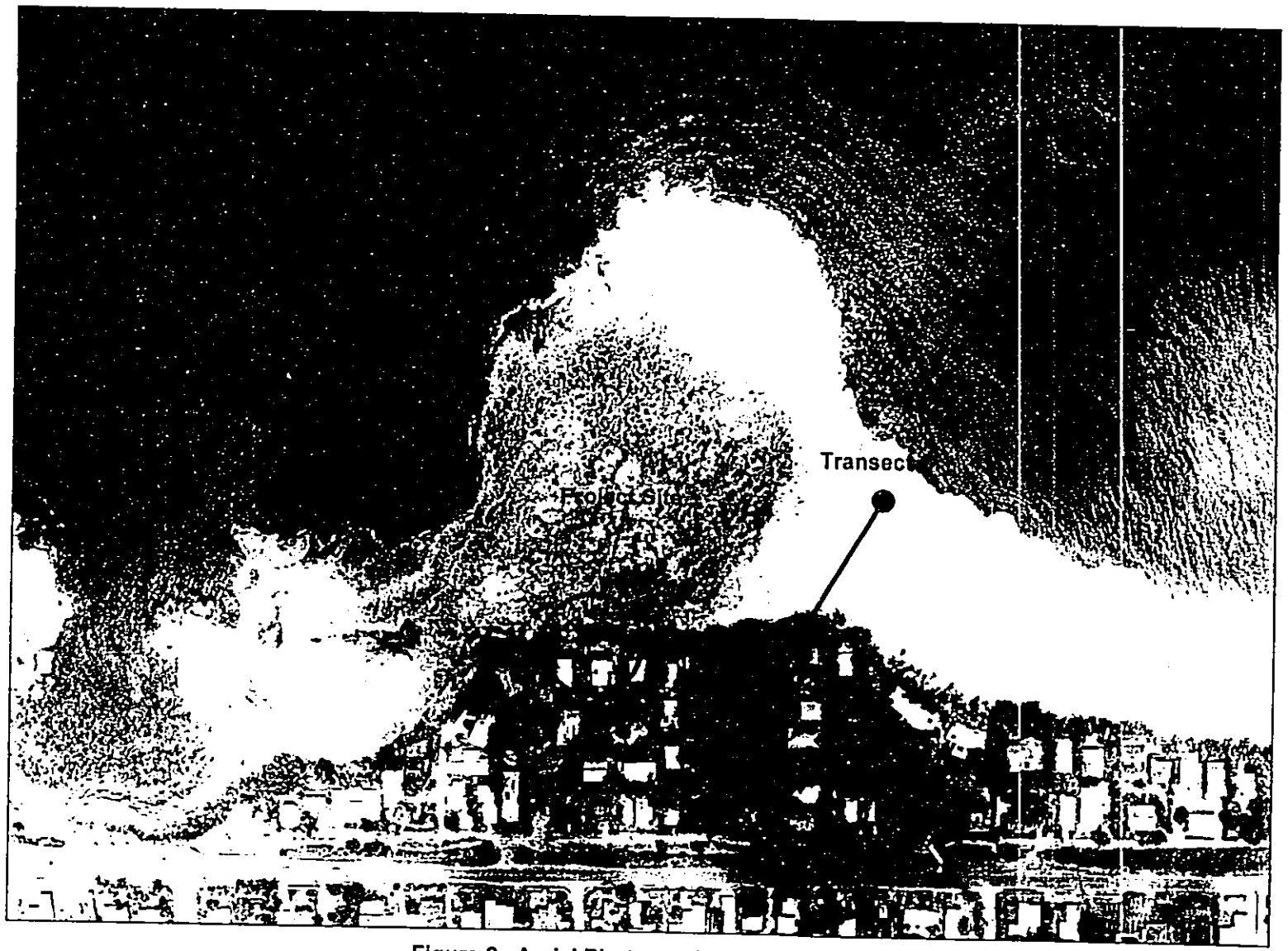

Figure 2. Aerial Photograph of Project S
(by Air Survey Hawaii)

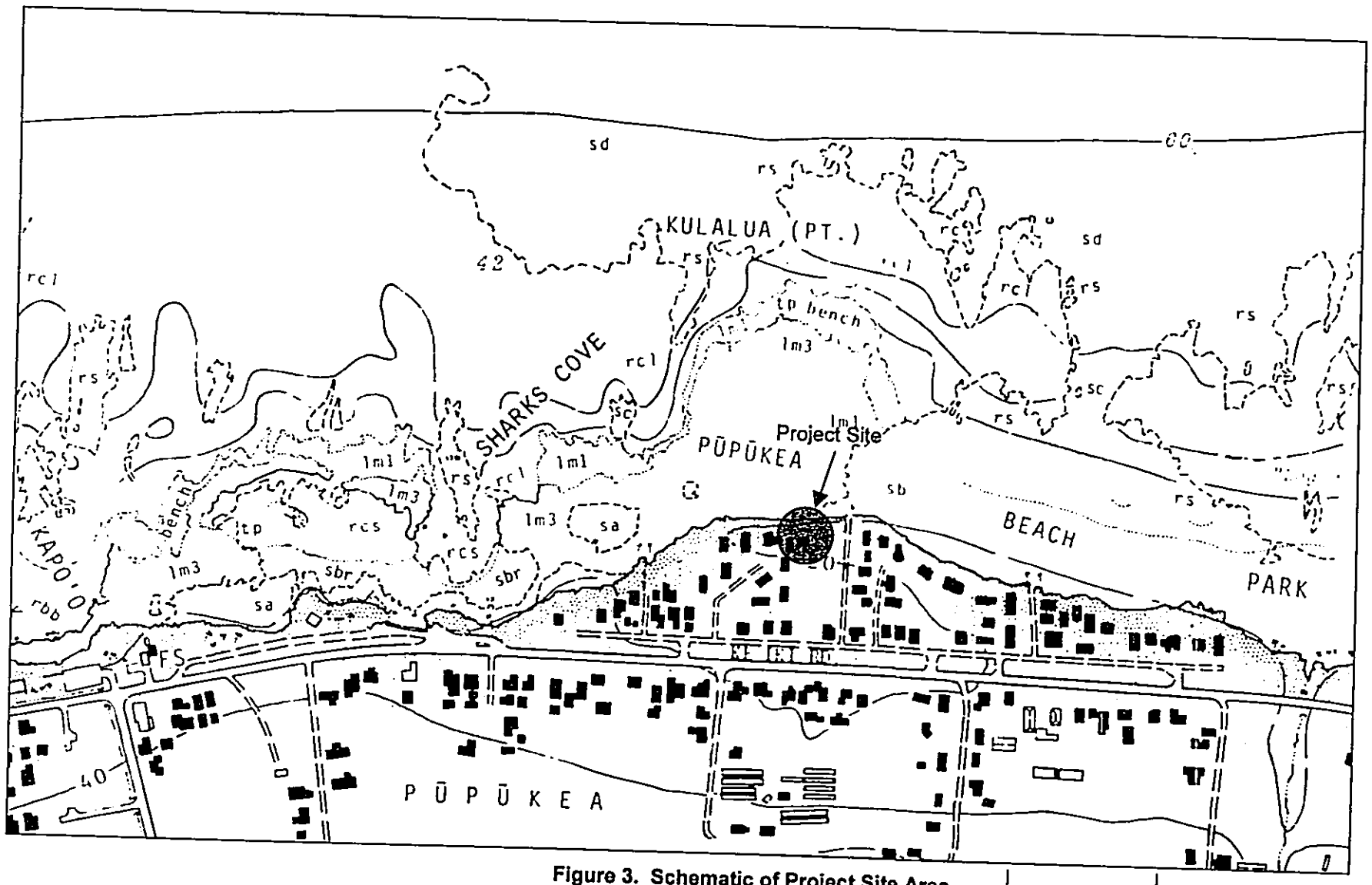

Figure 3. Schematic of Project Site Area
(AECOS, 1981)

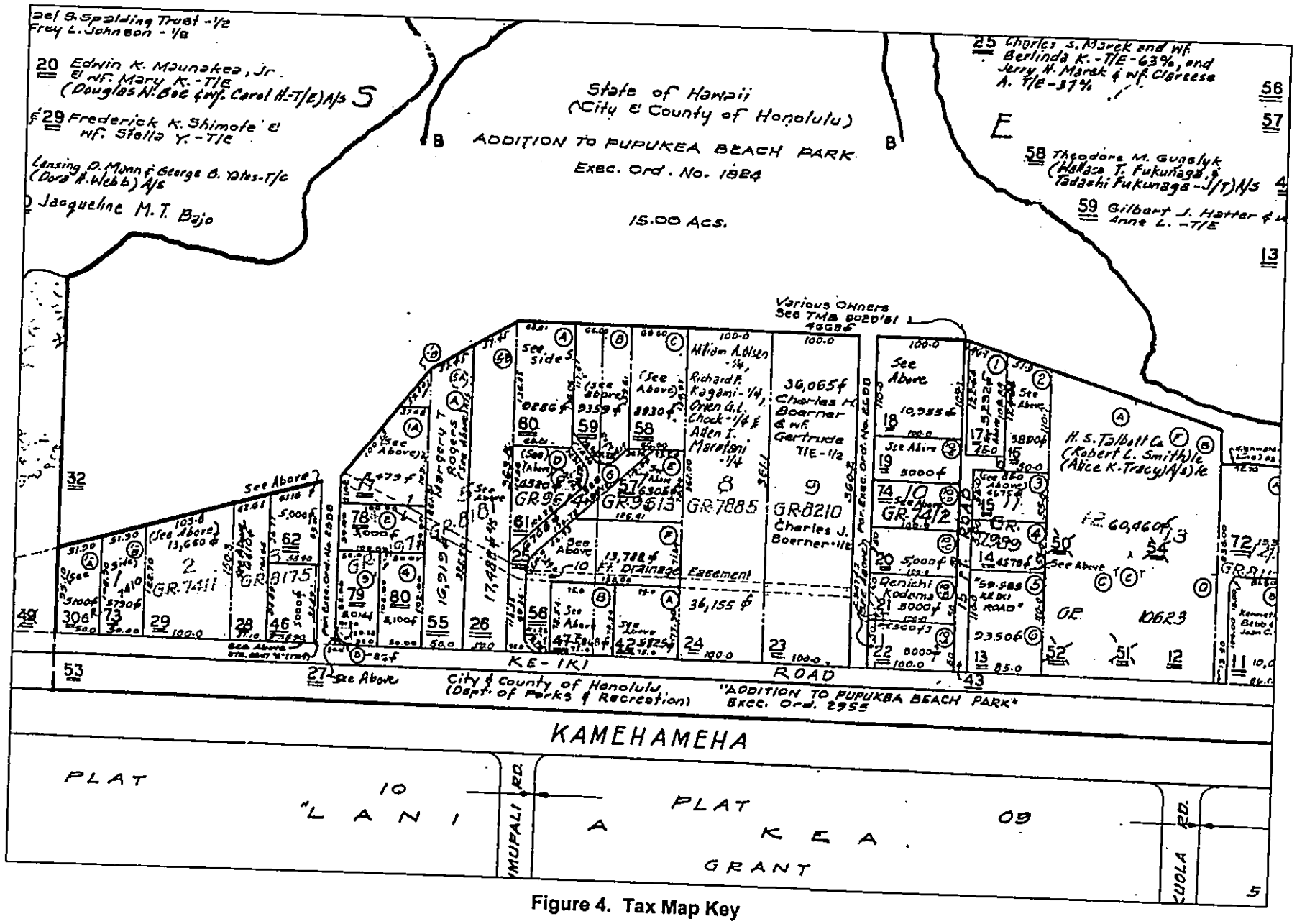

Figure 4. Tax Map Key

Figure 5. Collapsed wall at 59-601 Ke Iki Road.

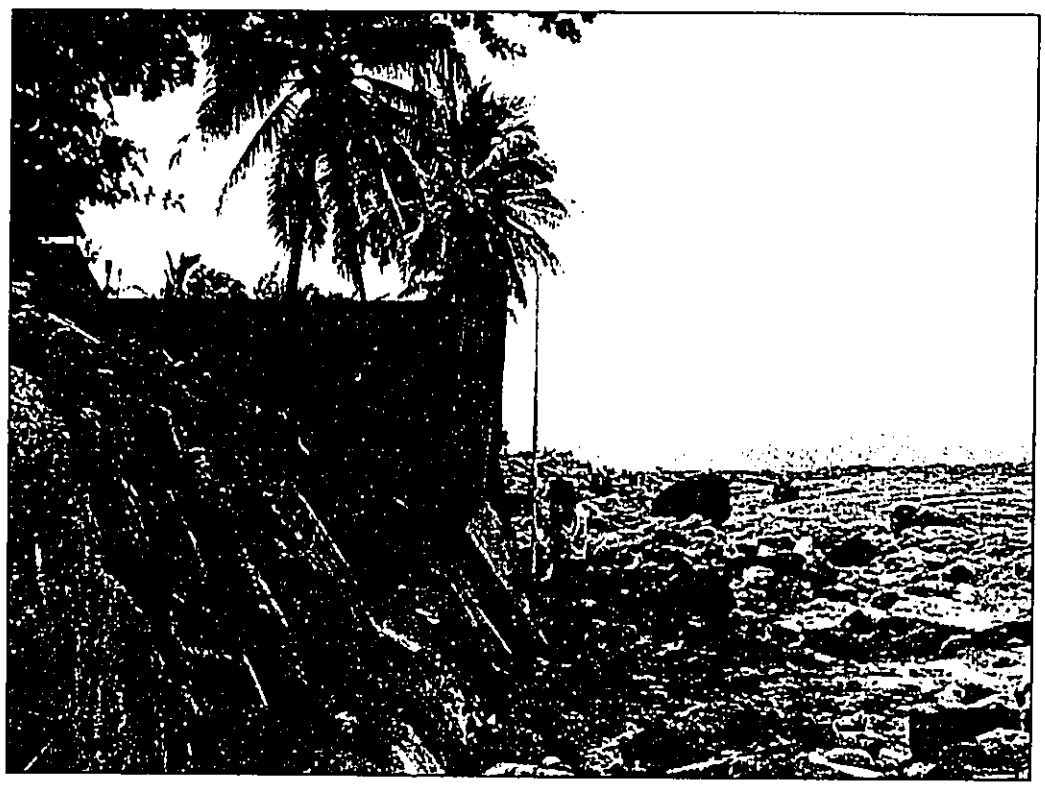

Figure 6. Collapsed wall at 59-601 Ke Iki Rd. Survey rod in Figure 6 is 12.5 ft. high.

In order to protect his property and avoid human injury to both the inhabitants of the property, and passers-by on the beach, the applicant proposes to re-build the portions of the wall that have fallen, and reinforce those sections that are still standing. The state certified shoreline is located on the property line at the seaward edge of the wall foundation. Figure 7 is a copy of the shoreline survey. Seawall repair and construction will take place within the City and County of Honolulu shoreline setback zone. A shoreline setback variance (SSV) is therefore required for the action.

3.0 ENVIRONMENTAL SETTING

3.1 General Description

The project site is a relatively sparsely developed rural residential development of about 60 homes on a coastal promontory located less than a mile northeast of Waimea Bay (Figure 2). The local Tax Map Key is shown in Figure 6. The shoreline in front of the property is part of Pupukea Beach Park, which includes the popular diving and swimming sites of Three Tables and Sharks' Cove. The project area is characterized by large lots that are long relative to their width (Figure 6). Lot 8, which includes the applicant's property, is 100 feet wide at the shoreline by 360 feet in length. The lot is a CPR of five units with a common driveway. Land use designation by the State is Urban, and City and County of Honolulu zoning is R5 residential. There are two nearby public access routes, 100 feet northeast and 400 feet southwest of the applicant's property.

The shoreline in the project vicinity is characterized primarily by a rugged, high relief 800-foot wide emergent limestone shelf known as Kulalua Point that fronts the property. This shelf forms a headland that marks the end of an uninterrupted reach of sandy beach beginning at Sunset Point, about 2 miles to the northeast. A small finger of sand extends from the beach and fills a narrow (40 feet) low-lying drainage depression, or moat, that lies directly in front of the property, between the property and the start of the limestone shelf.

3.2 Oceanographic Conditions

Wind – The prevailing winds are the northeast tradewinds, which blow side-onshore in the project area. The tradewinds are typically present 80 percent of the time during the summer season from April to November, with wind speeds of 10 to 20 mph. During the winter months there is a general weakening of the tradewind system and the occurrence of southerly and westerly winds (Kona winds) due to both frontal systems passing through the islands and local low-pressure systems.

Waves – The general Hawaiian wave climate can be described by four primary wave types: (1) northeast tradewind seas, (2) North Pacific swell, (3) South Pacific swell, and (4) southerly and westerly (Kona) storm waves. The project site is completely sheltered from south swell and most Kona storm waves by the island of Oahu, is obliquely exposed to tradewind swell, and is directly exposed to north swell.

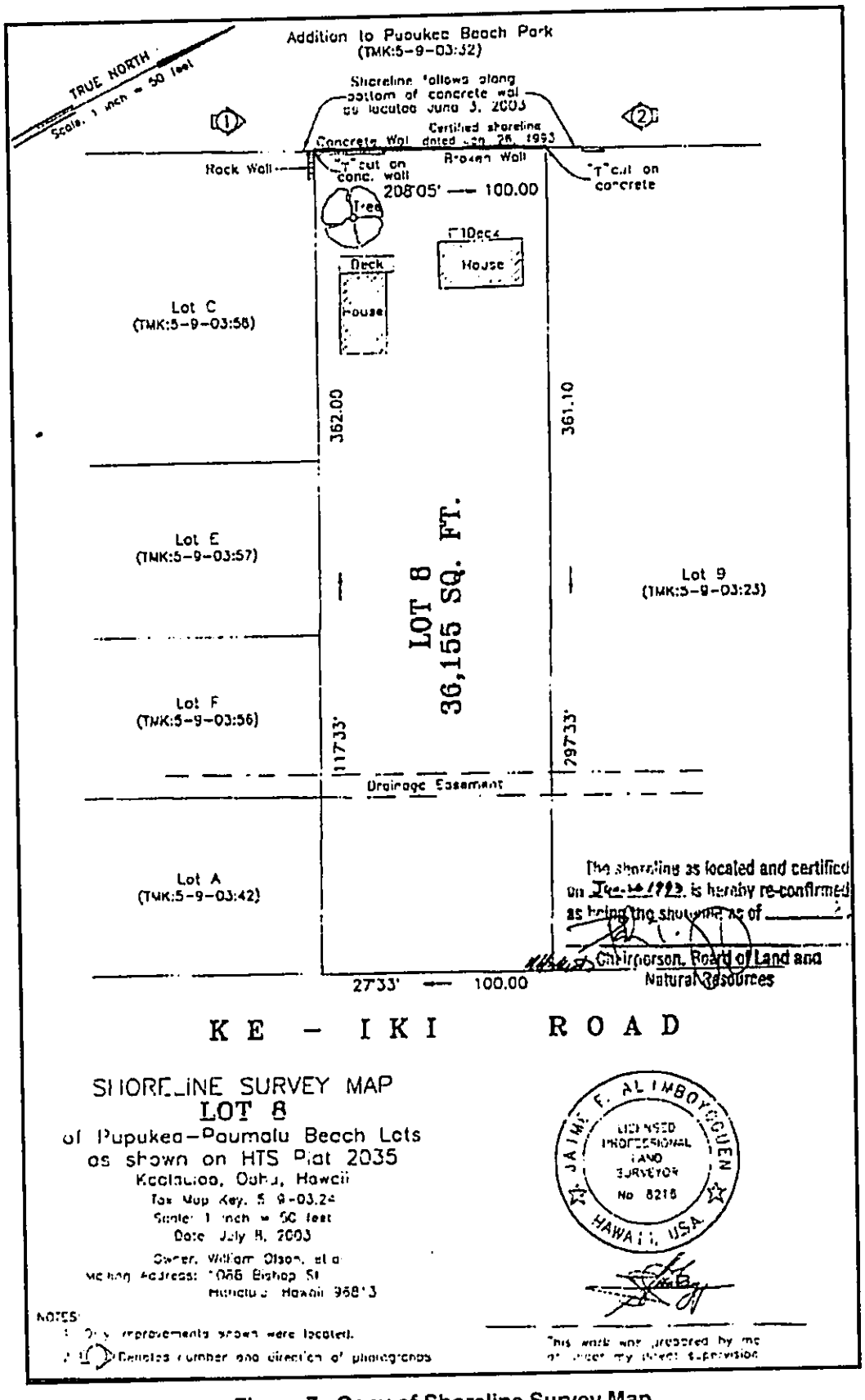

Figure 7. Copy of Shoreline Survey Map

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. The north shore is mostly protected from direct exposure to these waves. Tradewind waves that affect the project site are predominately small, short-period, locally generated seas from a northerly direction. However, because they have a high angle of incidence to the shoreline, they are an important mechanism for sand transport along the shoreline.

North Pacific swell is produced by severe winter storms in the Aleutian area of the North Pacific, and by mid-latitude low-pressure systems. North swell may arrive in Hawaiian waters throughout the year, but is largest and most frequent during the winter months of October through March. North swell approaches from the west through north, and occasionally from east of north, with periods of 12 to 20 seconds, and typical deepwater heights of 5 to 10 feet. However, deepwater wave heights of over 20 feet (with breaking wave heights of about 30 feet) are not uncommon.

SEI calculated the return period of extreme wave heights for northwest shorelines using deepwater wave buoy data collected between 1982 and 1991 at the Pacific Missile Range Facility on Kauai, an area with similar wave exposure to the north shore. The frequency of occurrence, shown in Table 3.1, was calculated using Gumbels' first asymptotic distribution for extreme values.

Table 3.1. Return Period Deepwater Wave Heights

Return Period (Years)	Significant Wave Height (Ft.)
1	15.9
2	17.9
5	20.5
10	22.5
25	25.2
50	27.2
100	29.2

The wave height parameter used in this table, and commonly used for wave height reporting, is the *significant wave height*, which is defined as the average of the highest 1/3 of the wave heights for a given wave field. The maximum wave height will generally be over 1.5 times the significant wave height. So, for example, in a 25-year return period wave field, one could expect at least one wave to reach about 38 feet in height.

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. SEI calculated a refraction coefficient of 1.4 for the Waimea area for large hurricane waves approaching from the west, indicating a general convergence and wave height increase for large waves in the project area.

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.

Tide – 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 Haleiwa/Waialua Bay area by the National Ocean Service:

Tide Level	Feet (MSL)
Mean Higher High Water	0.9
Mean Sea Level	0.0 (Reference Datum)
Mean Lower Low Water	-0.7

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 20 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. At Waimea Bay, just southwest of the project site, this would result in waves 69 feet in height, breaking in a water depth of 54 feet. The resulting run-up at the Waimea shoreline would be to the +14-foot elevation.

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 about a foot above the tide level. However, during extreme events, the still water level rise can be significantly greater. The Hurricane Vulnerability study reports that during the model hurricane storm surge and wave setup at Waimea would be 0.7 and 6.2 feet, respectively, resulting in a water level rise of 6.9 feet above the normal tide level. The rise in water level due to wave setup alone is typically 10 percent to 20 percent of the breaking wave height offshore. So, for example, using a breaking wave height of 30 feet that would be expected occasionally on the North Shore, the stillwater rise might be between 3 and 6 feet. These conditions would place the emergent limestone shelf awash and allow direct wave attack at the project location.

Tsunamis and Flood Insurance Rate Map Designation – The Waimea Bay area was inundated by the tsunamis of 1946, 1952, 1957, 1960, and 1964 with flood heights of 14, 7, 22, 11, and 16 feet, respectively (Loomis, 1976). However, the project site is somewhat protected from tsunamis by the wide, rough limestone shelf on the shoreline. The area FIRM map is shown in Figure 8 (FEMA, 1987), and shows the flood hazard zone AE boundary to be 500 ft seaward of Ke Iki Road. The project site is therefore not a flood hazard area. The elevation of the berm crest at the project site is 16 feet.

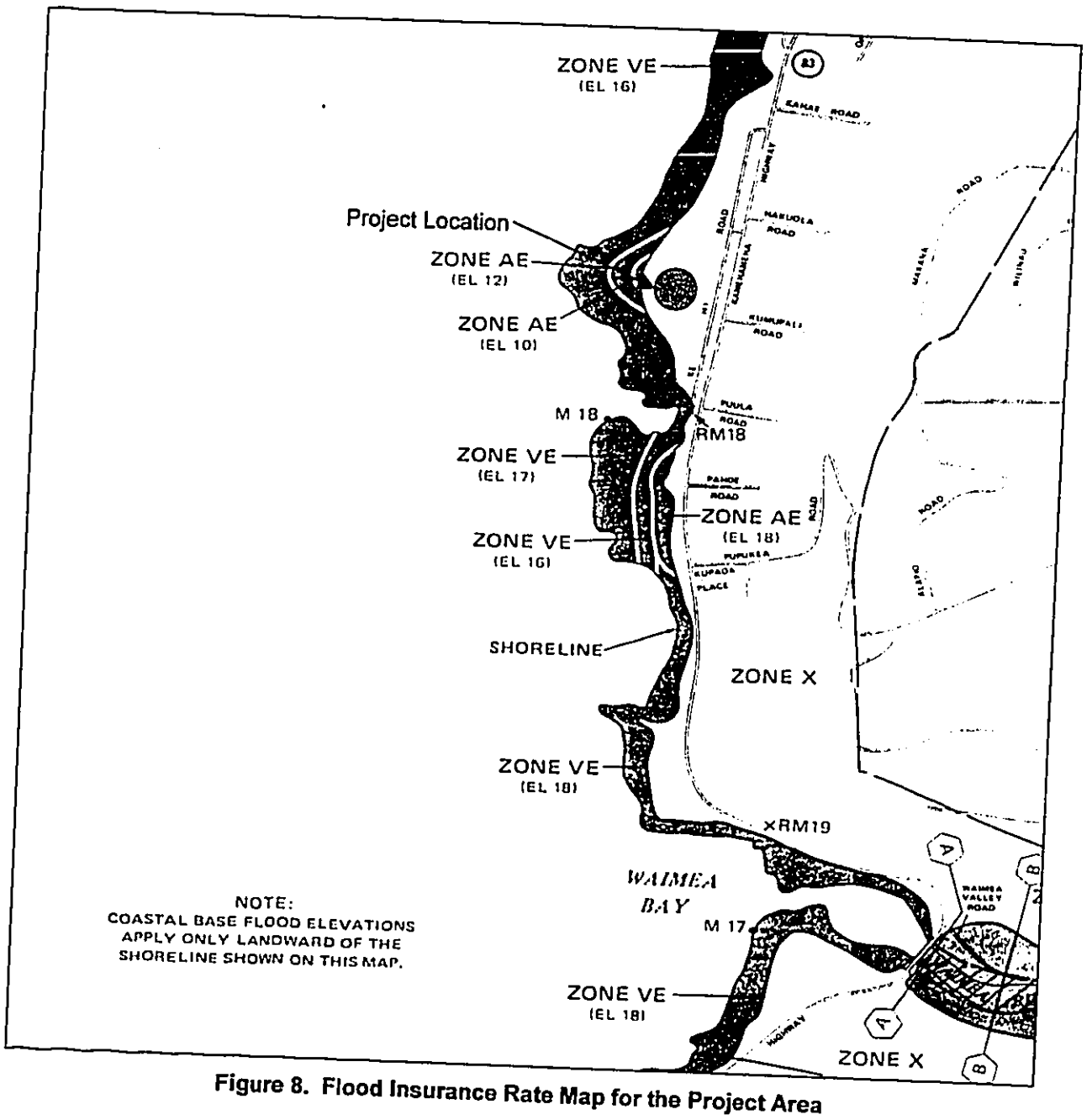

Figure 8. Flood Insurance Rate Map for the Project Area

3.3 Marine Flora and Fauna

The following discussion of marine flora and fauna in the vicinity of Pupukea Beach Park is taken from the *Hawaii Coral Reef Inventory, Island of Oahu* (AECOS, 1979).

" Submarine Caves off Pupukea Beach Park – In caves which occur in limestone formations off of Shark's Cove are found uncommon species of corals such as *Leptoseriis incrustans*, *Tubastrea coccinea*, and *Balanophyllia* sp. Some coralline algae also occur in the caves. A variety of sponges are abundant. The bryozoan known as 'lace coral,' *Triphylozoon hirsutum*, the hydroid, *hispidus*, spiny lobster, *Panulirus* sp., and hermit crabs are common in the caves, including *Myripristis* sp., *Adioryx xanthrerythrus*, and three species of cardinal fish. *Kuhlia sandvicensis* is common in shallower caves."

"Deep Zone Off Pupukea Beach Park – The deep zone (depths greater than 30 feet or 10 meters) is characterized by low relief and sparse cover by corals (2%) and coralline algae. Common algae are *Halimeda dicoidea, Amansia glomerata, Galaxaura* sp., and *Laurencia* sp. The fish fauna at depths greater than 50 feet (15 meters) is lower in abundance, but not diversity, than that found nearer to shore. In various areas offshore the number of species recorded ranges between 31 and 60. Most common are two damselfish, *Chromis ovalis* and *C. verator. Chaetodon miliaris, Parupeneus multifaciatus, Acanthurus nigrofuscus*, and *Stegastes fasciolatus* are common."

3.4 Water Quality

Nearshore waters are designated "Class A" open coastal waters (HAR 11-54-6). Houses near the shoreline are served by cesspools, and dissolved components may reach the ocean rapidly as a result of the porous soils. Nearshore and offshore natural springs and seeps are common. However, flushing and dilution of coastal waters is rapid. Normal underwater visibility is 40 to 50 feet (AECOS 1979).

3.5 Coastal Use

Pupukea Beach Park is heavily used by swimmers, divers, and fishermen. Sharks' Cove and Three Tables are used for dive charters and SCUBA classes, and advanced classes visit the caves off Kulaloa Point. There are no surf breaks in the immediate vicinity of the park, however, the surf break called "Log Cabins" lies off the sand beach between Kulalua Point and Banzai Rocks to the northeast (Clark, 1977).

4.0 COASTAL ENGINEERING EVALUATION

4.1 Shoreline Type and Characteristics

The property is located on the north shore of Oahu, a location known worldwide for the size and quality of winter waves. The orientation of the shoreline and the proximity to winter storm systems of the North Pacific ocean work together to bring very large waves to this shoreline. Breaking wave heights in excess of 30 ft are not uncommon. In contrast, summer conditions are

usually benign, with low wave heights produced by the oblique incidence of tradewind waves. A sandy beach extends nearly uninterrupted over 2 miles north from the edge of the emergent limestone shelf to Sunset Point. Figure 9 shows the sand beach stretching northeast from the shelf at the project site.

The sand beaches of the north shore have unusual characteristics due to the wave climate:

- The beach is extremely dynamic and can change from over 200 ft in width during the summer to 50 ft or less in the winter.
- The beach crest consists of an unusually high berm. The berm is 16 ft in elevation at the project site, and reaches a maximum of about 25 ft at Sunset Beach.

The beach crest is formed during the highest wave conditions as the beach adjusts in scale to absorb the high wave energy. When wave heights subside, the crest remains as a relict feature, the beach berm. The berm elevation is an indication of run-up heights during extreme but infrequent wave conditions. In a run-up study conducted for Sunset Beach, SEI found that the height of the beach storm berm roughly coincided with the 25-year run-up elevation. Although it is periodically over-topped, the storm berm on the north shore is valuable ocean front real estate that has been developed for most of its length. Some short reaches of the highway are also built on the berm crest. Figure 10 is a profile taken at the project site showing the berm as the dominant topographic feature.

The project site is unique because of the emergent limestone shelf which is approximately 4 ft above mean sea level on average, and about 800 feet in width. The shelf is extremely rugged, with a nominal relief of 3 ft, with some areas of relief to 5 feet or greater. Figure 11 shows tidepools at the edge of the shelf at the water line. A few large limestone boulders 8 to 10 ft in diameter are perched on this shelf, and can be seen from the highway (Figure 12). These were apparently ripped up from the edge of the shelf and deposited during extreme wave conditions. During very large north swells, the whole shelf may be awash with waves. That this is not a frequent occurrence is shown by bits and pieces of vegetation growing opportunistically on the shelf. Large caves exist within the limestone mass that are accessed by divers from the water.

At the ocean side of the shelf, the rocky shore drops quickly in a series of staircase escarpments to about the 20-foot depth, and then slopes to deeper water offshore. Having deep water so close to the shore is the reason that very large waves break directly on the shelf. On a normal sloping beach, wave heights are limited by the water depth, so that large waves will break far offshore and become increasingly smaller as they approach the shore. At the edge of the shelf, with a relatively steep escarpment to deep water, smaller wave will tend to reflect back to sea off the limestone escarpment but large waves will shoal and break on or just offshore of the shelf.

Between the property and the shelf exists a narrow swale that forms a kind of moat in front of the damaged seawall (see profile, Figure 12). It is likely that this is a relict drainage feature that was cut into the limestone. This drainage feature defines the edge of the emergent limestone shelf as it curves seaward to join with the sandy beach northeast of the site. It is likely that wave uprush into this moat occurs during high wave conditions more frequently than across the limestone shelf.

Figure 9. Sandy beach extending northeast from the rock shelf at the project site.

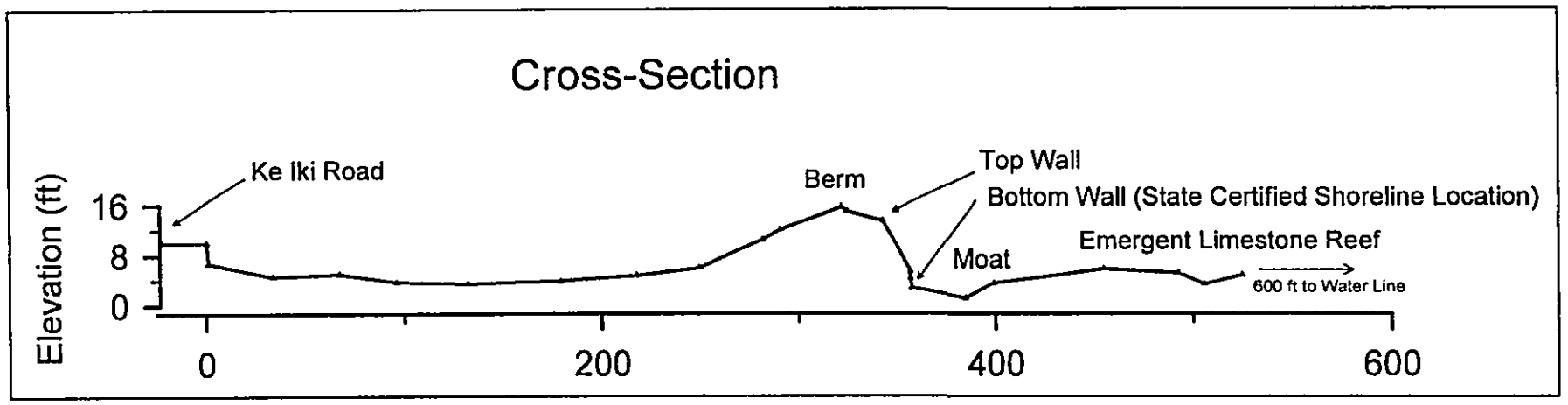

Figure 10. Profile

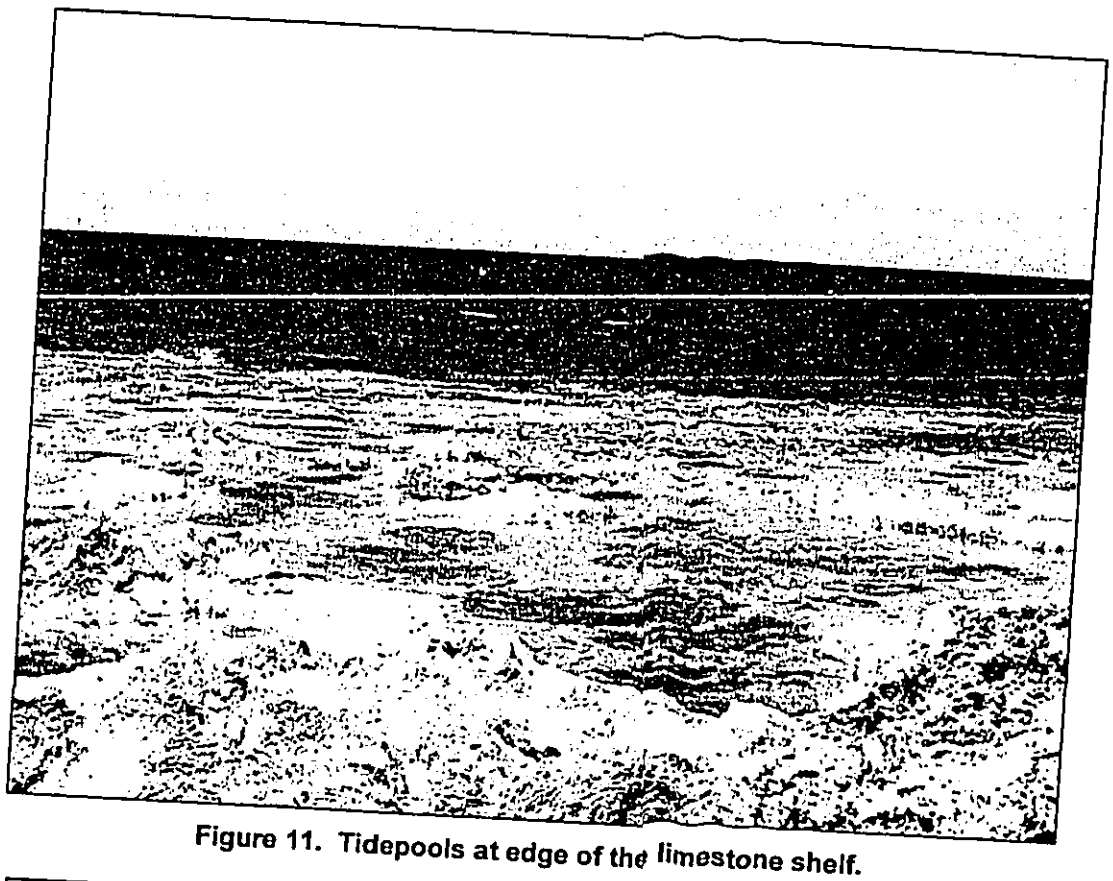

Figure 11. Tidepools at edge of the limestone shelf.

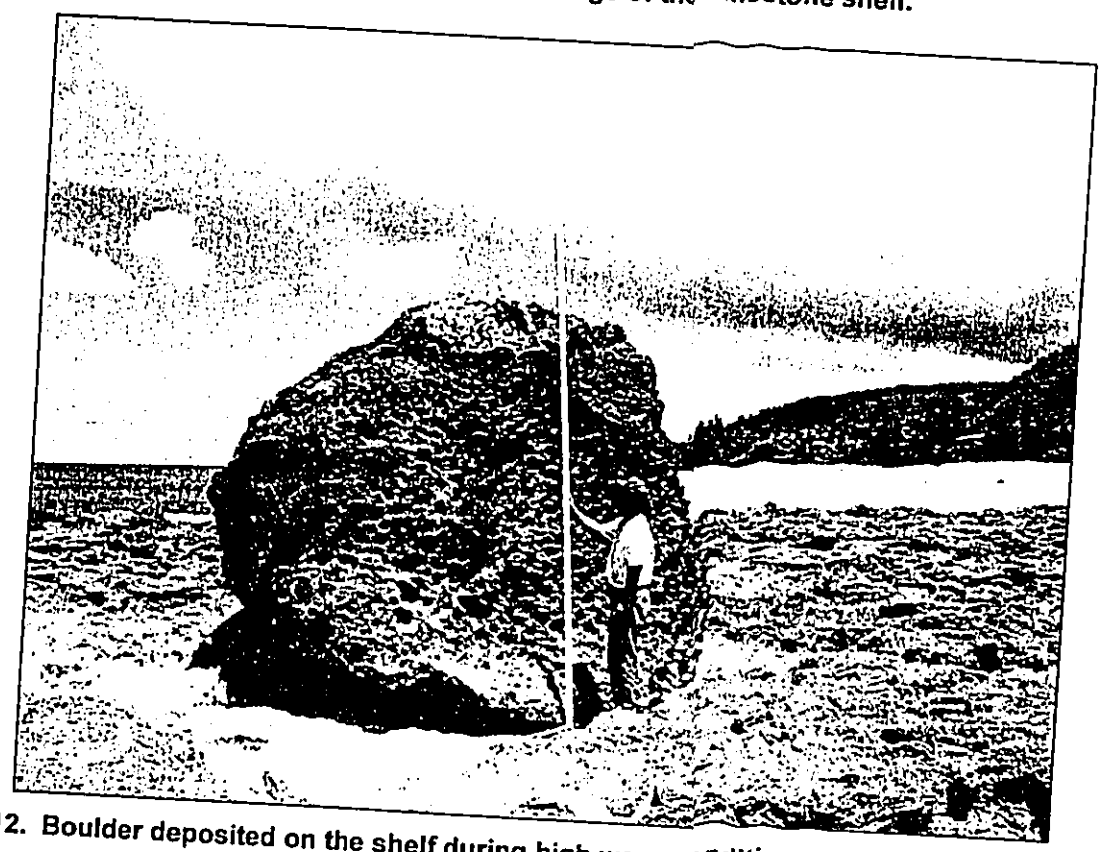

Figure 12. Boulder deposited on the shelf during high wave conditions. Rod height is 12.5 feet.

The limestone shelf of Kulalua Point forms a headland that defines the end of a long reach of sand beach that extends essentially uninterrupted for at least 2 miles to Sunset Point. The littoral cell, or region in which active sediment transport occurs probably extends at least as far as Rocky Point, a distance of 1.4 miles. Tremendous volumes of sand are moved up and down this beach in response to varying wave conditions, and beach width changes of 100 feet or more are not unusual.

4.2 Existing Shoreline Structures

Seawalls adjoin the applicant's lot in both directions. To the northeast, the seawall begins about 15 feet into the adjoining property (lot 9) and extends for about 100 feet, terminating at an access stairway. Non-engineered armor stone shore protection begins on the other side of the stairway. Similarly, the seawall extends for about 140 feet southwest of the applicant's property and then transitions into non-engineered armor stone and rip-rap. Figure 13 is a panorama showing the fallen wall and shore protection on adjoining properties.

4.3 Shoreline History

Hwang (1981) used historical aerial photograph analysis to assess shoreline change around Oahu, based on movement of the vegetation line between 1949 and 1979. Two transects were measured on the sand beach immediately northeast of the project site. Transect 1 is about 300 feet northeast of the property and Transect 2 is about 1000 feet northeast. The location of Transect 1 is shown on the aerial photograph, Figure 2. The beach appeared to be relatively stable between 1949 and 1979, but the extreme wave event of December, 1969 caused 18 feet of erosion of the vegetation line at transect 2. Only minor erosion occurred between 1971 and 1979.

Sea Engineering, Inc. (1988) updated Hwang's work through 1988 for the City and County Department of Land Utilization (now Department of Planning and Permitting). Erosion accelerated somewhat between 1979 and 1988, claiming another 9 feet. Between 1949 and 1988, a total of 8 feet of vegetation line erosion occurred at Transect 1 and 16 feet of erosion occurred at Transect 2. These figures are not alarming, given the dynamic nature of the shoreline on the north shore, and the shoreline is considered relatively stable.

4.4 Coastal Processes and Sand Transport

Kulalua Point forms a headland that marks the end of an uninterrupted reach of sandy beach that begins at Sunset Point, about 2 miles to the northeast. Tremendous volumes of sand are moved up and down this beach in response to varying wave conditions. Profiles measured by the USGS at Sunset and Waimea beaches have recorded seasonal variations in beach width up to 100 feet (Gibbs *et al*, 2001). The dynamics of the sand movement occur on a very large scale, and have not been studied in detail. Sand moves in both the cross-shore (inshore and offshore) directions, and alongshore.

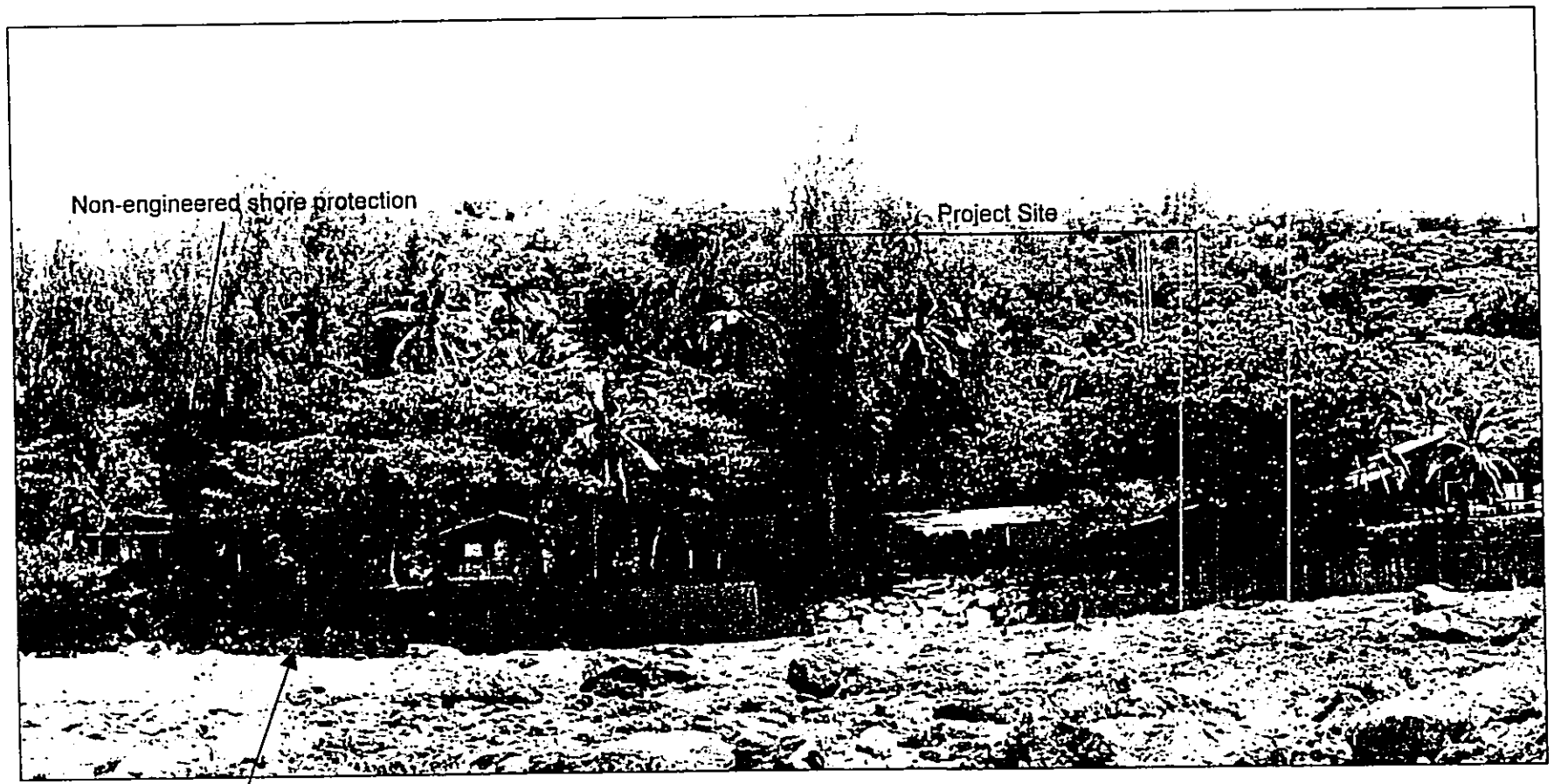

Figure 13. Panoramic view of the project site showing adjoining shore protection.

Cross-shore movement is primarily related to differences in wave height. As wave heights increase or decrease, the beach will tend to be scaled accordingly. During a large wave event at the peak of the winter wave season, in some places most of the beach sand will have been transported offshore, and waves will run-up directly on the storm berm. As the waves subside, the sand will migrate back. A local resident has stated that the beach in this area has never completely eroded within the last 30 years, although the storm berm has over-topped during extreme conditions.

Changes in wave direction will cause sand to move in the longshore direction. During the summer months, when small tradewind waves from the north constitute the prevailing wave climate, the oblique incidence will cause sand to migrate southwest and pile-up on the northeast side of retention features such as rocks and headlands. During the winter months the wave directions are primarily from the west and northwest, and the sand transport will reverse direction, with beaches southwest of retention features tending to increase in size.

Sand transport occurs within limits that are known as littoral cells. These are often geographic features, such as headlands or points, but can also be related, in a more complex way, to offshore bathymetry, incident wave conditions, and changes in coastline orientation. The emergent shelf of Kulalua Point acts as the southwest end of the littoral cell along this reach of the North Shore. It is not clear where the northeast termination is, and it likely may shift with different wave conditions.

Fronted by the wide limestone shelf, the project site is removed from active beach processes, except for minor sand fill in the drainage moat between the seawall and the shelf.

4.5 Coastal Hazards

The coast at the project site is directly exposed to large winter season north swell generated by North Pacific storms. The area could also be subject to tsunami inundation and possible hurricane generated waves and high water levels.

North swell can occur any time during the year, but is largest and most frequent during the winter months of October through March. North swell can approach from the northwest through northeast, but typically the most frequent large swell is from the northwest. The reach of the North Shore directly northeast of the project site has a history of property damage and human injury due to extreme wave events that over-top the storm berm and inundate homes. During the wave event of December, 1969, the Ke Iki Road area was especially hard hit. Two houses were swept off their foundations, and a total of 14 homes were demolished. The *Atlas of Natural Hazards in the Hawaii Coastal Zone* (2002), a USGS publication states:

> "The Overall Hazard Assessment (OHA) for the Waimea Coast is moderately high, which is primarily a result of the susceptibility to high wave energy and stream flooding... Stream flooding, especially in flash flood prone Waimea River Valley, historically has been significant, and high wave events annually overwash the coastal

road and cause damage to coastal property. For these reasons, the hazard due to tsunami, stream flooding, and high waves are ranked high."

A tenant on the property who has lived there for many years has observed various wave overtopping conditions that occur at the site. According to the tenant, waves begin to overtop the broken seawall and rush on to the property when breaking wave heights are in the 20 to 25 foot range. With breaking waves of 30 feet, waves will overtop the berm and rush down the landward face. Most of the large swells come from the west, from the direction of Shark's cove. These waves sweep along the shore from west to east. Occasional large swells with more north or east direction components will hit the property straight on or sweep from east to west.

Although they occur with relative infrequency, hurricane storm wind and waves pose a potential threat to Hawaii. The report *Windward Oahu Hurricane Vulnerability Study, Determination of Coastal Inundation Limits* (Sea Engineering, Inc., 1990) estimates the possible water level rise and wave runup along the shore for various scenario hurricane events. Typical wave runup elevations along the shore in the vicinity of the project site were determined to be 14 feet above mean sea level (msl). Thus the applicant's home, located 16 feet above msl, is close to the direct hurricane storm wave impact elevation.

The Federal Emergency Management Agency (FEMA), Flood Insurance Rate Maps (FIRM) shows the flood hazard zone AE boundary to be 500 ft seaward of Ke Iki Road. The project site itself is therefore not a designated flood hazard area.

5.0 ALTERNATIVES CONSIDERED

Alternatives to the proposed seawall re-construction include no action, beach nourishment, a sloping rock revetment, geotextile sand-filled bags, or reconstruction and reinforcement of the existing wall.

5.1 No Action

The project site is a beach feature known as a storm berm. The berm is created during extreme wave conditions when the scale of the beach system must grow to match the scale of the incident waves. Fronted by the wide emergent limestone shelf of Kulalua Point, the beach in this case only becomes active during the most extreme wave conditions, when the shelf becomes inundated and waves will wash and over-top the 16-foot high elevation of the berm. As it now exists, the property is slowly and progressively eroding, endangering the houses that are built there. With no action taken, the erosion will continue indefinitely. The protection structures also act to prevent or limit wave overtopping. In the vicinity of the project site, wave overtopping has been known to violently flood houses, causing property destruction and human injury.

The portions of the wall that remain standing are considered a hazard to passers-by and signs warn persons to stay clear. No action to reinforce the standing walls will result in a continued threat to public safety.

5.2 Beach Nourishment

The North Shore of Oahu does not suffer from a lack of sand. Huge volumes of sand are routinely moved inshore, offshore, and in longshore directions. Beach cross-shore profiles changes have been measured at as much as 100 ft at both Waimea Bay (Gibbs, *et al,* 2001) and Sunset Beach (Moberly and Chamberlain, 1964). It is likely that extreme changes are as much as 200 ft or more. Because of the strong wave climate, the grain size of the North Shore beach sand is greater than that of most of Hawaii's beaches, and greater than that from available sources for beach nourishment. Problems with attempting a beach nourishment project include:

- Given the dynamics of the wave climate and resultant sediment transport at the site, the magnitude and cost of such a nourishment project would be astronomical.
- Appropriate sand is simply not available.
- The site is fronted by rock shoreline, not a sandy beach. One can assume, therefore, that a sandy beach would not be stable at the site.

Beach nourishment is simply not a viable option in this case.

5.3 Revetment

A revetment is a sloping, un-cemented structure built of wave resistant material. The most common method of revetment construction is to place an armor layer of stone, sized according to the design wave height, over an underlayer and filter designed to distribute the weight of the armor layer and to prevent loss of fine shoreline material through voids in the revetment. Toe scour protection can be provided by excavating to place the toe on solid substrate where possible, constructing the foundation as much as practicable below the maximum depth of anticipated scour, or extending the toe to provide a scour apron of excess stone. Properly designed and constructed rock revetments are durable, flexible, and highly resistant to wave damage. Should toe scour occur, the structure can settle and readjust without major failure. One major advantage of revetments is that the rough porous rock surface and relatively flat slope of the structure will tend to absorb wave energy, reduce wave reflection, and help to promote accretion of sand on a sandy beach. There are several shoreline reaches in the vicinity of the project site that have non-engineered revetment type structures. These consist of wave resistant basalt armor stones placed on the berm in front of the property. Although they do afford a measure of protection, eventually non-engineered structures typically exhibit some instability due to scour of the toe, and erosion behind the armor stones.

Revetments in Hawaii are typically built on a 1.5-2 horizontal to 1 vertical slope to ensure stability. The extreme conditions at the project site would call for a revetment to extend from about +15 feet to about –1 foot. With a properly designed toe, this would require a horizontal footprint of over 35 feet.

The disadvantages of a rock revetment in this case are:

- There is inadequate space to build it.
- Due to the large stone required and the scale of the structure, it would be very expensive to build.
- It would be difficult to interface with adjoining seawalls.

As the property is fronted by a rock shoreline, wave absorbing characteristics for a protective structure are not as important as they would be if the site were fronted by a sandy beach.

5.4 Sand Bags

In recent years, the state and counties have granted permission for property owners to place large geotextile sandbags (Seabags) on the beach fronting their property as emergency measures to prevent erosion. While they are expedient, they are several reasons why they are not appropriate here:

- They are aesthetically un-pleasing.
- They become slippery with algae growth under repeated inundation and are therefore hazardous.
- They are difficult to fill and place, especially in the quantity needed at this site.
- Like a revetment, they need to be stacked on a slope, and would therefore require a broad footprint.
- They are susceptible to vandalism and are, at best, a temporary solution.

It is also unlikely that Seabags would be stable during the extreme wave conditions that occur at the site.

5.5 Seawall

A seawall is a vertical or sloping concrete or concrete-rock-masonry wall used to protect the land from wave damage and erosion. A seawall, if properly designed and constructed, is a proven, long lasting, and relatively low maintenance shore protection method. Seawalls also have the advantage of requiring limited horizontal space along the shore. Seawalls are not flexible structures, and their structural stability is dependent on the stability of their foundations. The project is the site of a failed seawall. However, excavations showed the foundation of the existing wall is stable, and it has withstood the test of time. Reasons for the failure of the existing wall above the foundation are not known for certain. It appears that over time the reinforcing steel corroded and construction seams in the concrete expanded, eventually resulting in the upper portion of the wall falling over. Standing seawalls adjoin the project site to the southwest, and also, with the exception of a 15-foot gap, to the northeast.

Seawalls tend to reflect incoming waves rather than absorb them. This characteristic makes them generally undesirable on many sandy shorelines as the reflected waves can scour the sand in front of the walls. However, the project site is fronted by a rocky shelf, so that the problem of beach erosion is not an issue in this case.

The approximate 15-foot gap between the end of the proposed seawall and the start of the existing intact wall on the neighboring property to the northeast (TMK 5-9-03-25, lot 9) has the potential to become an erosion problem. End effects caused by wave reflection off the angled end and the return of the new seawall, and wave exposure through the gap between the new wall and the existing wall may cause erosion of the exposed portion of the lot. These impacts will be most likely during large swell events from the north and northeast. While the new seawall may also help to shelter the neighboring property during other wave conditions, negative impacts cannot be predictably eliminated unless the gap is closed.

Given the disadvantages of other shore protection methods, the sheer scale of protection that is required, and the fact that a good foundation and adjoining walls exist at the site, a seawall is the most economical, and indeed the only feasible shore protection option at the site.

6.0 SEAWALL DESIGN AND CONSTRUCTION

The new seawall and reinforcements for the existing standing wall have been designed by William Blakeney, Inc., Consulting Structural Engineers. A plan view drawing of the proposed wall is shown in Figure 14, and cross sections showing the new wall and repair of the existing wall are shown in Figures 15 and 16. Although the old foundations are intact, they will be substantially reinforced by the new construction. The new wall will include a concrete stairway for access to the shore. Standing portions of the old wall will be doweled and epoxied to the new construction. A right-angle return will be built on the northeast end of the property to end the wall. The return will reinforce the seawall and protect against flanking, or erosion on the side of and behind the wall. As noted previously, a gap of approximately 15 feet will exist between the return and the start of the intact wall on the neighboring property (TMK 5-9-03-25, lot 9).

The new seawall will have the same height as the existing wall, extending 11 ft above the existing footing. As shown in the cross-section drawings, the wall will be substantially more robust than the existing wall, with a top cross-section width of 3'-4" versus an approximate width of 1 ft for the existing wall. The footing of the new wall will extend 8 ft landward of the inshore face of the existing footing. The wall will be 100 ft in length, with an 18 ft return.

The wall will be constructed of steel-reinforced concrete. Concrete and steel reinforcement specifications are detailed on the plans. Some excavation will be required to construct the footing and lower portion of the wall. The new wall will be formed and cast-in-place. There will be no construction activity makai of the existing footing.

Backfill specifications are detailed in a letter report from Shinsato Engineering, Inc. dated July 2, 2003, which is referenced on the project plans and attached as an appendix to this document. The existing rubble and debris remaining from the failed wall will remain in place following these procedures specified in the letter:

> *The existing void spaces between the existing boulders should be filled with either clean gravel, sand or lean concrete. A layer of geotextile filter fabric (AMOCO 4553 or equal) should then be placed over the prepared surface. Fill and back fill may then be placed over the geotextile fabric.*

If removal of the rubble and debris is found necessary for wall construction it will be taken to a landfill or otherwise properly used or disposed of by the contractor.

Maximum backfill quantities will be approximately 200 cu yds. Backfill material specifications are:

> *Fill and backfill material shall consist of soil which is free of organics, debris and "adobe" type clay. The maximum size particles for fill and backfill material shall be as follows:*
>
> | | |
> |---|---|
> | *Top 2 feet below finished subgrade (FSG)* | *3"* |
> | *Below 2 feet from FSG* | *12"* |

The new wall will overlap and therefore reinforce the existing wall at the south end of the property. This wall continues into the adjacent property to the south. As designed, the new wall will therefore strengthen the existing wall on the adjacent property to some extent. The old and new walls will have the same height. There are no anticipated negative impacts to the existing seawall on the adjacent property to the south.

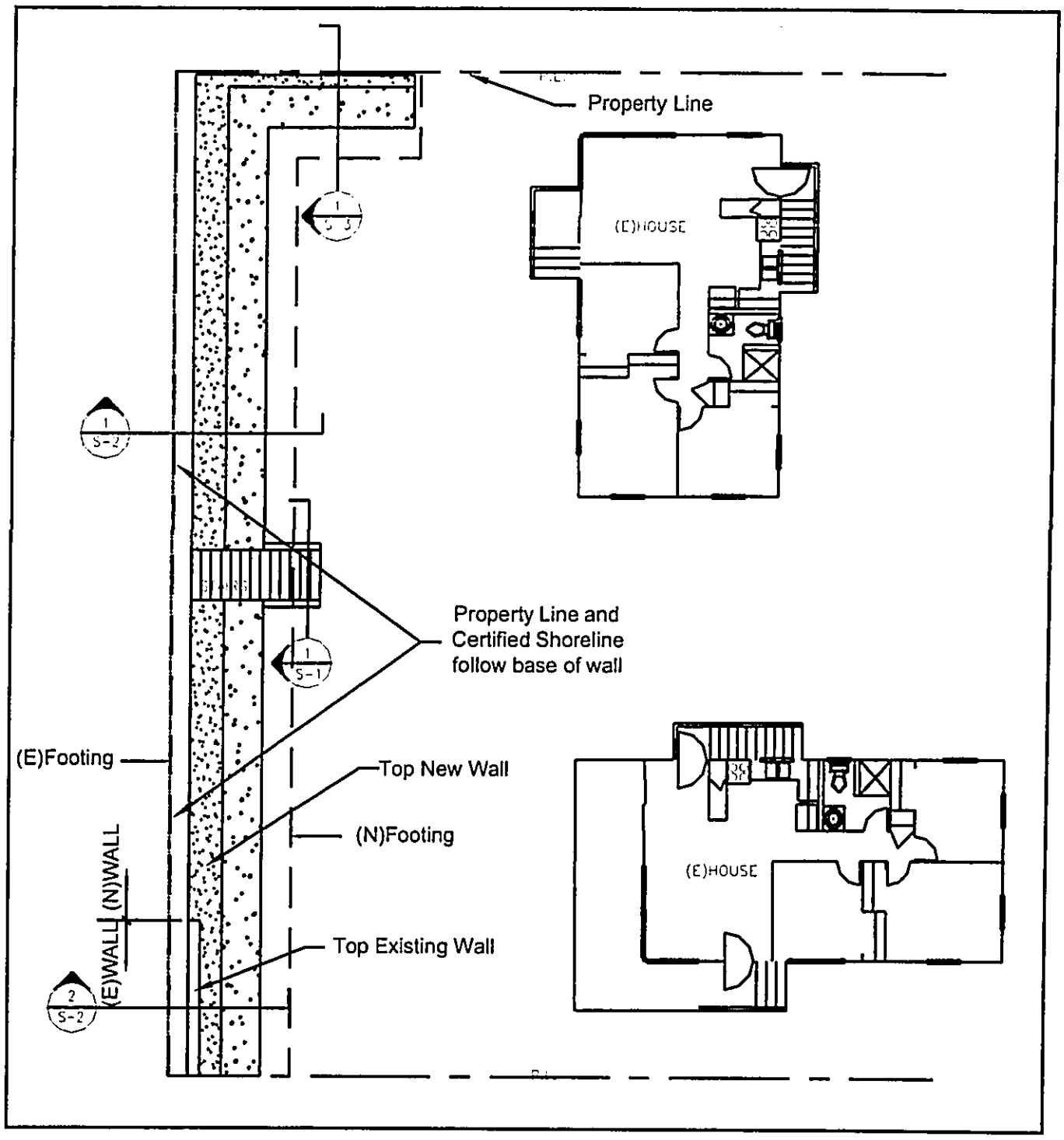

Figure 14. Plan View of Seawall Construction.

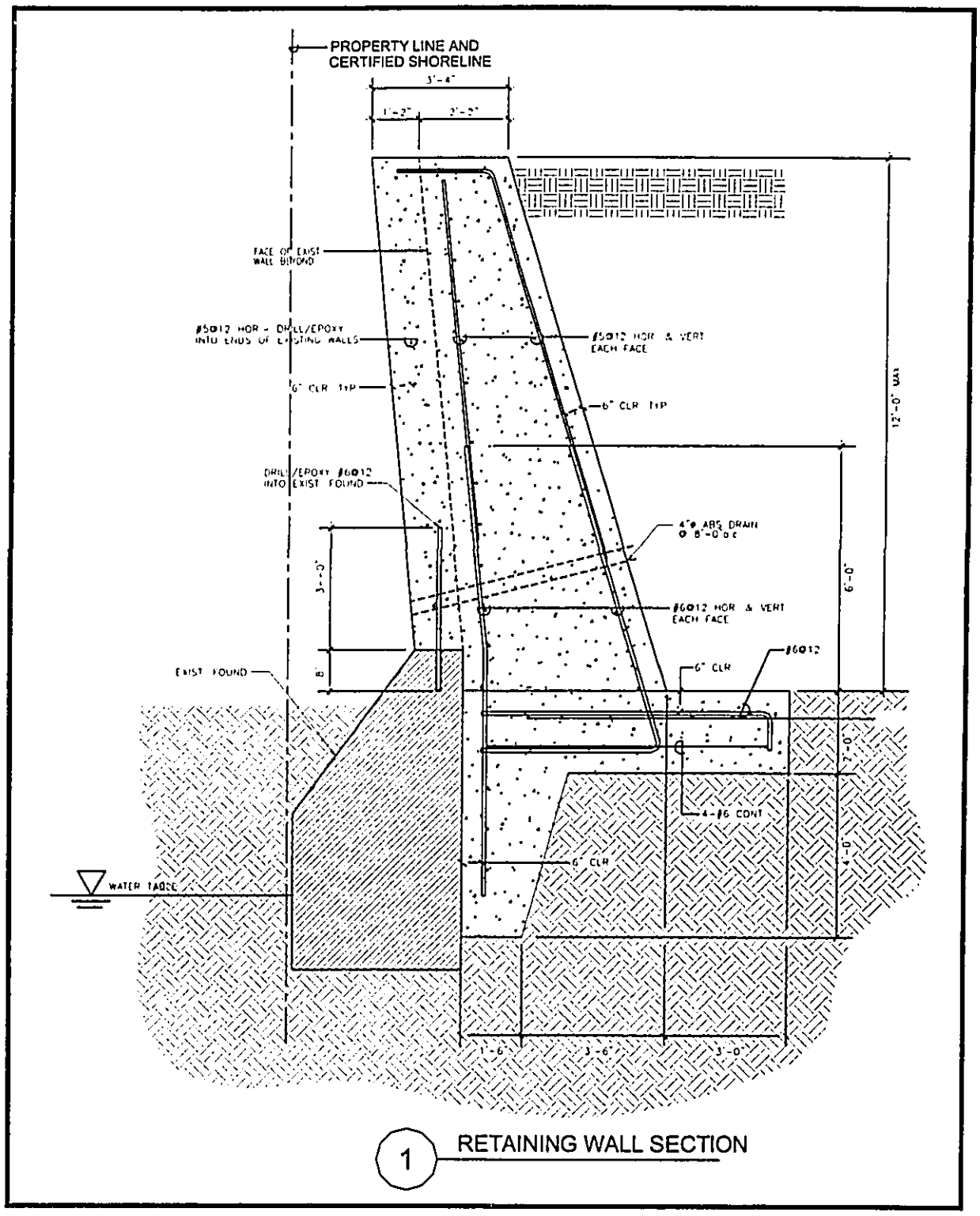

Figure 15. Cross Section showing new wall construction

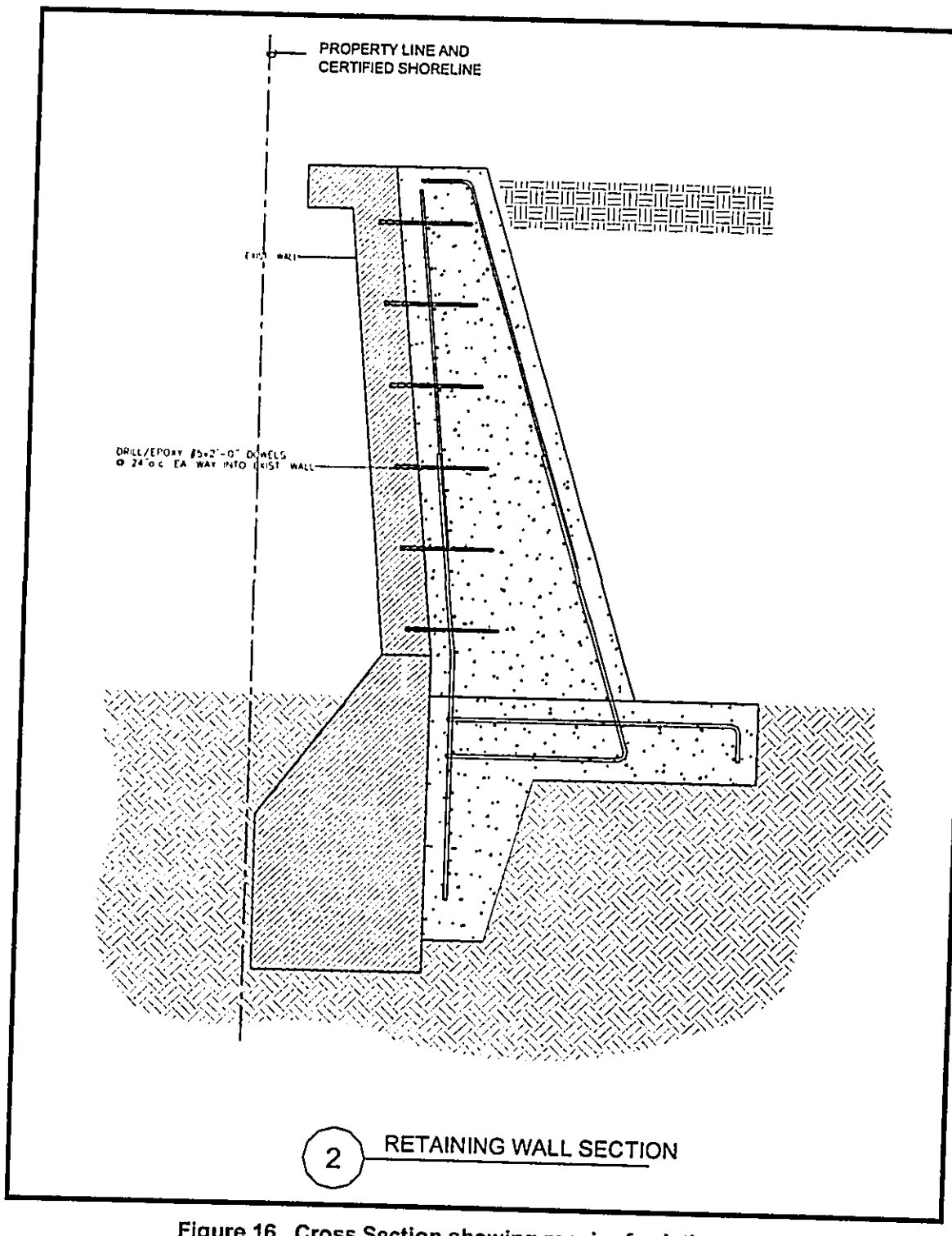

Figure 16. Cross Section showing repair of existing wall

7.0 PROJECT IMPACTS

Impacts are addressed in terms of the following significance criteria 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 on the reef flat 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 will be constructed landward of the certified shoreline as of June 3, 2003, and thus the project will be constructed entirely out of the State Conservation District along the shore. The project will also be constructed landward of the mean higher high tide line, which is far removed across the rocky limestone shelf of Kulalua Point. 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. The seawall will have some positive economic impact to the applicant by preventing further erosion and loss of land.

(5) *"Substantially affects public health."* The project has no adverse public health impacts. Reinforcement of existing standing walls will have a positive impact on public safety.

(6) *"Involves substantial secondary impacts."* The project will have 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. It will be constructed entirely behind the shoreline, on what is now sandy soil. The project will permit landscaping of the shore behind the seawall. The proposed seawall is visually consistent with the existing protected shore on both sides of the project site. However, erosion of an adjacent area may occur (see sect. 11, below).

(8) *"Has cumulative impacts."* The seawall 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 seawall 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. There will be some additional noise above ambient during construction resulting from equipment operation (trucks, back hoe, concrete operations).

(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 seawall may be subject to prevailing wave conditions at the shoreline, particularly during winter season high surf from North Pacific storms. The seawall has been designed to be stronger than the previously existing failed structure, and existing portions of the old wall will be reinforced. The seawall will provide erosion and storm wave protection for the existing homes.

An approximate 15-foot gap will occur between the end of the proposed seawall and the start of the existing intact wall on the neighboring property (TMK 5-9-03-25, lot 9). This gap has the potential to become an erosion problem. End effects caused by wave reflection off the angled end and the return of the seawall, and wave exposure through the gap between the new wall and the existing wall may cause erosion of the exposed portion of the lot. These impacts will be most likely during large swell events from the north and northeast. While the new seawall may also help to shelter the neighboring property during other wave conditions, negative impacts cannot be predictably eliminated unless the gap is closed.

(12) *"Substantially affects scenic vistas and viewplanes identified in county or state plans or studies."* The seawall will be constructed on the ocean side of the storm berm, and will not be visible from any public thoroughfare. Similar structures extend for about 100 feet on either side of the project so there will be no aesthetic impact from the rebuilt 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.

8.0 MITIGATION MEASURES

1. All construction would be done landward of the mean higher high tide elevation. The ocean is about 800 feet from the project site except during extreme wave conditions. There will be no construction in the water.

2. The following Best Management Practices will be adhered to during construction.

    a) The Contractor shall perform the work in a manner which minimizes environmental pollution and damage as a result of construction operations. Environmental resources outside the limits of construction shall be protected during the construction period.
    b) The Contractor shall confine all construction activity to areas defined by the construction plans.
    c) All construction materials shall be free of contaminants or pollutants.
    d) No debris, petroleum products, or other construction-related substances or materials will be allowed to flow, fall, leach or otherwise enter the coastal waters.
    e) A 2-ft silt barrier will be fastened to the existing footing to prevent accidental spilling of material on to State land.
    f) Soils will be wetted during excavation to minimize airborne particles.

3. There will be no construction on the seaward side of the existing concrete footing.

4. If footing construction below the water table is necessary the contractor can use tremie mix concrete for construction.

9.0 SHORELINE SETBACK VARIANCE JUSTIFICATION

The project site is documented as high hazard area due to wave inundation. Extreme wave events have demolished homes and caused human injury in the project vicinity. Erosion of the berm on which the applicant's home is located is slow but progressive, and, unchecked, will lead to eventual undermining of the house. Figure 17 is a view looking northeast at the project site showing the failure of the existing wall and the rocky shorefront. Figure 18 shows ongoing progressive erosion at the site. Erosion is exacerbated by the existing walls due to end effects and channeling of drainage from wave overtopping. Without the seawall to reflect incoming waves, wave run-up during an extreme event could eventually lead to damage and destruction of the house, and possible personal injury. In addition, portions of the seawall that have not fallen constitute a hazard to persons walking on the beach underneath the wall. Reinforcement of these portions of the wall is necessary for public safety.

10.0 PUBLIC AND AGENCY INVOLVEMENT, REVIEW AND CONSULTATION

The project will require the following permits:

- Shoreline Setback Variance pursuant to Chapter 23, Revised Ordinances of Honolulu
- Building permit from the City and County of Honolulu

Figure 17. View looking northeast.

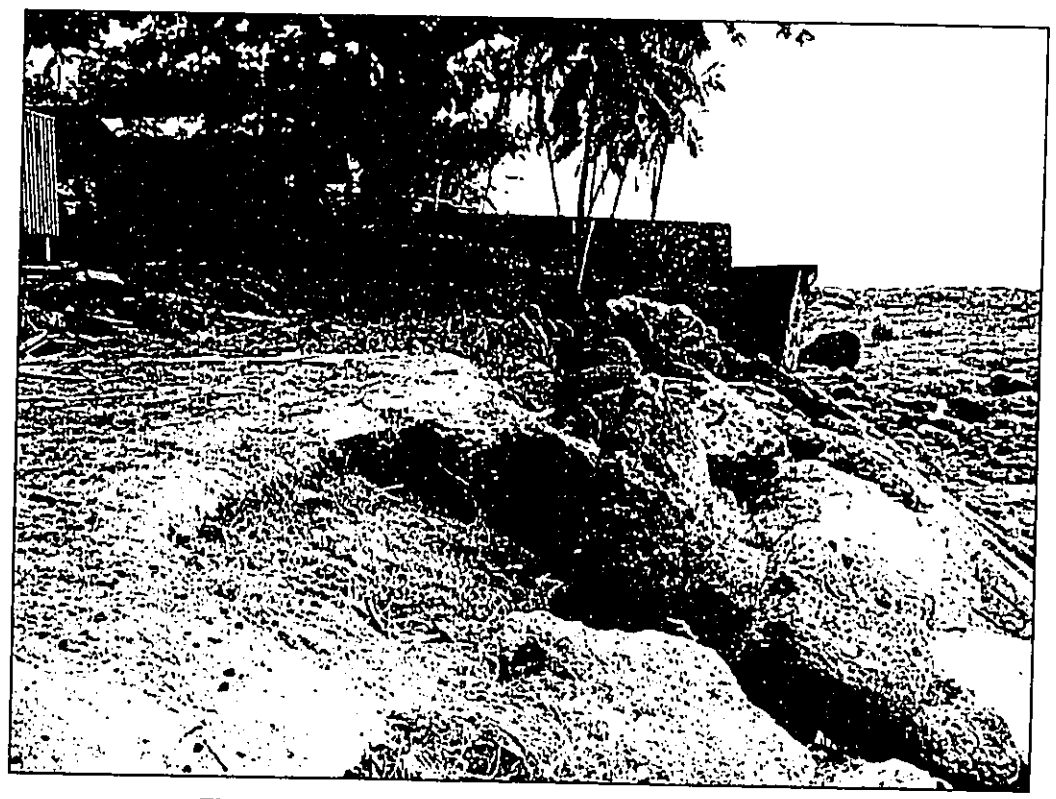

Figure 18. Progressive erosion at the project site.

11.0 REFERENCES

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

AECOS, Inc., 1981, *Oahu Coastal Zone Atlas*, prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii.

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Moberly, Ralph, and Chamberlain, T., 1964, *Hawaiian Beach System*, Hawaii Institute of Geophysics, HIG-64-2, University of Hawaii.

Sea Engineering, Inc., 1989, *Oahu shoreline Study, Part 1, Data on Beach Changes (1988)*, prepared for City and County of Honolulu, Department of Land Utilization.

Sea Engineering, Inc., 1990, *Windward Oahu Hurricane Vulnerability Study – Determination of Coastal Inundation Limits*, prepared for the State of Hawaii, Civil Defense and the U.S. Army Corps of Engineers, Honolulu Engineer District.

Appendix A

Geotechnical Letter Report

SHINSATO ENGINEERING, INC.
CONSULTING GEOTECHNICAL ENGINEERS
98-747 KUAHAO PLACE, PEARL CITY, HAWAII 96782
PHONE: (808) 487-7855
FAX: (808) 487-7854

July 2, 2003
Project No. 03-0100

Post-it® Fax Note 7671	Date 7-2-03	# of pages ▶ 3
To Bill	From Larry S.	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 261-8900	Fax #	

Mr. Paul Dold
Suite 2150, Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813

Subject: Site Inspection
59-801-E Ke Iki Road
Pupukea

Dear Mr. Dold:

This is to provide you with information and recommendations for repair of the seawall at the back of your property.

1. The existing seawall consists of a reinforced concrete wall with an 11-foot high stem and an 8-foot base. See the attached sketch.

2. The seawall is located along the back property line at the toe of the moderately sloping back yard of your property. Beyond the seawall, there is a peninsula of land that is relatively level and extends outward to Kulalua Point. The near surface material on the peninsula consists of cemented calcareous sand and coralline sediments.

3. A test pit excavated by you on the ocean side of the wall revealed the base to be approximately 4 feet deep. Groundwater is approximately 3 feet deep. The soil along the Kulalua Point side of the wall consisted of tan to light-brown calcareous sand with some fines and basaltic boulders. At the bottom of the test pit, the underlying material consisted of brown elastic SILT.

4. From the information provided by you, the sand and boulders found in the test pit are backfilled material that was placed after mining of the original ground.

5. For repair of the seawall, the following design parameters may be used:

   a. Allowable soil bearing value: 3,000 psf
   b. Active earth pressure (granular backfill)

	Active Earth Pressure (pcf)	
Backfill Slope	Horizontal	Vertical
Level	30	0
3H:1V	40	13
2H:1V	45	22

For restrained walls, the above active pressures shall be increased by 50 percent.

c. Passive earth resistance: 300 pcf above groundwater
200 pcf below groundwater
d. Frictional resistance 0.4 times the dead load
e. Passive earth resistance and friction may be combined

6. Backfilling of the backyard area should be performed in the following manner:

a. Clearing, Grubbing and Site Preparation:
All vegetation, weeds, brush, roots, stumps, rubbish, debris, soft soil and other deleterious material shall be removed from the area to be filled and shall be disposed of off-site.

..ie existing void spaces between the existing boulders should be filled with either clean gravel, sand or lean concrete. A layer of geotextile filter fabric (AMOCO 4553 or equal) should then be placed over the prepared surface. Fill and backfill may then b placed over the geotextile fabric.

b. Material Quality:
Fill and backfill material shall consist of soil which is free of organics, debris and "adobe" type clay. The maximum size particle for fill and backfill material shall be as follows:

Top 2 feet below finished subgrade (FSG)	3"
Below 2 feet from FSG	12"

(FSG = Finished Subgrade Elevation)

c. Placement of Fill and Backfill:
Each layer of fill and backfill material shall be placed in lifts not exceeding 12-inches in loose thickness. Prior to placing of fill and backfill material, the material shall be aerated or moistened to near optimum moisture content (ASTM D1557-00 test procedure).

d. Degree of Compaction:
Each layer of fill and backfill shall be thoroughly compacted from edge to edge using conventional compaction equipment designed for the purpose. The minimum degree of compaction for each layer (as determined by the ASTM D1557-00 test procedure) shall be 90 percent.

Should you have any questions or require any further information, please do not hesitate to contact us.

Very truly yours,

SHINSATO ENGINEERING, INC.

Lawrence S. Shinsato, P.E.
President

LSS:ls

cc: Bill Blakeney FAX: 261-8900

Appendix B

Response to Comments

LAW OFFICES OF PAUL M. DOLD

ATTORNEYS AT LAW, A LAW CORPORATION

CENTRAL PACIFIC PLAZA, SUITE 2150
220 SOUTH KING STREET
HONOLULU, HAWAII 96813

PAUL M. DOLD
CAROLYN SCHNACK

TELEPHONE: (808) 531-8886
FACSIMILE: (808) 531-8865

E-MAIL: PMDOLD@HAWAII.RR.COM

April 2, 2004

Ms. Genevieve Salmonson
Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 700
Honolulu, Hawaii 96813

Re:

Review:	Final Environmental Assessment
Project:	Repair of Retaining Wall
Applicant:	Paul M. Dold, AAL
File No.:	2003-ED-02
Location:	59-601 Ke Iki Road, Haleiwa, Oahu
TMK:	(1) 5-9-003: 024

Dear Ms. Salmonson:

Please find attached hereto a letter from coastal engineer Jim H. Barry addressing comments raised by your letter dated February 6, 2004 to Mr. Crispin and other relevant reviewing authorities. With regard to your comment #1 please be advised that the OEQC Shoreline Hardening Policy has been noted, and the OEQC Environmental Assessment Guidelines were used in preparation of the Coastal Environmental Assessment. With regard to your comment #2 please be advised that the DLNR Office of Conservation and Coastal Lands reviewed the Coastal EA and had no comments. Also with regard to comment #2, I personally did a presentation to the North Shore Neighborhood board on January 27, 2004 regarding all issues presented by this retaining wall project. A number of neighbors were at that meeting. Additionally, we have consulted with neighbors surrounding the project area. Should you have any questions regarding this matter please do not hesitate to call my office at 531-8886.

Very truly yours,

Paul M. Dold

Enclosures.

Sea Engineering, Inc.

Makai Research Pier • 41-202 Kalanianaole Hwy. Suite 8 • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 / FAX (808) 259-8143 • E-mail: sei@seaengineering.com

March 15, 2004

Mr. Paul M. Dold
2150 Central Pacific Plaza
220 South King Street
Honolulu, HI 96813

Dear Mr. Dold,

I have reviewed comments related to the Draft Environmental Assessment (EA) titled *Draft Environmental Assessment and Coastal Engineering Evaluation for TMK5-9-03:24 Lot 8 (Paul M. Dold)* submitted to the City and County of Honolulu Department of Planning and Permitting in December, 2003, and have made relevant additions and corrections to the document in response. Following are specific responses to comments by the reviewing agencies.

Response to comments by Mr. Eric Crispin, City and County of Honolulu Department of Planning and Permitting:

1. Figure 13 in the draft has been amended as Figure 14 in the final EA. Shoreline, rear property line and top of wall (existing and proposed) have been identified. The extent of the footing at the base of the wall has also been identified on the figure.
2. Configuration and orientation of the houses in the figure have been modified to conform with the shoreline survey.
3. The locations of the existing and new walls have been resolved on the plans to conform with the location shown on the survey and in Figure 14 of the final EA.
4. Additional fill will be placed landward of the wall. A description of the fill material and quantity had been described in Section 6 of the final EA. Weep holes are provided for in the design of the new wall, and are shown in the plans and in Figure 15 of the final EA.
5. A copy of the certified shoreline survey has been included in the final EA as Figure 7.
6. The dimensions of the proposed wall are shown in Figures 14, 15, and 16, and further described in Section 6 of the final EA.

final EA. Construction activity will not take place *makai* of the proposed and existing seawall. Adverse environmental impacts beyond what are detailed in Section 7 are not anticipated.

8. The final EA has been expanded to describe the interface of the new wall with the existing wall to the south (see Section 6).
9. The remnants of the failed seawall will mostly remain in place. Burial will follow backfill guidelines from the geotechnical consultant. This is described in Section 6 of the final EA.
10. Duly noted.
11. The project is not in the flood hazard zone. This information has been clarified in Section 3.2 of the final EA.
12. The final EA has been amended to remove subdivision references.

Response to comments by Mr. Denis Lau, State of Hawaii Department Health:

1. Best Management Practices in Section 8 of the final EA have been revised and expanded to include dust control and a silt barrier along the existing footing to prevent accidental transport of soil material due to run-off or construction activities. The existing footing will serve as a barrier for storm water run-off.
2. There will be no discharge into State waters. If the water table is encountered the contractor will pour the footing using tremie concrete.
3. A discussion concerning the rip rap and remnants of the old wall has been added in Section 6 of the final EA.
4. This is duly noted

Response to comments by P. Holly McEldowney, State of Hawaii Department of Land and Natural Resources, Historic Preservation Division:

No questions were raised, however it was advised that in the unlikely event that historic sites were uncovered during the construction, that all work must stop and the State Historic division must be contacted. This is duly noted.

No other question were raised by the reviewing authorities. Please contact me should you have any questions.

Sincerely,

J. Barry

James H. Barry
Coastal Engineer

LAW OFFICES OF PAUL M. DOLD

ATTORNEYS AT LAW, A LAW CORPORATION

CENTRAL PACIFIC PLAZA, SUITE 2150
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E-MAIL: PMDOLD@HAWAII.RR.COM

March 15, 2004

Mr. Eric Crispin, AIA
Director of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Re:	Review:	Final Environmental Assessment
	Project:	Repair of Retaining Wall
	Applicant:	Paul M. Dold, AAL
	File No.:	2003-ED-02
	Location:	59-601 Ke Iki Road, Haleiwa, Oahu
	TMK:	(1) 5-9-003: 024

Dear Mr. Crispin:

Please find attached hereto a letter from coastal engineer Jim H. Barry addressing all comments raised by your letter dated February 11, 2004 and other relevant reviewing authorities. Should you have any questions regarding this matter please do not hesitate to call my office at 531-8886.

Very truly yours,

Paul M. Dold

Enclosures.

Sea Engineering, Inc.

Makai Research Pier • 41-202 Kalanianaole Hwy. Suite 8 • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 / FAX (808) 259-8143 • E-mail: sei@seaengineering.com

March 15, 2004

Mr. Paul M. Dold
2150 Central Pacific Plaza
220 South King Street
Honolulu, HI 96813

Dear Mr. Dold,

I have reviewed comments related to the Draft Environmental Assessment (EA) titled *Draft Environmental Assessment and Coastal Engineering Evaluation for TMK5-9-03:24 Lot 8 (Paul M. Dold)* submitted to the City and County of Honolulu Department of Planning and Permitting in December, 2003, and have made relevant additions and corrections to the document in response. Following are specific responses to comments by the reviewing agencies.

Response to comments by Mr. Eric Crispin, City and County of Honolulu Department of Planning and Permitting:

1. Figure 13 in the draft has been amended as Figure 14 in the final EA. Shoreline, rear property line and top of wall (existing and proposed) have been identified. The extent of the footing at the base of the wall has also been identified on the figure.
2. Configuration and orientation of the houses in the figure have been modified to conform with the shoreline survey.
3. The locations of the existing and new walls have been resolved on the plans to conform with the location shown on the survey and in Figure 14 of the final EA.
4. Additional fill will be placed landward of the wall. A description of the fill material and quantity had been described in Section 6 of the final EA. Weep holes are provided for in the design of the new wall, and are shown in the plans and in Figure 15 of the final EA.
5. A copy of the certified shoreline survey has been included in the final EA as Figure 7.
6. The dimensions of the proposed wall are shown in Figures 14, 15, and 16, and further described in Section 6 of the final EA.
7. A more detailed description of the wall construction has been included in Section 6 of the

7. A more detailed description of the wall construction has been included in Section 6 of the final EA. Construction activity will not take place *makai* of the proposed and existing seawall. Adverse environmental impacts beyond what are detailed in Section 7 are not anticipated.
8. The final EA has been expanded to describe the interface of the new wall with the existing wall to the south (see Section 6).
9. The remnants of the failed seawall will mostly remain in place. Burial will follow backfill guidelines from the geotechnical consultant. This is described in Section 6 of the final EA.
10. Duly noted.
11. The project is not in the flood hazard zone. This information has been clarified in Section 3.2 of the final EA.
12. The final EA has been amended to remove subdivision references.

Response to comments by Mr. Denis Lau, State of Hawaii Department Health:

1. Best Management Practices in Section 8 of the final EA have been revised and expanded to include dust control and a silt barrier along the existing footing to prevent accidental transport of soil material due to run-off or construction activities. The existing footing will serve as a barrier for storm water run-off.
2. There will be no discharge into State waters. If the water table is encountered the contractor will pour the footing using tremie concrete.
3. A discussion concerning the rip rap and remnants of the old wall has been added in Section 6 of the final EA.
4. This is duly noted

Response to comments by P. Holly McEldowney, State of Hawaii Department of Land and Natural Resources, Historic Preservation Division:

No questions were raised, however it was advised that in the unlikely event that historic sites were uncovered during the construction, that all work must stop and the State Historic division must be contacted. This is duly noted.

No other question were raised by the reviewing authorities. Please contact me should you have any questions.

Sincerely,

J. Barry

James H. Barry
Coastal Engineer

LAW OFFICES OF PAUL M. DOLD

ATTORNEYS AT LAW, A LAW CORPORATION

CENTRAL PACIFIC PLAZA, SUITE 2150
220 SOUTH KING STREET
HONOLULU, HAWAII 96813

PAUL M. DOLD
CAROLYN SCHNACK

TELEPHONE: (808) 531-8886
FACSIMILE: (808) 531-8865

E-MAIL: PMDOLD@HAWAII.RR.COM

March 16, 2004

Mr. Denis R. Lau, P.E. Chief
State Department of Health
Clean Water Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Re:	Review:	Final Environmental Assessment
	Project:	Repair of Retaining Wall
	Applicant:	Paul M. Dold, AAL
	File No.:	2003-ED-02
	Location:	59-601 Ke Iki Road, Haleiwa, Oahu
	TMK:	(1) 5-9-003: 024

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Enclosures.

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PAUL M. DOLD
CAROLYN SCHNACK

TELEPHONE: (808) 531-8886
FACSIMILE: (808) 531-8865

E-MAIL: PMDOLD@HAWAII.RR.COM

March 15, 2004

Ms. P. Holly McEldowney
Administrator
State Historic Preservation Division
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Re:	Review:	Final Environmental Assessment
	Project:	Repair of Retaining Wall
	Applicant:	Paul M. Dold, AAL
	File No.:	2003-ED-02
	Location:	59-601 Ke Iki Road, Haleiwa, Oahu
	TMK:	(1) 5-9-003: 024

Dear Ms. McEldowney:

Please find attached hereto a letter from coastal engineer Jim H. Barry addressing all comments raised by your letter dated January 13, 2004 to Mr. Crispin and other relevant reviewing authorities. Should you have any questions regarding this matter please do not hesitate to call my office at 531-8886.

Very truly yours,

Paul M. Dold

Enclosures.

Sea Engineering, Inc.

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Sincerely,

J. Barry

James H. Barry
Coastal Engineer

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4414 • FAX (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

February 11, 2004

2003/ELOG-2578(ASK)
2003/ED-32

Mr. Paul M. Dold
Law Offices of Paul M. Dold
Central Pacific Plaza, Suite 2150
Honolulu, Hawaii 96813

Dear Mr. Dold:

Draft Environmental Assessment (EA), 2003/ED-32
For Reconstruction of a Seawall in Haleiwa
Tax Map Key 5-9-3: 24

We are forwarding copies of all comments we have thus far received related to the Draft Environmental Assessment (EA) for the above-referenced project.

In accordance with the provisions of Chapter 343, Hawaii Revised Statutes (HRS), you must respond in writing to these and any other comments which were received during the 30-day comment period which began with publication of a notice of availability of the Draft EA in The Environmental Notice on January 8, 2004. The Final EA must include these comments and responses, as well as revised text and graphics, where appropriate.

We have reviewed the above document and offer the following comments:

1. Figure 13 of the Draft EA should identify the shoreline and the rear property line. If possible, the base and top of the wall, existing and proposed, should be identified on this plan or on a separate plan view.

2. The configuration and orientation of the houses shown in Figure 13 of the Draft EA, as well as that of the full and half-size plans, differ from that of the shoreline survey. This discrepancy should be resolved in the Final EA.

3. The location of the existing and new and existing walls shown on the full and half size plans, the survey and Figure 13 in the Draft EA differ from each other. This discrepancy should be resolved in the Final EA.

4. Will additional fill be placed landward of the proposed wall? If so, a description of the type and volume of the fill should be provided in the Final EA. Will weep holes be provided? If so, these should be shown on the plan.

5. A copy of the certified shoreline survey should be attached to the Final EA.

6. The dimensions of the proposed wall should be described in the text of the Final EA.

7. Construction methods, potential impacts, and proposed mitigation measures should be discussed in greater detail than that provided on page 28 of the Draft EA. Will the location of the construction activity be limited to the applicant's property, or will it extend into the area makai of the proposed seawall? The Final EA should gives some examples of what mitigation measures will be undertaken to minimize adverse environmental impacts.

8. The Final EA should describe how the proposed wall will interface with, or impact on, the existing seawall on the adjacent lot to the south.

9. What will be done with the rubble remnants of the former seawall that have been laid on the scarp?

10. The proposed wall is within the Special Management Area and requires a Special Management Area Use Permit. Because the estimated value of the work is $50,000, we are transmitting application instructions for a Minor Special Management Area Use Permit.

11. It appears that the project is not in the AE flood hazard zone. This information should be verified and revised in the Final EA.

12. Page 2 of the Draft EA states that lot 8 has been subdivided into a CPR of five lots. The lot has not undergone a subdivision action and the Final EA should not refer to lot 8 as having been subdivided.

If you have questions regarding the above, you may contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,

ERIC G. CRISPIN, AIA
for Director of Planning
and Permitting

EGC:pl
Encl.

doc no.266795

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

January 26, 2004

2003-ED-32.RCM

LD-NAV

Honorable Eric G Crispin, AIA
Director of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Crispin:

SUBJECT: Review: Draft Environmental Assessment
Project: Reconstruction of a Seawall
Applicant: Paul M. Dold, AAL
I.D. No.: 2003-ED-32
Location: 59-602 Ke Iki Road, Haleiwa, Oahu, Hawaii
TMK: (1) 5-9-003: 024

Thank you for the opportunity to review and comment on the subject matter

A copy of the document pertaining to the proposed project was transmitted or made available to the following Department of Land and Natural Resources' Divisions for their review and comment.

- Division of Aquatic Resources
- Engineering Division
- Division of Boating and Ocean Recreation
- Office of Conservation and Coastal Lands
- Land-Oahu District Land Office

Enclosed please find a copy of the Division of Aquatic Resources and Office of Conservation and Coastal Lands response and the Engineering Division's comment.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: ODLO

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

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AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DIV OF AQUATIC RESOURCES
Surname Date
Draft Reply
Reply Direct
Comments
Information
Comp Act & File
Routing
Copies to
Remarks
03-1012

December 23, 2003

LD/NAV
Ref.: 2003-ED-32.CMT

L-3737
Suspense Date: 1/13/04

MEMORANDUM:

TO: XXX Division of Aquatic Resources
Division of Forestry & Wildlife
Division of State Parks
XXX Engineering Division
XXX Division of Boating and Ocean Recreation
Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Oahu District Land Office

FROM: Dierdre S. Mamiya, Administrator
Land Division

RECEIVED
2004 JAN 15 P 3:24
LAND DIVISION

SUBJECT: Draft Environmental Assessment
File No.: 2003-ED-32 - TMK:(1) 5-9-003: 024
Authority: C&CoH Department of Planning and Permitting
Applicant: Paul M. Dold, AAL
Project: Reconstruction of a Seawall
Address: 59-602 Ke Iki Road, Haleiwa, Oahu, Hawaii

Please review the document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384. If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no ~~comments~~ objections - FONSI. ( ) Comments attached.

Signed: Francis Oishi Date: 1/12/04

Name: Francis Oishi for William Devick Division: Aquatic Resources

RECEIVED
DEC 24 2003
AQUATIC RESOURCES

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
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AQUATIC RESOURCES
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 23, 2003

LD/NAV
Ref.: 2003-ED-32.CMT

L-3737
Suspense Date: 1/13/04

04-DA-90

MEMORANDUM:

TO:
XXX Division of Aquatic Resources
Division of Forestry & Wildlife
Division of State Parks
XXX Engineering Division
XXX Division of Boating and Ocean Recreation
Commission on Water Resource Management
XXX Office of Conservation and Coastal Lands
XXX Land-Oahu District Land Office

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(X) We have no comments.

( ) Comments attached.

Signed: [signature]

Date: 1-6-04

Name: [signature]

Division: DOCL

LINDA LINGLE
GOVERNOR OF HAWAII

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

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DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

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HONOLULU, HAWAII 96809

December 23, 2003

LD/NAV
Ref.: 2003-ED-32.CMT

L 3737

Suspense Date: 1/13/04

2004 JAN 20 PM 3 58

MEMORANDUM:

TO:
- XXX Division of Aquatic Resources
- Division of Forestry & Wildlife
- Division of State Parks
- XXX Engineering Division
- XXX Division of Boating and Ocean Recreation
- Commission on Water Resource Management
- XXX Office of Conservation and Coastal Lands
- XXX Land-Oahu District Land Office

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File No.: 2003-ED-32 - TMK: (1) 5-9-003: 024
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(✓) We have no comments.

( ) Comments attached.

Signed: [signature]

Date: 1/5/04

Name: Stephen Thompson

Division: Boating

LINDA LINGLE
GOVERNOR OF HAWAII

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

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DEPARTMENT OF LAND AND NATURAL RESOURCES
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December 23, 2003

LD/NAV
Ref.: 2003-ED-32.CMT

L-3737
Suspense Date: 1/13/04

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Division of State Parks
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Commission on Water Resource Management
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( ) We have no comments.
(X) Comments attached.

Signed: _____ Date: 1/2/04

Name: _____ Division: Engineering

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LA/NAV

Ref.: 2003-ED-32-CMT

COMMENTS

(X) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone AE.

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone ___.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

(X) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR *indicates the minimum* standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

(X) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

_____

( ) Other: _____

_____

Should you have any questions, please call Mr. Eric Yuasa of the Planning Branch at 587-0254.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 1/2/04

LINDA LINGLE
GOVERNOR OF HAWAII

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

04 JAN 15 PM 3:59

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

January 13, 2004

Mr. Eric G. Crispin, Director
Department of Planning and Permitting
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

LOG NO: 2004.0057
DOC NO: 0401EJ05

Dear Mr. Crispin:

SUBJECT: **Chapter 6E-42 Historic Preservation Review – Shoreline Setback Variance (SV) EA for Proposed Sea Wall Reconstruction: Paul M. Dold, 59-602 Ke Iki Road (2003/ED-32 ASK) [County/DPP]**
Pupukea, Ko`olauloa, O`ahu
TMK: (1) 5-9-003:024

Thank you for the opportunity to comment on the proposed project to reconstruct an existing seawall at 59-602 Ke Iki Road. The applicant proposes to re-build portions of the wall that have fallen and reinforce sections that are still standing. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division. We received the subject EA from your office on December 23, 2003.

The project proposes to use the existing foundation and retaining wall during the reconstruction by tying in new wall sections to the old. All work will be done landward of the seawall. A review of our records shows that there are no known historic sites at this location although two human burials were found approximately 0.14 mile to the west of this parcel. The burials were located further from the shoreline than the proposed action.

The project proposes repairs in areas that were extensively altered during construction of the original seawall. The sea wall is a massive structure and the photographs provided show that numerous large boulders were placed to aid in retaining the sea wall. Since the project proposes re-use of the foundations and retaining walls in areas that have been previously disturbed, we believe that "no historic properties will be affected" by this action. However, in the unlikely event that historic sites, including human burials, are uncovered during routine construction activities, all work in the vicinity must stop and the State Historic Preservation division must be contacted at (808) 692-8015.

Should you have any questions about archaeology, please feel free to call Sara Collins at (808) 692-8026 or Elaine Jourdane at (808) 692-8027. Should you have any questions about burial matters, please feel free to contact Kai Markell at (808) 587-0008.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

c. Kai Markell, BSP
V. Horn Diamond, Chair, OIBC

EJ:ak

CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

Should you have any questions about archaeology, please feel free to call Sara Collins at (808) 692-8026 or Elaine Jourdane at (808) 692-8027. Should you have any questions about burial matters, please feel free to contact Kai Markell at (808) 587-0008.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Administrator
State Historic Preservation Division

c. Kai Markell, BSP
V. Horn Diamond, Chair, OIBC

EJ:ak

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMD / CWB

12076CEC.03

December 30, 2003

Mr. Eric G. Crispin, AIA
Director of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Crispin:

Subject: ***Comments on the Draft Environmental Assessment (DEA) for Shoreline Setback Variance (SSV) Application for the Construction of a Section of New Retaining Wall and Reconstruct a Section of the Existing Retaining Wall at Seaward Boundary of Shoreline Parcels at 59-601 Ke Iki Road (Lots 8D and 8E), Haleiwa, Island of Oahu File No. 2003/ED-32 (ASK) / TMKs: (1) 5-9-003:024***

Thank you for the opportunity to review and comment on the DEA prepared for the subject project. The following are our general comments based on the information provided in the DEA:

1. Pursuant to Chapter 11-54 (entitled Water Quality Standards) of the Hawaii Administrative Rules (HAR), a Site-Specific Construction Best Management Practices (BMPs) Plan shall be developed, implemented, and properly maintained during the retaining wall construction period to prevent/minimize the potential soil particles from entering the adjacent State waters in a form of fugitive dust (airborne), or being pushed by the construction equipment, or being carried by the storm water runoff.

2. The base of the proposed retaining wall is extended below the water table (see figure 14). However, the DEA did not discuss whether construction site dewatering activity is anticipated. A National Pollutant Discharge Elimination System (NPDES) permit is required for the discharge, either directly or indirectly, of construction site treated dewatering effluent into adjacent State waters. The NPDES Notice of Intent (NOI) and guidelines, and HAR, Chapters 11-54 and 11-55 are available at CWB's website: http://www.state.hi.us/health/eh/cwb/forms.html.

3. The DEA should include the discussion on how to handle the boulders that were placed on-site.

4. The applicant and its agent, Mr. Paul M. Dold, shall ensure that the construction of the proposed retaining wall will not cause any erosion to the adjacent properties or the down drift

sand beaches. The retaining seawall construction shall not interfere with or become injurious to any assigned uses made of, or presently in, the State receiving waters.

If you have any questions regarding the NPDES permitting requirements, please contact me or direct your staff to contact Mr. Edward Chen of the Engineering Section, Clean Water Branch, at (808) 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

DEPARTMENT OF PARKS AND RECREATION

CITY AND COUNTY OF HONOLULU

KAPOLEI HALE, 1000 ULUOHIA STREET, STE. 309 • KAPOLEI, HAWAII 96707
PHONE: (808) 692-5562 • FAX: 692-5131 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

EDWARD T. "SKIPPA" DIAZ
DEPUTY DIRECTOR

December 31, 2003

TO: ERIC G. CRISPIN, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: WILLIAM D. BALFOUR, JR., DIRECTOR

SUBJECT: ENVIRONMENTAL ASSESSMENT/SHORELINE SETBACK VARIANCE (SV)
Agent: Paul M. Dold, AAL
Location: 59-602 Ke Iki Road, Haleiwa, Hawaii
Tax Map Key: 5-9-03: 24
Request: Shoreline Setback Variance
Proposal: Reconstruction of Seawall

Thank you for the opportunity to review and comment on the Environmental Assessment/Shoreline Setback Variance relating to the reconstruction of a damaged seawall on private property fronting Pupukea Beach Park.

The Department of Parks and Recreation has no comment.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

W. D. Balfour

WILLIAM D. BALFOUR, JR.
Director

WDB:ea
(45645)