DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4432 • FAX: (808) 527-6743
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MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
ACTING DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2004/ED-27(AM)

March 2, 2005

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

RECEIVED
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OFC. OF ENVIRONMENTAL QUALITY CONTROL

Dear Ms. Salmonson:

Shoreline Setback Variance
Chapter 343, Hawaii Revised Statutes
Environmental Assessment (EA)/Determination
Finding of No Significant Impact

Landowner/Applicant	:	Stanley T. and Donna M. Koki
Agent	:	Sea Engineering, Inc.
Location	:	55-283 Kamehameha Highway - Laie
Tax Map Key	:	5-5-2: 3
Request	:	Shoreline Setback Variance
Proposal	:	To construct a sloping rock revetment within the 40-foot 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 and four copies of the Final EA. If you have any questions, please contact Ann Matsumura of our staff at 523-4077.

Sincerely yours,

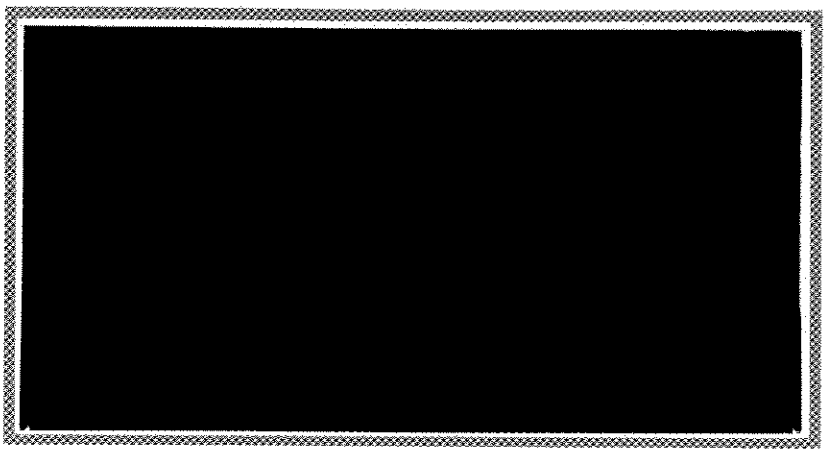
Barbara A. Moon for
HENRY ENG, FAICP
Acting Director of Planning and Permitting

HE:cs
Encls.

doc348867

2005-03-23 FONSI
KAMEHAMEHA HWY (55-283) SHORELINE
SETBACK VARIANCE IN LAIE FOR KOKI

MAR 2 3 2005



RECEIVED
'05 MAR -4 A8:02
OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Sea Engineering, Inc.

FINAL
ENVIRONMENTAL ASSESSMENT AND COASTAL ENGINEERING EVALUATION FOR SHORELINE SETBACK VARIANCE APPLICATION

TMK: 5-5-02:3
55-283 Kamehameha Highway
Laie, Oahu, Hawaii

January 2005

Prepared by:

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

#4-39

Table of Contents

Table of Figures

1.0 GENERAL INFORMATION

A. PROJECT LOCATION

55-283 Kamehameha Highway
Laie, Oahu

B. TMK, APPLICANT AND RECORDED FEE OWNER

TMK 5-5-02:3
Stanley and Donna Koki
Mailing Address: 45-496 Malio Place
Kaneohe, HI 96744
Telephone: (808) 630-1050

C. AGENT

Sea Engineering, Inc.
Attn: Marc Ericksen
Makai Research Pier
Waimanalo, HI 96795
Phone: (808) 259-7966
Fax: (808) 259-8143
Email: mericksen@seaengineering.com

D. LOT "B" AREA

Total	Erosion	Net
28,320 SF	6,591 SF	21,729 SF

E. ZONING: R-5 Residential District

2.0 LOCATION AND GENERAL DESCRIPTION OF THE PROPOSED PROJECT

This report has been prepared to accompany a Shoreline Setback Variance application to the City and County of Honolulu, Department of Planning and Permitting (DPP), for a shoreline lot in Laie, Oahu. The project site is located at 55-283 Kamehameha Highway on the northeastern coast of Oahu. The makai (ocean) side of the highway is almost completely developed with single-family homes, and the Polynesian Cultural Center is located on the mauka (landward) side. South of the cultural center the mauka land is undeveloped open space. Many homes are constructed as near the shore as legally possible, and where shoreline erosion has occurred many homes now extend into what would be the shoreline setback zone today. A general location map for the project area is shown on Figure 2-1, and a tax map key for the area is shown on Figure 2-2.

The project site is located at the south end of Laniloa Beach, an approximately one-mile long stretch of shoreline bounded by Laie Point to the north and Kehukuuna Point to the south. The beach typically varies in width from 20 to 50 feet, and is composed primarily of fine calcareous sand. The shoreline has a history of significant and chronic erosion, and the majority of shoreline homes have vertical seawall or sloping rock revetment shore protection. The report *Oahu Shoreline Study, Part 1 – Data on Beach Changes* (prepared by Sea Engineering, Inc. (SEI) for the City and County of Honolulu, Department of Land Utilization, 1989) documents a landward recession of the of the vegetation line since 1949, and states that "The south end of Laniloa Beach has a history of shoreline erosion problems, and this trend is expected to continue." Shoreline recession of about 65 feet through 1988 in the project vicinity was documented in the report, and additional erosion was documented during the 1990's. The shoreline at the project site is presently in a very eroded condition, with a 10 to 12-foot high vertical erosion scarp and undermined/fallen ironwood trees on the beach. The neighboring properties on both sides have rock revetment shore protection, and the continuing erosion of the applicant's shoreline is resulting in flanking damage to these existing revetments.

The applicants property is presently undeveloped, and the owners wish to construct a new single family home on the site. However, with the ongoing active erosion and shoreline recession, it is difficult to safely locate a home on the property with confidence that continuing erosion will not eventually place it in jeopardy. In addition, the erosion of the applicant's property is resulting in flanking of the adjacent rock revetments and damage to them. Damage to the end of the existing revetment on the south side has resulted in the top of the erosion scarp receding to within 30 feet of the existing home on the adjacent property. Given the current rate and pattern of erosion of the applicants shoreline it is estimated that the erosion scarp could soon be within 20 feet of the neighbors home. This has prompted the neighbor to write a letter to the applicant requesting that they construct shore protection to prevent further damage and risk to the home.

The existing condition of the shoreline is shown on the photographs on Figures 2.3, 2.4 and 2.5. The *Certified Shoreline* map is shown on Figure 2.6.

The location and layout of the home proposed to be built on the property is shown on Figures 2.7 and 2.8.

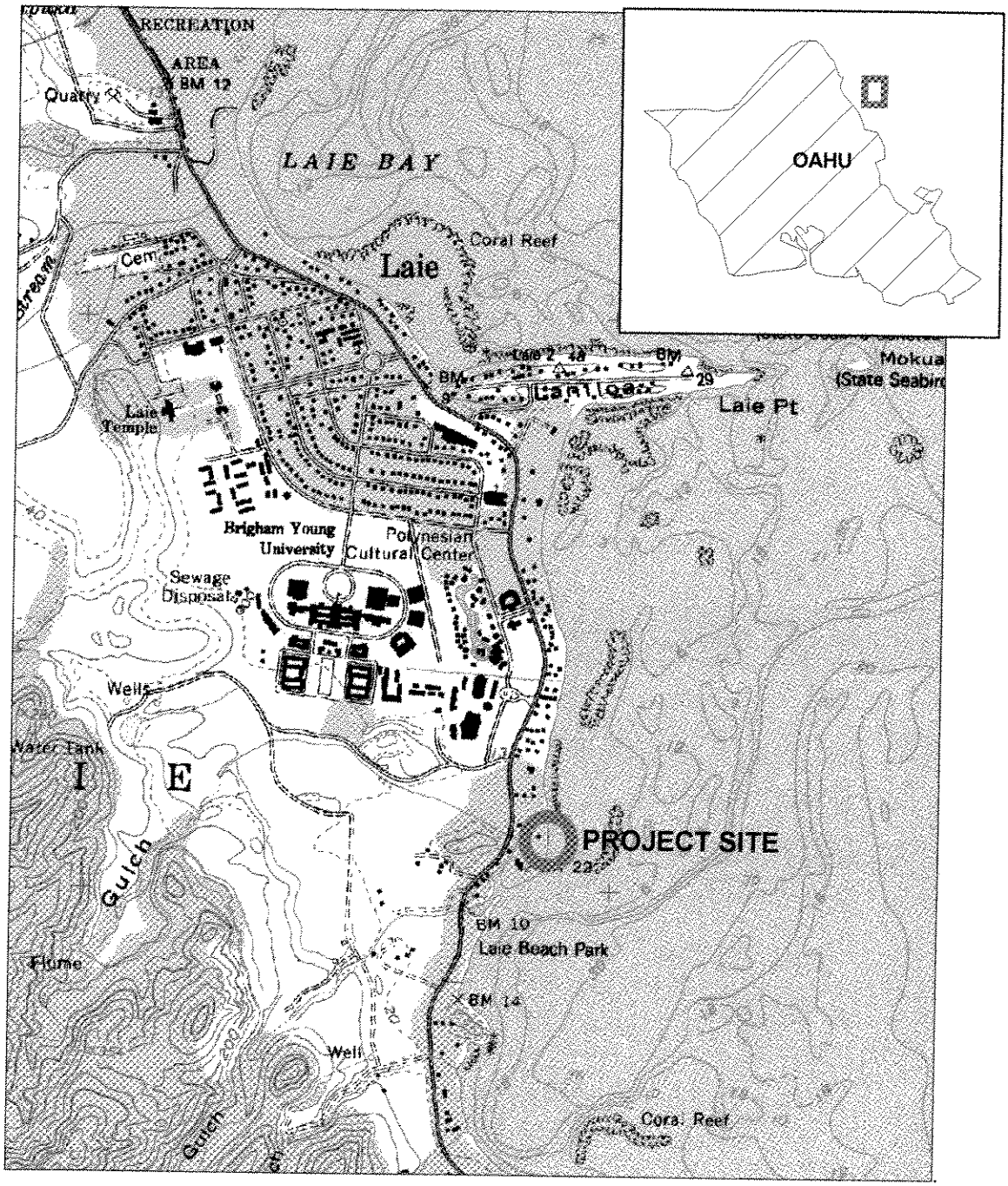


FIGURE 2-1. PROJECT LOCATION

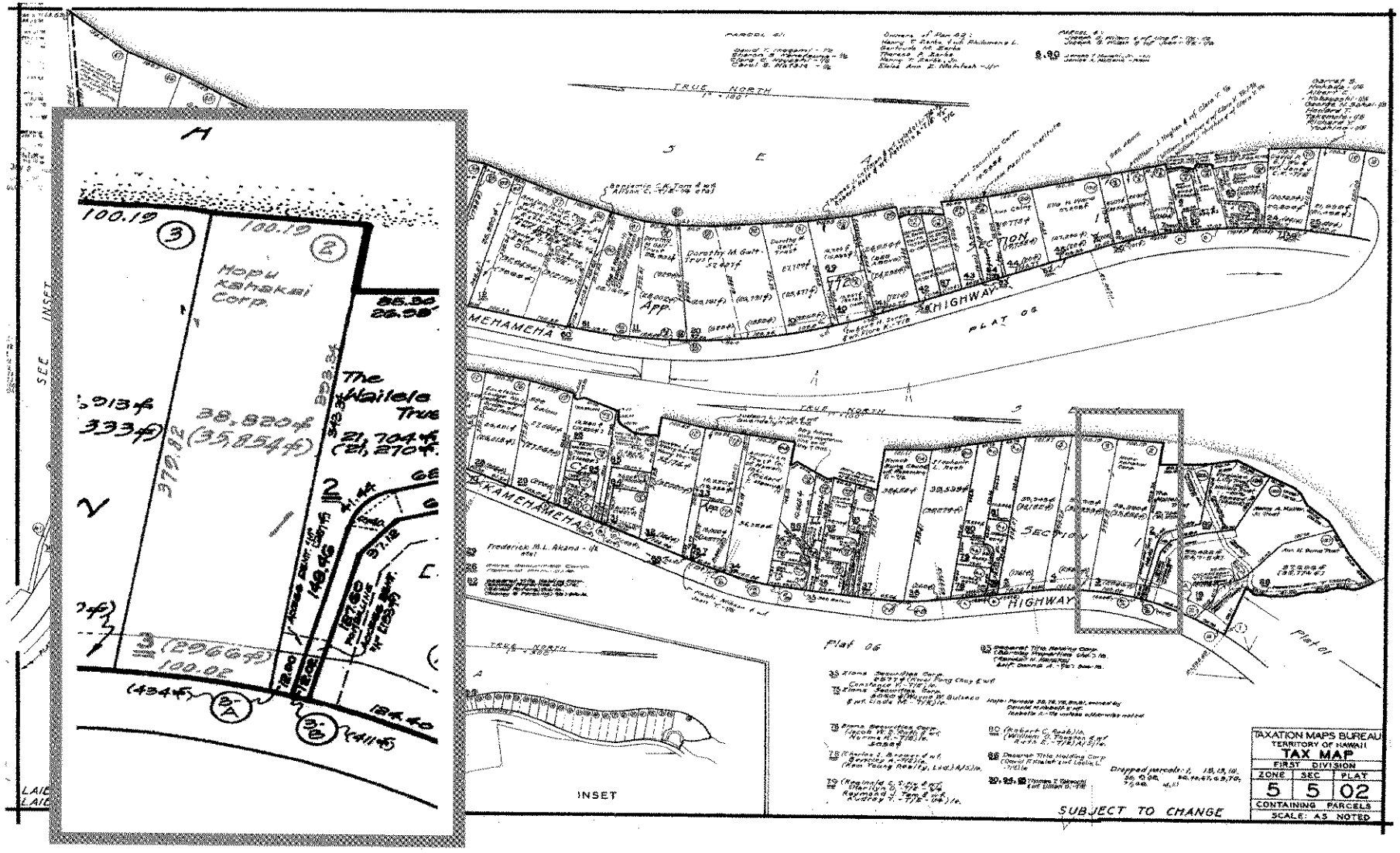


FIGURE 2-2. PROJECT VICINITY TMK MAP

FIGURE 2.3. PROJECT SITE LOOKING FROM NORTH TO SOUTH

FIGURE 2.4. PROJECT SITE LOOKING FROM SOUTH TO NORTH.

FIGURE 2.5. FLANKING EROSION DAMAGE TO EXISTING ROCK REVETMENT ON ADJACENT PROPERTY TO THE SOUTH.
(Note close proximity of home to the erosion scarp.)

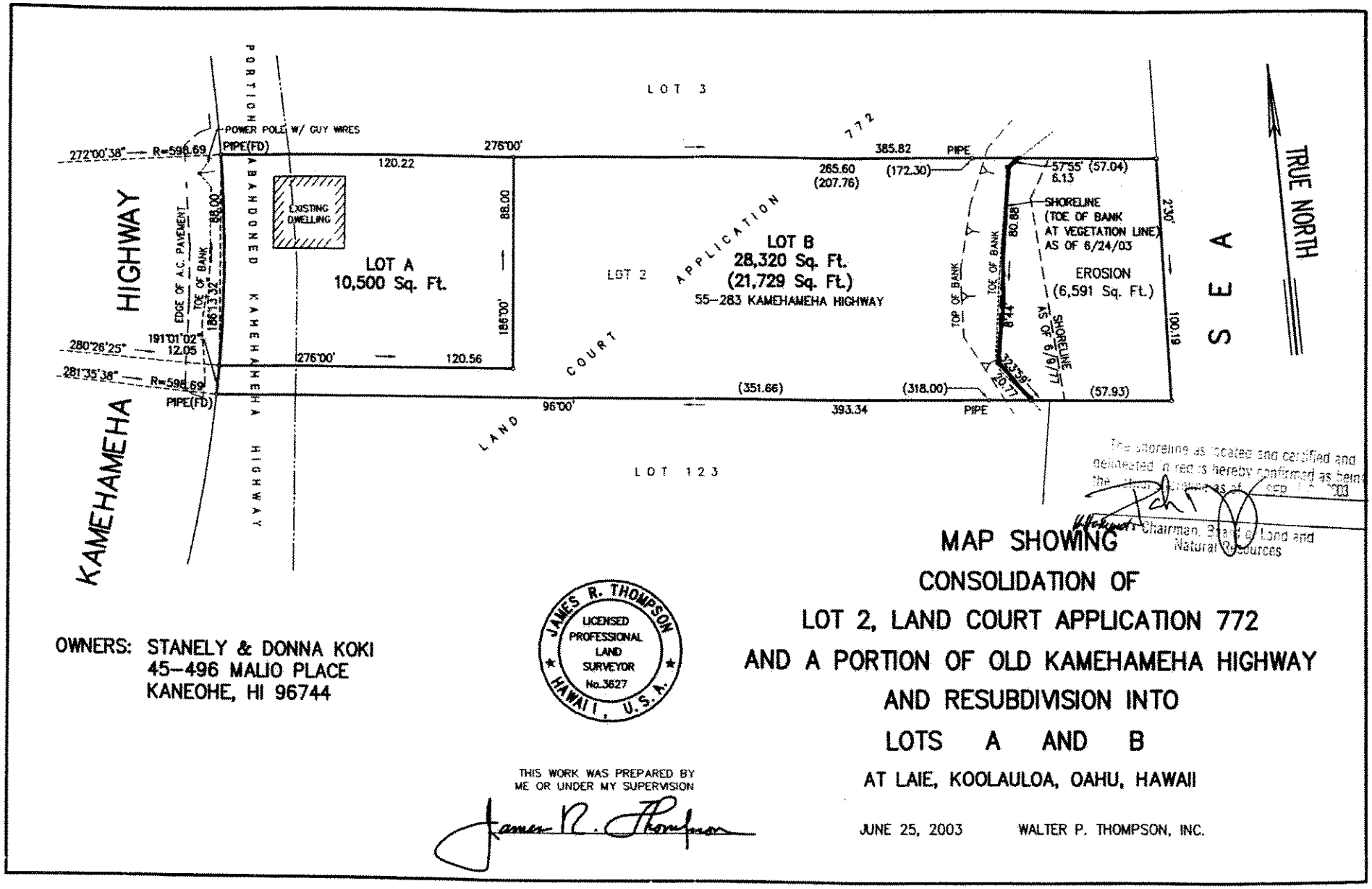
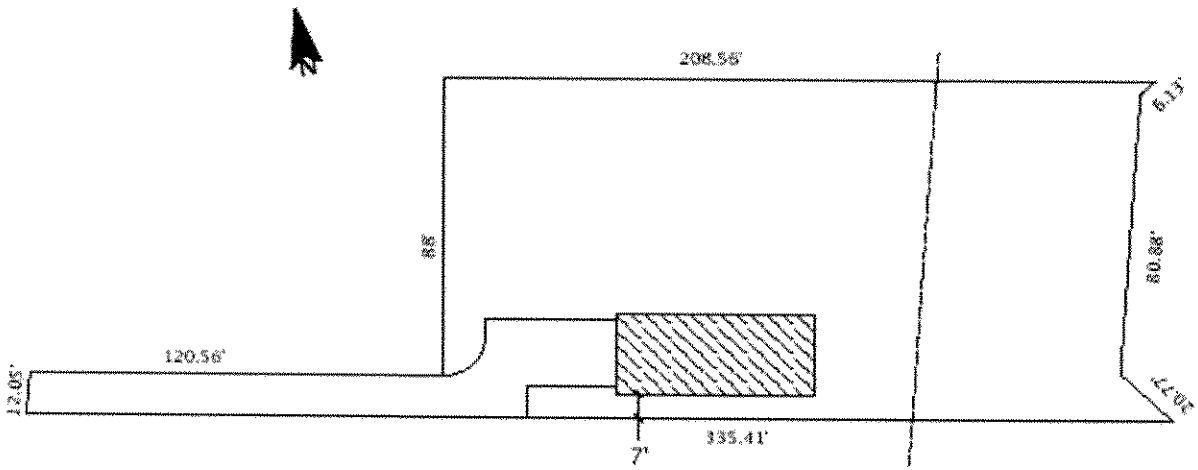


FIGURE 2.6. CERTIFIED SHORELINE MAP



Plot Plan

1" = 40'-0"

55-283 Kamehameah Hwy
Laie, HI 96762

TMK 5-5-0:3

MARK N MATSUMOTO
LICENSED PROFESSIONAL ARCHITECT
No. 7055
HAWAII, U.S.A.

Exp. 04/06

THIS WORK WAS PREPARED BY OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Observation of construction is defined in Section 16-40-2 of Chapter 16, Chapter 464 of the State of Hawaii Code of professional engineers, architects, surveyors and landscape architects of the State of Hawaii.

Signature

FIGURE 2-7. PROPOSED HOUSE LOCATION

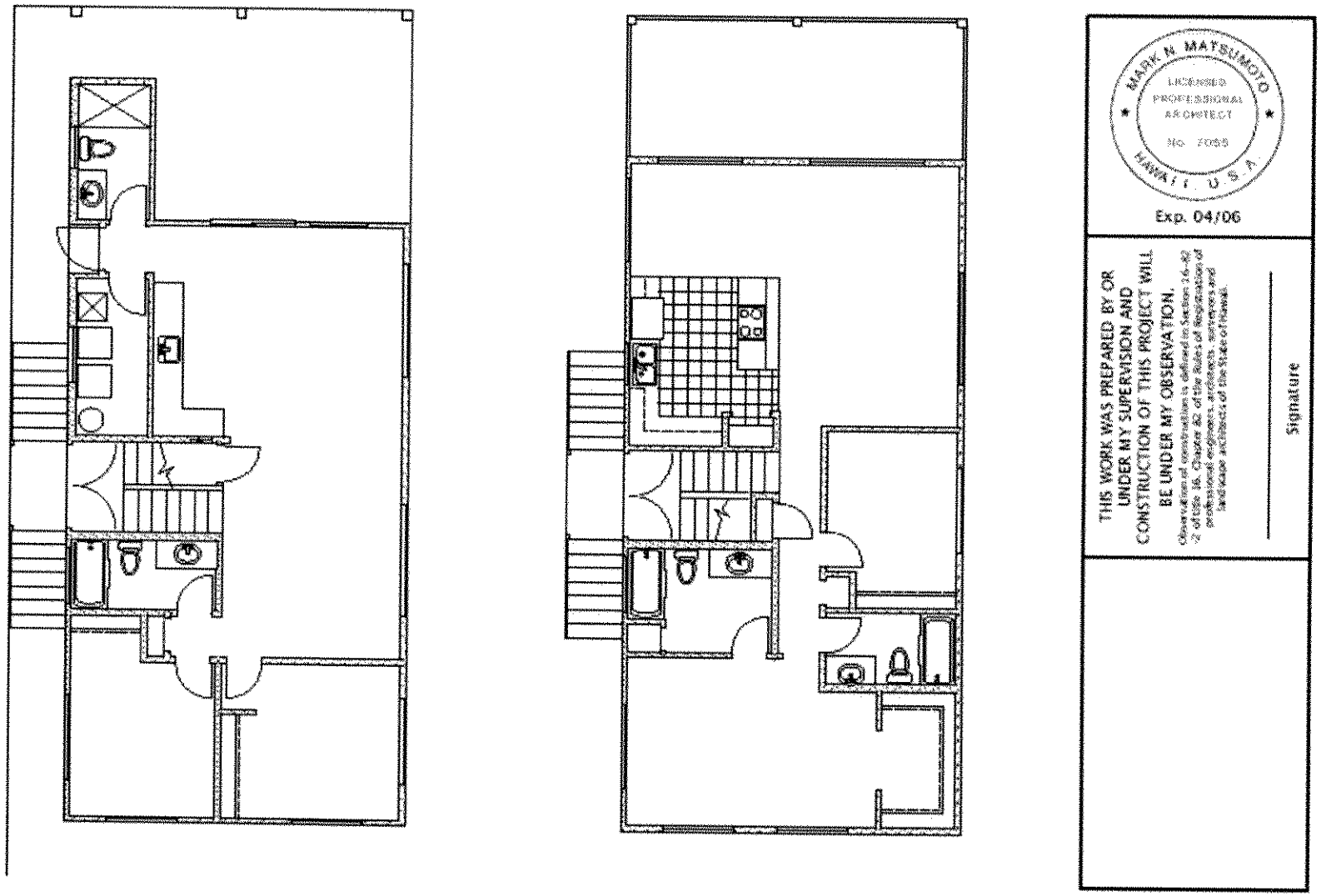


FIGURE 2-8. PROPOSED HOUSE LAYOUT

The owners of TMK 5-5-02:3 propose to construct a properly engineered sloping rock revetment to prevent further erosion and stabilize the shore fronting their home site. The revetment would be constructed landward of the September 10, 2003 certified shoreline and approximately 18 feet inland from the intersection of the mean higher high water line (+1.3-foot MSL) at the existing shoreline. Rock riprap with stones weighing 200 to 2,000 pounds (median weight of 500 pounds) would be placed over an underlayer of 10 to 40 pound stone and geotextile filter fabric. The revetment slope would be 1 vertical on 1.5 horizontal. The toe elevation would be –1 foot below mean sea level (MSL) and the crest elevation would be +10 feet MSL. A 5-foot-wide toe apron would be constructed to protect against scour and possible undermining of the revetment toe. A two-foot high CRM retaining wall will be constructed above the revetment crest to further stabilize the bank, then the ground will be graded to gently slope back to existing grade along the width of the property and then landscaped. A plan view layout drawing and typical cross section of the proposed shore protection are shown on Figures 2-9 and 2-10, respectively. The revetment design is based on a wave height of 2.8 feet at the structure, corresponding to a storm wave with an approximate recurrence interval of 10 years. The unprecedented occurrence of a hurricane near the project site could result in higher water levels and larger waves.

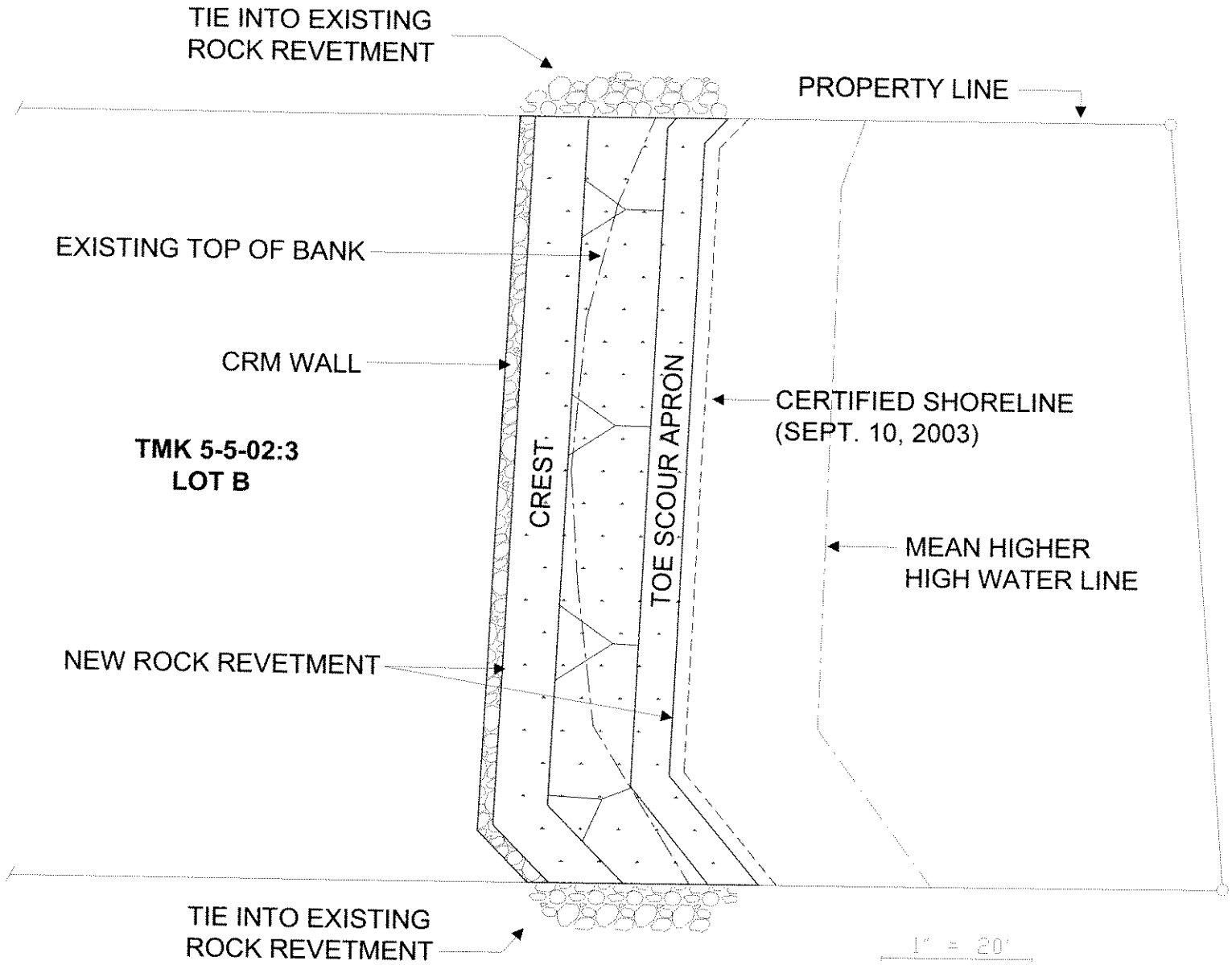


FIGURE 2-9. SHORE PROTECTION PLAN

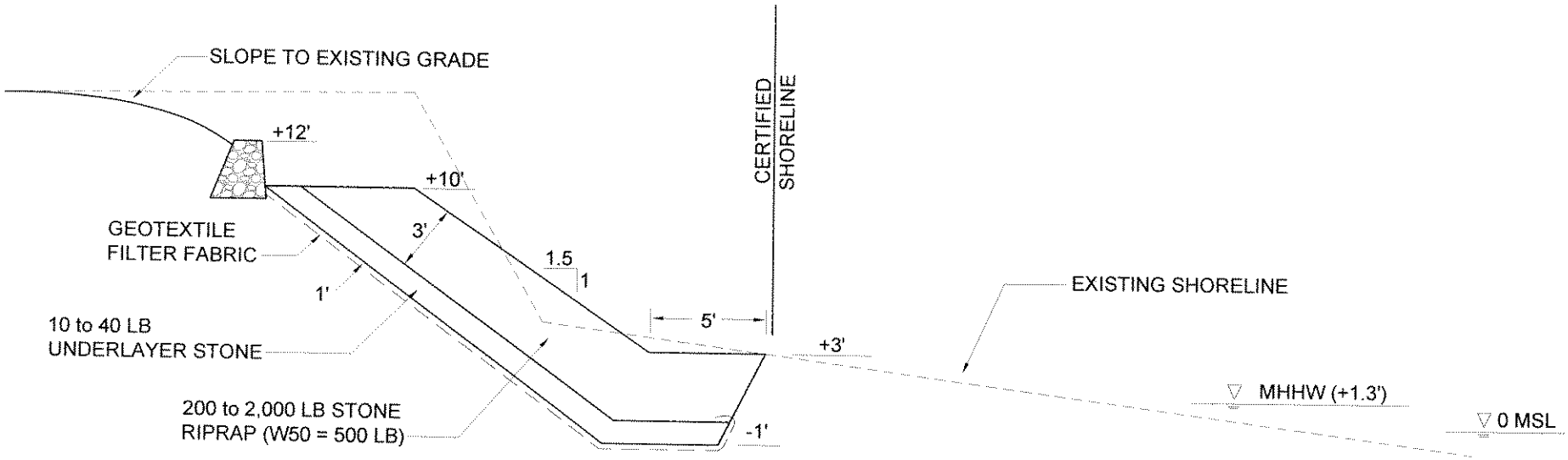


FIGURE 2-10. SHORE PROTECTION REVETMENT TYPICAL SECTION

3.0 COASTAL ENGINEERING EVALUATION

3.1 Shoreline Type and Characteristics

The project site is near the southern end of Laniloa Beach, an approximate one-mile long stretch of shoreline running north-south between Laie (Laniloa) Point to the north and Kehuku'una Point to the south. The shoreline is primarily sand and exposed beachrock, fronted by a shallow fringing reef. An emergent beach rock bench is located about 150 feet offshore, and parallels the shore for a distance of about 1,200 feet north of the project site. The shoreline landward of this feature is known locally as "bathtub beach." The nearshore reef flat is primarily consolidated limestone rock with pockets of sand and rubble. General shoreline and nearshore physical characteristics are shown on Figure 3-1. The shoreline is heavily eroded, with almost all of the shoreline in the project vicinity protected by rock revetment or seawalls, and a rock groin approximately 1,000 feet north of the project site blocks longshore sand transport. In fact, the applicants' property is the last remaining property along this shore without permanent shore protection.

The applicant's shoreline consists of a steep sand bank extending from the lot elevation of +14 to +16 feet above mean sea level (msl) down to the top of the sand shore at about +5 feet msl, and a sand beach about 30 feet wide with a slope of about 1 vertical on 12 horizontal. The remains of large ironwood and Milo trees which have been undermined by the erosion litter the shore. The shoreline in the project vicinity is shown on the photographs on Figures 2.3 to 2.5. A topographic map of the project site is shown on Figure 3.2.

3.2 Existing Shoreline Structures

As previously stated, with the exception of the applicants' property, all of the residential home sites in the "bathtub beach" area are protected by sloping rock revetments or concrete-rubble-masonry seawalls. Most of these shore protection structures were built in the 1970's and '80's in response to the chronic erosion, and allegedly most if not all were built without permits, although some have subsequently received after-the-fact permits from the City and County. Two properties approximately 500 feet north of the project site obtained Shoreline Setback Variance approval from the Department of Planning and Permitting in 2003 to construct rock revetment shore protection. The existing structures along the shoreline are identified on Figure 3-3.

The adjacent properties on both the north and south sides of the applicant have rock revetment shore protection. End effects and flanking of these revetments has exacerbated erosion of the applicants' unprotected shore, and has damaged the ends of the adjacent revetments.

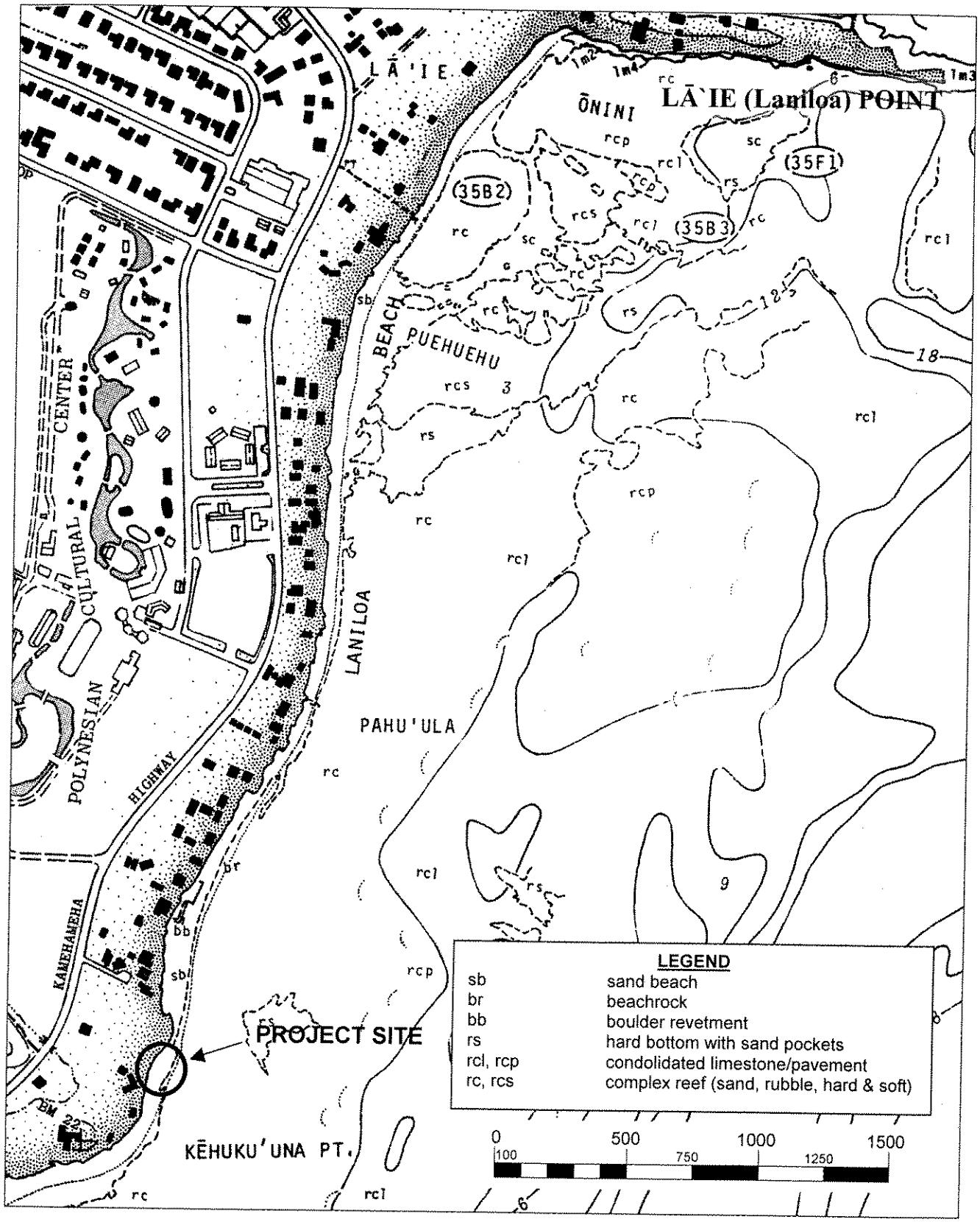


FIGURE 3-1. SHORE AND NEARSHORE CHARACTERISTICS
(from AECOS, 1981)

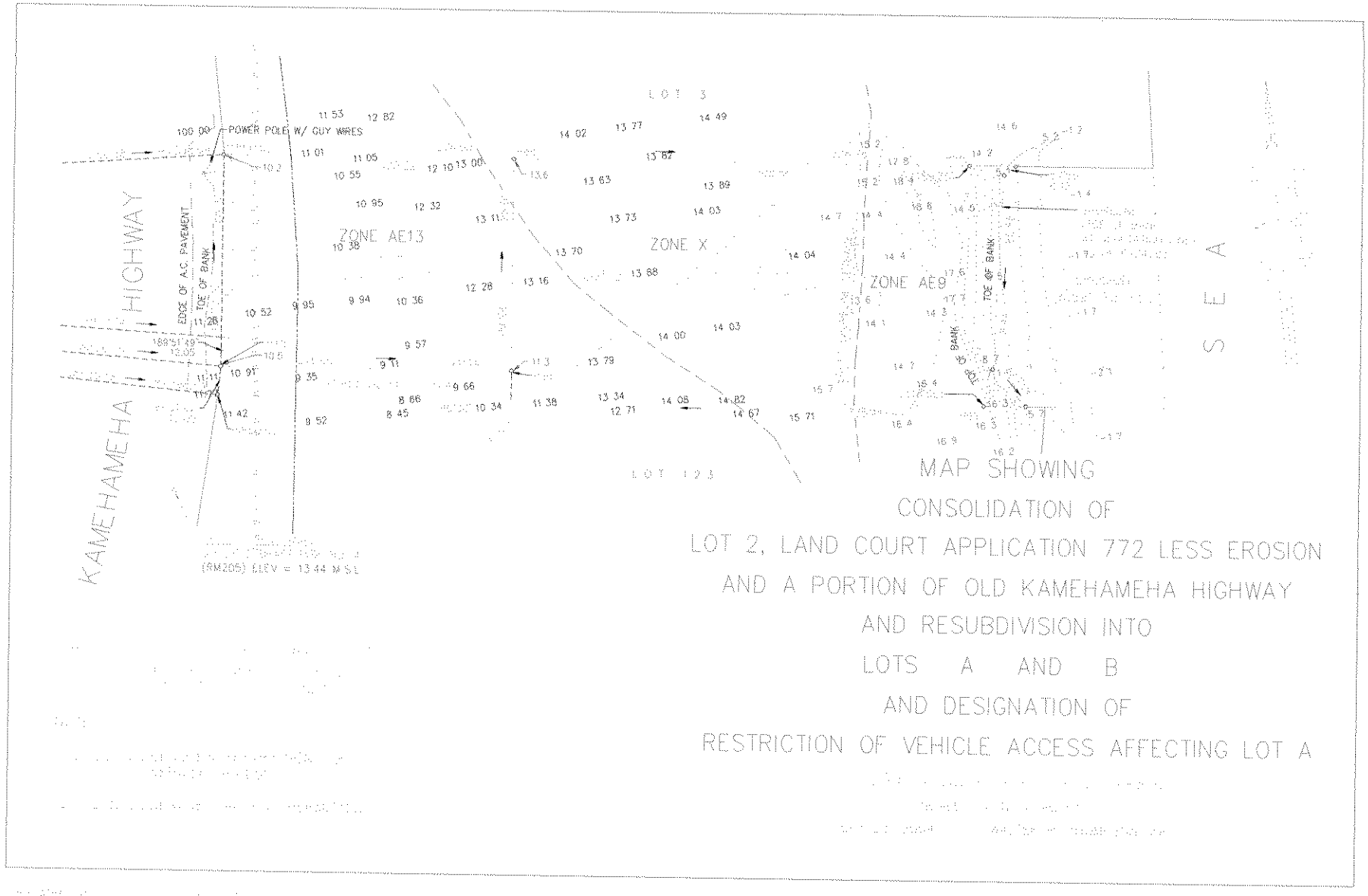


FIGURE 3-2. PROJECT SITE TOPOGRAPHY

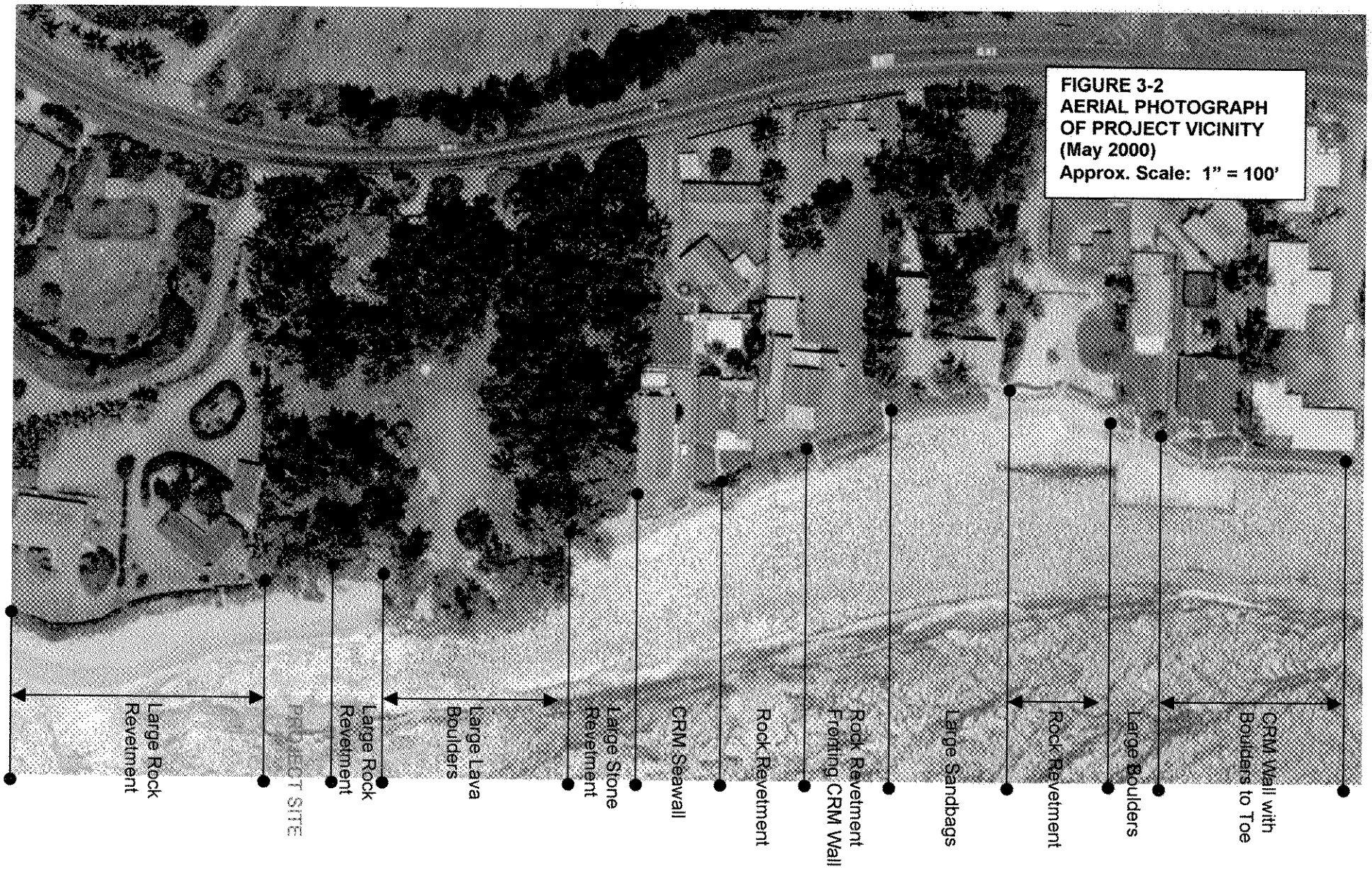


FIGURE 3-3. AERIAL PHOTOGRAPH OF PROJECT VICINITY (MAY 2000)

3.3 Shoreline History

Hwang (1981) used historical aerial photograph analysis to assess shoreline change around Oahu, based on movement of the vegetation line. During the 25-year period between 1949 – 1975 the middle and south ends of Laniloa Beach experienced "severe erosion." The shoreline in the vicinity of the applicants' property had the worst erosion problem, with continuous erosion throughout the period. The shoreline eroded as much as 65 feet, or about 2.6 feet per year. Hwang noted fallen trees on the aerial photographs, and during a 1980 field check he noted waves breaking against the 15-foot-high shoreline escarpment and large trees on the beach and being undermined. He also noted stone walls and piles of boulders place to protect the homes. Hwang reports that between 1972 and 1975 one house was removed as a result of the erosion, and in 1975 several homes were within 30 feet of the vegetation line.

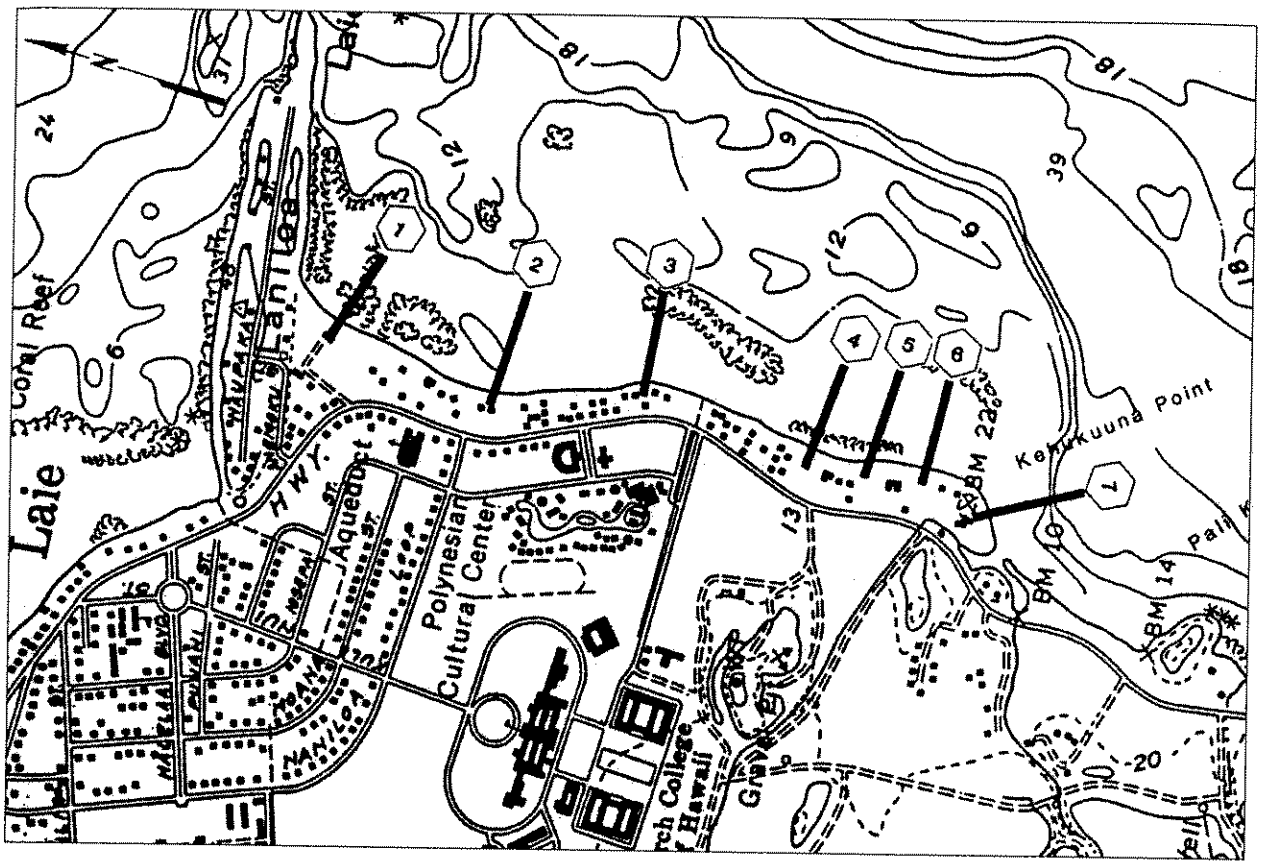
Sea Engineering, Inc. (1988) updated Hwang's work through 1988 for the City and County Department of Land Utilization (now Department of Planning and Permitting). Erosion continued on the unprotected Laniloa Beach shorelines, and erosion was also apparent at the north end of the beach, adjacent to Laie Point, which had previously been relatively stable. A summary of the Hwang and Sea Engineering data is shown on Figure 3-4. The project site is located near Transect Number 6. At the Transect 6 location, adjacent to the project site, boulders were placed on the shore sometime prior to 1964, stopping further erosion at this location. However the applicants unprotected property has continued to erode.

3.4 Coastal Processes and Sand Transport

The history of shoreline change tells much about the sand transport characteristics along Laniloa Beach. At the north end of the beach, in the lee of Laie Point and thus partially protected from winter season large north swell, sand appears to move predominantly northerly, presumably in response to the prevailing northeast tradewind generated seas. Northerly transport is consistent with the overall accretion at the north end of the beach over the past fifty years.

A storm drain outlet structure is located a little south of the middle of the beach, which extends through the beach and about fifty feet into the water, thus acting like a groin. The beach is roughly similar on both sides of the drain, thus no predominant direction of sand transport is evident by an accreted up drift side or eroded downdrift side of the groin-like structure. The shoreline change analysis shows relative stability in this vicinity, with small movement of the vegetation line but no net change over 50 years. There are also fewer shore protection structures located along this stretch of the beach.

The southern end of the beach, the "bathtub beach" area, shows a strong and dominant southerly sand transport. This is presumably due to the effect of the shallow emergent limestone bench which parallels the shore about 100 to 150 feet seaward of the waterline with a top elevation about 0 to +1-foot msl). Waves approaching the shore break on the shallow bench, and water



LEGEND

TRANSECT LOCATION

Laniloa Beach. Changes in the Vegetation Line (in feet)

Observation Period	Transect Number						
	1	2	3	4	5	6	7
Sep 28, 1949 – Jul 23, 1959	-8	8	2	-35	-44	-22	-4
Jul 23, 1959 – May 12, 1964	11	1	-9	4	-6	-5[1]	*
May 12, 1964 – Apr 23, 1967	-8	1	-1	2	-2	*	-28[2]
Apr 23, 1967 – May 26, 1972	3	-3	11	-2	-14	*	8
May 26, 1972 – Apr 13, 1975	1	8	-6	-3	-4	*	-6
Apr 13, 1975 – Feb 03, 1988	-11	-15	4	-32	5	*	-4
Net Change – Vegetation Line	-12	0	1	-66	-65	-27	-34
Range – Vegetation Line	15	15	11	66	70	27	34

* *No Data*

1 To Boulder Wall

2 Change from 1959 – 1967

Net change is the total change in the position of a beach index line between the earliest and most recent observation year.

Range is the difference between the observed extremes in the position of a beach index line.

Transect locations and historical data from Hwang, Table 17.

Transect 8 was outside the study area.

FIGURE 3-4. SHORELINE CHANGE 1949 – 1988
(from Sea Engineering, Inc., 1989)

ponds between the bench and the shore causing a slight water level increase or setup at the shore. This setup is relieved by a current flow along the shore to the south and out the southern end of the bench in the vicinity of the deeper water near the Koloa Stream mouth at Kehuku'una Point.

A rock groin constructed at the north end of the bench restricts water flow northward, further forcing the southern flow of water. The effect of the bench can be seen in the photograph on Figure 3-3.

The erosion along Laniloa Beach has almost certainly been exacerbated by the proliferation of shoreline hardening structures. It is typical for structures on a sandy shoreline to have an adverse impact on adjacent unprotected shores. Reflection and turbulence at the ends of the structures, plus their impact on the natural sand transport processes, typically result in an increase in erosion for some distance from the ends of the structures. For these reasons, shore protection structures on sandy shores should be carefully designed, and should not be constructed randomly or piecemeal along the shore. Ideally, all the property owners along a shoreline requiring shore protection should work together to effect a common solution. If they don't, the first person to build a wall may simply start a chain reaction, as one property owner after another is forced to build something to stop the erosion aggravated by his neighbor's structure, and the problem gets transferred down the shore from one property to the next. This is certainly evident in the recent history of Laniloa Beach.

3.5 Coastal Hazards

In addition to the chronic erosion hazard, the project site is exposed to storm waves and possible tsunami inundation. The coast is directly exposed to the prevailing tradewind generated seas, as well as partially to directly exposed to large winter season north swell generated by north Pacific storms. The coast could also be subject to 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. These waves refract and diffract around Kahuku Point and approach the project site obliquely. North swell does occasionally approach the site more directly from the north to northeast. The shoreline is protected from direct large wave attack by the wide, shallow fringing reef fronting the shoreline. Large waves break offshore, and then reform and continue shoreward as smaller waves. Wave breaking and reforming may occur several times before the wave finally expends its remaining energy on the shore. The waves reaching the shore are limited by the nearshore water depth, and on a wide and shallow reef typically have a height equal to about 0.6 times the water depth. Winter high tides can be +1.5 to +2 feet above msl, and wave setup along the shore during periods of high surf may add another 0.5 feet to the water level. Assuming a high tide of +1.5 feet, a 0.5-foot wave setup, and a water depth of –3 feet below msl immediately seaward of the

offshore emergent limestone bench, wave heights of about three feet can be expected to break on the offshore bench. Wave heights on the beach at the base of the shoreline escarpment would be less than three feet. This corresponds to storm waves with an approximate recurrence interval of 10 years. Thus, although the occurrence of large north swell is a significant factor in the erosion problem, they do not directly pose a hazard to homes located on the high escarpment.

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 and worst case wave runup elevations along the shore in the vicinity of the project site were determined to be 7.2 feet and 8.7 feet above msl, respectively. Thus the applicants' property, located about 15 feet above msl, is well above the direct hurricane storm wave impact zone. The effect of hurricane storm waves on erosion of the unprotected shore, however, could well pose a hazard to a home located on the property.

The Federal Emergency Management Agency (FEMA), Flood Insurance Rate Maps (FIRM), label the shoreline in the general project area as an AE Zone – Special Flood Hazard Area Inundated By a 100-Year Flood, with a base flood elevation of +9 feet. Thus, again, the applicants' property is above the flood hazard zone.

4.0 ENVIRONMENTAL SETTING

4.1 General Description

The project area is a well-developed residential neighborhood, with single-family homes along the shore. Land use designation by the State is Urban, and City and County of Honolulu zoning is R-5 Residential. Many of the lots are owned in fee simple, while others are owned by Zion Security Corporation and leased to the homeowners. All the shoreline lots in the project vicinity, with the exception of the applicant, have revetments or seawalls to provide shoreline erosion protection.

The only public access to Laniloa Beach is located at the north end, at 55-479 Kamehameha Highway. Two sand pockets on the reef near the access (Onini and Puehuehu) provide the only good swimming spots along the entire beach (Clark, 1977). The closest public park is located at Pounders Beach, south of Kehuku'una Point and approximately 1,500 feet south of the project site.

The shoreline in the project vicinity is sandy, with considerable beachrock and raised limestone reef rock. Backshore elevations range between about 10 to 15 feet above msl. The applicants' shoreline is a high, steep sand and earth escarpment, with an elevation of about 15 feet above msl. The shoreline has a long history of serious and chronic erosion and recession. Almost all of the shoreline in the project vicinity is presently hardened against erosion. The shoreline is

fronted by a fringing reef, composed primarily of consolidated limestone reef pavement with some sand and rubble. Large storm waves break offshore in deeper water, and proceed shoreward as smaller reformed waves. Wave action breaking over a raised limestone bench which parallels the shore about 100 to 150 feet offshore of the project site results in a south flowing current along the shore which contributes significantly to the erosion problem.

4.2 Oceanographic Conditions

Wind - The prevailing winds are the northeast tradewinds, which blow 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 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) westerly (kona) storm waves. The project site is completely sheltered from south swell and kona storm waves by the island of Oahu. The site is directly exposed to tradewind seas approaching from the northeast. These 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.

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 approached 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, and heights of 20 feet plus are common. The project site is partially sheltered from the approach of north swell by the northern tip of the island, with only the more northerly waves arriving at the windward shoreline without extensive height reduction due to refraction and diffraction.

Approaching deepwater waves break offshore in deeper water, then reform and proceed shoreward as smaller waves until finally reaching the shore. Nearshore wave heights on the fringing reef are 3 feet or less during typically prevailing annual wave conditions.

Tide – The tides in Hawaii are semi-diurnal with pronounced diurnal inequalities; i.e. two tidal cycles per day with unequal water level ranges. The mean tidal range is 1.3 feet and the diurnal range is 2.2 feet at Laie Bay, immediately north of the project site. General tide data for the site is as follows, based on a mean sea level (msl) datum:

mean higher high water	1.3 feet
mean high water	0.7 feet
mean sea level	0.0 feet
mean low water	-0.6 feet
mean lower low water	-0.9 feet

Hurricanes – Tropical cyclones originate over the warm ocean, and when the wind speed exceeds 64 knots they are considered hurricane strength. 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, hurricane 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. No significant wave action was experienced on the northeast facing shore in the project area from either of these storms. Possible wave runup elevations on the shoreline resulting from direct hurricane storm attack on the project site has been estimated by Sea Engineering, Inc. (1990) to be 7.2 feet and 8.7 feet for a typical and worst case hurricane event, respectively. The applicants property is thus above the estimated hurricane runup elevation.

Tsunamis – The Hawaiian Islands have a history of destructive tsunami occurrences. Four significant tsunamis have occurred in recent history – 1946, 1957, 1960 and 1964. The 1946 tsunami was generated in the Aleutian islands, and was one of the most destructive tsunamis to strike Hawaii. The water level rise at the shoreline in the project area was 9 to 14 feet (Loomis, 1976). Based on methodology used to develop the Flood Insurance Rate Maps (FIRM) for the state, the predicted 10 and 100-year tsunami elevations are +3 and +8.5 feet msl, respectively (M&E Pacific, Inc., 1978). The applicants' homes are thus above the estimated tsunami runup elevation.

4.3 Marina Flora and Fauna

The following discussion of marine flora and fauna in the vicinity of Laniloa Beach is taken from the *Hawaii Coral Reef Inventory, Island of Oahu* (AECOS, 1979). "Coral cover is sparse (not exceeding 3%) on the shallow reef flat and reef slope off Laniloa Beach. *Porites lobata* is the predominant coral. Algal cover, on the other hand, is high in these areas, reaching 90% of the bottom in some places. Directly south of Laie Point, *Porolithon* sp. and *Asparagopsis taxiforma* are abundant. Coral cover reaches 20% near the breaker zone. *Montipora flabellata* is the dominant species, followed in abundance by *Porites lobata*. *Abudefduf abdominalis* (sergeant major or "mamo") is common on the reef flat. In deeper water (-5 to –15 feet) of the reef front at least 27 species of fish are recorded. However, none can be considered common in occurrence."

4.4 Water Quality

Nearshore waters are designated "Class A" open coastal waters (HAR 11-54-6). Nonpoint source runoff and stream discharges are significant, and coastal waters are generally discolored by red sediment after heavy rains (AECOS, 1979).

4.5 Coastal Use

The only public access is located at the north end of the beach, approximately 3,500 feet from the project site. A sand channel and two sandy-bottomed pockets in the reef in the vicinity of the public access form the only good swimming spots along the entire beach (Clark, 1977). Laie Point and the reef flat off Laniloa Beach are moderately fished by sport and subsistence fishermen (AECOS, 1979). Generally, pole and throw-net fishing for reef fishes is commonest along Laie Point. Spearfishing, pole fishing, and net laying occur primarily on the reef flat off the beach. There is some board surfing in the vicinity of Laie Point when the waves are high.

5.0 ALTERNATIVES CONSIDERED

Alternatives to the proposed revetment construction include no action, sandbags, beach restoration and nourishment, and construction of a vertical seawall.

5.1 No Action

The project site has a 50-year history of severe, chronic erosion. The shoreline in the project vicinity receded as much as 65 feet during the 40-year period between 1949 and 1988. The eroding shoreline is presently flanking the existing rock revetment shore protection on both sides of the applicant, and the top of the eroded bank is presently within 30 feet of the home located on the south side of the applicant. All the other homes in the project vicinity have either seawalls or sloping rock revetment shore protection. If shore protection is not provided for the applicant's property it will be difficult to safely locate the home proposed to be constructed on the site. In addition, it is estimated that the continuing erosion and shoreline recession, and resultant damage to the neighbors existing shore protection, will soon result in the erosion scarp being within 20 feet of the existing home to the south. Thus no action is not a viable option for this site.

5.2 Sandbags

State DLNR has granted permission for nearby property owners to place large sandbags (Seabags) on the beach fronting their property as temporary erosion protection. The bags provide some short-term erosion protection, but they are typically undermined and displaced by wave action. In addition, the bags require constant maintenance. Any cut or damage to a bag results in the rapid displacement of sand from the bag rendering it useless. Vandalism is a particular problem, and has resulted in the loss of numerous bags. Therefore, the use of sandbags is not considered a satisfactory permanent solution to the erosion problem.

5.3 Beach Nourishment

Constructing and nourishing a protective beach by placing suitable sand in an appropriately designed manner along a shoreline can be an effective and attractive means of mitigating beach loss and protecting against shoreline recession. Unfortunately, the erosion potential of the project site as demonstrated by the long history of shoreline recession makes maintaining a protective beach at this site virtually impossible. In 1998, the State Department of Land and Natural Resources approved placement of 200 cubic yards of sand on the beach fronting property 500 feet to the north. This sand was rapidly eroded and quickly disappeared. It would take significant stabilization structures, such as groins extending perpendicular from the shore into the water or an offshore breakwater parallel to the shore, to retain sand at the site, and even then there would likely be a need for extensive maintenance and regular renourishment. In addition, beach stabilization structures would have to be built seaward of the certified shoreline, on State Conservation District submerged land. Beach restoration is also not very compatible with the existing seawall and revetment shore protection on both sides of the applicants' property. Beach restoration and nourishment is therefore not considered a viable long-term erosion control measure for this site.

5.4 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. However the impervious and vertical face of a seawall results in very little wave energy dissipation. Wave energy is deflected both upward and downward, and also a large amount of wave energy is reflected seaward. The downward component can cause scour at the base of the wall, and thus the foundation of a seawall is critical for its stability, particularly on a sandy and eroding shoreline. Ideally a seawall should be constructed on solid, non-erodable substrate. Seawalls are not flexible structures, and their structural stability is dependent on the stability of their foundations. Reflected wave energy can inhibit beach formation in front of the wall, and thus seawalls are not the best alternative if maintaining a beach seaward of the structure is desired.

5.5 Revetment

A revetment is a sloping uncemented 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. Damage from large waves is typically not catastrophic, and the revetment can still function effectively even if damage occurs. The rough and porous surface and flatter slope absorb and dissipate more wave energy than smooth vertical walls, thus reducing wave refection, runup and overtopping. Thus there is a greater likelihood of sand accumulation seaward of the structure. The sloping revetment does occupy more horizontal space and has a larger footprint that a seawall would. Because of its durability, particularly considering the potential instability of the erodable sand shoreline on which it would be constructed, and the greater likelihood of sand retention on the shore fronting the structure, a rock revetment is considered the best erosion control/shore protection measure for the site.

6.0 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 severely eroded sandy shoreline, with existing shoreline trees being lost due to the erosion and shoreline recession. Construction of shore protection would protect the remaining backshore trees. There is no significant flora or fauna which would be lost due to construction of the revetment, and no threatened or endangered species would be impacted by the project. The revetment will occupy approximately 2,500 square feet of shoreline area, replacing the eroding bank with a stable sloping rock revetment. The overall appearance of the site will be improved. 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 – the closest public access is 3,500 feet to the north. There will be no significant change in lateral access along the shore, which is already hampered by the almost completely armored Laniloa beach shoreline. 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 September 10, 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 along the shore, and thus will be separated from the nearshore water by the existing sandy shoreline. The natural barrier provided by the beach will be maintained throughout the construction, and will prevent environmental impact to nearshore State waters.

(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 revetment would have some positive economic impact to the applicant and their neighbors by preventing further erosion and loss of land, as well as providing flanking erosion protection for the existing shore protection on adjacent properties.

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

(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 bare eroded sand and earth. The project

will permit landscaping of the shore above the revetment, improving the visual and aesthetic nature of the shore. The proposed rock revetment is visually consistent with the existing protected shore on both sides of the project site.

(8) *"Has cumulative impacts."* The revetment 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 its 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 revetment will be located behind the mean higher high tide shoreline, and the existing sand beach will be maintained during construction to act as a natural turbidity barrier. No material will be placed in the nearshore 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. Stone would come from existing operating quarries or field stone borrow sites. 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 or front end loader). Construction work would be restricted to the hours of 7:30 am to 5 pm Monday through Friday to reduce noise impacts to the neighbors.

(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 project site is subject to severe and chronic shoreline erosion. The existing home located on the adjacent property to the south is located within 30 feet of the top of the eroding bank – the proposed revetment will eliminate the erosion hazard to this home. The Federal Flood Insurance Rate Map (FIRM) indicates that the general project area is within the AE Zone (special flood hazard area inundated by a 100-year flood) with base flood elevation of +9 feet msl – thus the proposed revetment would be in the 100-year tsunami zone. The existing ground elevation of 15 feet is well above the flood level. A Flood Hazard District Certification has been provided with the Shoreline Setback Variance application to the City & County. The revetment may be subject to prevailing wave conditions at the shoreline, particularly during winter season high surf from North Pacific storms, and the revetment has been designed to be stable under possible severe wave conditions at the site. The revetment will provide erosion and storm wave protection for a home proposed to be constructed by the applicants on the property.

(12) *"Substantially affects scenic vistas and viewplanes identified in county or state plans or studies."* Private property, most of which is developed with homes, lies between the coastal highway and shoreline in the project area, and it is not possible to see the shore for a significant distance either side of the project site. In addition, existing ground

elevation at the site is about +15 feet msl, and the crest of the proposed revetment will not extend above the existing ground level. There is no public access to the shore for several thousand feet north or south of the project site, so the revetment will not be readily visible to the public.

(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.

7.0 MITIGATION MEASURES

1. All construction would be done landward of the mean higher high tide elevation, and the natural sand beach would be maintained as a barrier between the nearshore water and the construction activity. In addition, a silt fence seaward of the revetment toe will be erected and maintained during the construction period.

2. Work would be limited to the hours between 7:30 am and 5 pm to reduce the disturbance to neighboring properties.

3. 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. No construction material shall be placed or stockpiled outside of the immediate area of construction.
    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) No construction equipment shall operate in the water, nor shall any construction take place below the mean higher high water line.
    f) A dust control program will be implemented, and wind blown dust shall be prevented from blowing into the water by watering when necessary.
    g) All excavated material will be placed on the land behind the excavation and contained within soil or sandbag berms to prevent any runoff back into coastal waters.
    h) No discharge of dewatering effluent back into coastal waters will be permitted.

4. Should iwi (bones) or Native Hawaiian cultural or traditional deposits be found during ground disturbance for construction of the revetment, work shall cease and the State Historic Preservation Division, Department of Land and Natural Resources notified immediately (telephone 692-8015).

5. Public access along the shoreline during construction shall be maintained so far as practicable and within the limitations necessary to ensure safety. No impediment to

public access along the shore shall be placed in the State conservation district seaward of the certified shoreline.

8.0 SHORELINE SETBACK VARIANCE JUSTIFICATION

The shoreline at the project site is subject to well-documented, chronic erosion. The vegetation line in the project vicinity receded up to about 65 feet during the 40-year period between 1949 and 1988. Various forms of shore protection have been constructed along the majority of the shoreline in the project vicinity. At present, the applicants property is the only property without permanent shore protection along the entire south end of Laniloa Beach. Erosion and recession of the unprotected shoreline is resulting in flanking damage to the existing rock revetment shore protection on both sides of the applicants property, and the erosion scarp is presently within 30 feet of the existing home on the south side. The adjacent homeowner to the south has requested that the applicant construct shore protection to stop the erosion and threat to his home. The applicant proposes to construct a single family home on the lot, however the on-going erosion makes it difficult to properly site the home without possibly incurring an erosion threat in the future.

Properly designed and constructed shore protection is required to stop the erosion and protect the existing and proposed homes, as well as prevent further damage to the adjacent existing shore protection revetments. The proposed sloping rock revetment is considered the best alternative for this location. The revetment would be constructed entirely landward of the mean higher high tide elevation, and landward of the September 10, 2003 certified shoreline. No significant environmental impacts would result from the construction. The revetment will provide permanent protection for the homes, and will be consistent with the shore protection already in place along the rest of the shoreline in the project area. The present shoreline is badly eroded, with fallen trees littering the shoreline, and properly designed and constructed shore protection would improve the overall appearance of the shoreline.

9.0 PUBLIC AND AGENCY INVOLVEMENT, REVIEW AND CONSULTATION

The following agencies were consulted during preparation of the Draft Environmental Assessment (DEA):

- City and County of Honolulu, Department of Planning and Permitting
- State of Hawaii, Department of Land and Natural Resources
- U.S. Army Corps of Engineers, Honolulu Engineer District

Notice of the availability of the Draft EA was made in *The Environmental Notice*, published by the State Office of Environmental Quality Control, in the October 8, 2004 issue. The Draft EA was also sent to concerned Federal, State and County agencies for their review. Draft EA review comments were received from the following agencies:

- City and County of Honolulu, Department of Planning and Permitting

- State of Hawaii, Office of Environmental Quality Control
- State of Hawaii, Office of Hawaiian Affairs
- State of Hawaii, Department of Health
- U.S. Army Engineer District, Honolulu, Regulatory Branch

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

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.

Clark, John R.K., 1977, *The Beaches of Oahu*, The University Press of Hawaii.

Hwang, Dennis, 1981, *Beach Changes on Oahu as Revealed by Aerial Photographs*, Hawaii Institute of Geophysics, University of Hawaii.

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

M&E Pacific, Inc., 1978, *Manual for Determining Tsunami Runup Profiles on Coastal Areas of Hawaii*, prepared for U.S. Army Corps of Engineers, Pacific Ocean Division.

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

Draft Environmental Assessment
Review Comments and Response Letters

Sea Engineering, Inc.
Makai Research Pier • 41-402 Kalanianaole Hwy. • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • Fax: (808) 259-8143 • Email: sei@seaengineering.com • Website: www.seaengineering.com

January 4, 2005

Mr. Eric G. Crispin, AIA
Director, Department of Planning and Permitting
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Dear Mr. Crispin:

Project Name : Koki Seawall
File No. : 2004/ED-27
Tax Map Key : 5-5-2: 3
Subject : Response to Draft Environmental Assessment Comments

This is in response to comments by the Department of Planning and Permitting (DPP) on the Draft Environmental Assessment (EA) for the subject project.

1. The shoreline in the project area is dynamic and subject to chronic on-going erosion. Thus it has likely changed to some extent since the last shoreline survey in June 2003, and the erosion has presumably resulted in some alteration of the vertical bank. Prior to construction of the proposed shore protection the applicant will have the existing shoreline survey and staked to insure that all construction is done landward of the certified shoreline.

2 & 3. The existing rock revetment on the south side of the applicant's property (Lilly Property) was constructed in the late 1960's, and has protected this property from erosion and shoreline recession. The applicant's unprotected property has been subject to erosion, and recession of the shoreline is beginning to flank the revetment protecting the Lilly property. In addition, the Lilly revetment has suffered some damage due to slumping and displacement of the stone. We have discussed the issue with the Lilly family, and understand that they will be requesting approval from the DPP to do repairs to their revetment. We believe that repairs to the Lilly revetment can be accomplished concurrently with construction of the applicants revetment so that a smooth transition between the two structures can be made. The existing rock revetment on the north side of the applicants property (Rogers property) has already received DPP approval to construct repairs to their revetment. We have discussed the need to tie the two revetments together with Mr. Rodgers, and he has stated his willingness to have his stones reset and replaced as necessary during construction of the applicant's revetment in order to again make a

smooth transition between the new and existing revetments. We would like to note that the "Oahu Shoreline Study-Part 2, Management Strategies", (1989) prepared by Sea Engineering, Inc. for the City and County of Honolulu, Department of Land Utilization (predecessor to DPP), recommends for the Laniloa Beach project site that "Any opportunity for bringing the existing walls, or any new walls, into more uniform alignment should be utilized." Recommendations of this study were endorsed by the City and County. The Final EA has been revised to include additional discussion of the tie-in to the existing revetments.

4. The minimum required revetment crest elevation to prevent overtopping by the design wave is +8 feet mean sea level (MSL). The existing top of the shoreline bank is approximately +14 to +16 feet, and the rear of the lot varies from +12 to +14 feet. In the Draft EA the project plan was shown with the revetment extended past the minimum necessary crest elevation in order to protect the bank all the way to the top. This plan has been modified, and now the proposed plan is to construct the sloping rock revetment up to a crest elevation of +10 feet, above and behind which will be constructed a 2-foot high CRM retaining wall to further stabilize the bank, and then the ground will be gently sloped back to existing grade along the width of the property. A topographic map has been added to the Final EA, and the EA has been revised to explain the proposed project plan in more detail.

5. Impact mitigation measures to be used during construction are discussed in Section 7.0 of the Final EA.

6. The applicant proposes to construct a single family dwelling on the property once the shoreline has been protected and a permanent shoreline setback zone can be established. The proposed house layout has been included in the Final EA. As such, the proposed revetment will become part of the residential property to be built and would be exempt from SMA regulations (Section 25-1.3(2)(N).

7. The Application for Shoreline Setback Variance dated September 2, 2004, included a design analysis for the revetment stamped by a licensed professional engineer. This analysis included a typical cross-section drawing for the revetment. A revised design analysis will be submitted with the Final EA which also includes a plan view drawing of the proposed revetment.

Should you have any further questions or desire additional information please call Marc Ericksen or Scott Sullivan at 259-7966.

Sincerely,

Scott P. Sullivan
Vice President

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4414 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

NOV 18 2004

JEREMY HARRIS
MAYOR

ERIC G. CRISPIN, AIA
DIRECTOR

BARBARA KIM STANTON
DEPUTY DIRECTOR

2004/ED-27(ASK)

November 17, 2004

Mr. Mark Ericksen
Sea Engineering, Inc.
Makai Research Pier
Waimanalo, Hawaii 96795

Dear Mr. Ericksen:

Project Name	:	Koki Seawall
File No.	:	2004/ED-27
Tax Map Key	:	5-5-2: 3
Subject	:	Draft Environmental Assessment, Chapter 25-3.3, Revised Ordinances of Honolulu

We are forwarding copies of all comments we have received as well as our comments relating to the Draft Environmental Assessment (EA) for the above-referenced project.

In accordance with the procedural provisions of Chapter 343, Hawaii Revised Statutes, you must respond in writing to these and any other comments which were received during the 30-day public comment period which began with the publication of a notice of availability of the Draft EA in The Environmental Notice on October 8, 2004. The final EA must include these comments and response, as well as revised text, if appropriate.

Our comments are as follows:

1) The shoreline survey was conducted on June 9, 24, 2003. Has the location of the shoreline changed since that time?

2) The Final EA should describe the location of the adjacent revetments relative to the siting of the proposed revetment.

3) Photos of the project site indicate the adjacent revetments are in poor condition and may not provide adequate flank protection for the proposed revetment. Are the existing adjacent revetments adequate to provide a tie in support for the proposed revetment? If not, the Final EA should describe what type of flank protection will be provided. How will the proposed form of flank protection impact the adjacent properties?

4) Page 8 of the Draft EA states that the toe elevation will be -1 foot below mean sea level (MSL) and the crest elevation will be +8 feet MSL (minimum). The Typical Section, Figure 2-8, shows the height of the revetment at +14. The Final EA should more definitively state the height of the proposed revetment. What is the elevation at the rear of the lot? If available, a topographic map should be provided. Figure 2-8 should identify the existing grade and any fill that might be added.

5) The Final EA should describe the construction methods to be used including best management practices to protect the environment and minimize impacts.

6) The project is within the Special Management Area. The Final EA should explain how the proposal complies with Chapter 25, Revised Ordinances of Honolulu.

7) The shoreline variance application must include plans stamped by a professional engineer licensed in the State of Hawaii.

If you have any questions, please contact Ardis Shaw-Kim of our staff at 527-5349.

Sincerely yours,

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

EGC:cs
Encls.

posse doc no. 336181

Sea Engineering, Inc.
Makai Research Pier • 41-402 Kalanianaole Hwy. • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • Fax: (808) 259-8143 • Email: sei@seaengineering.com • Website: www.seaengineering.com

January 3, 2005

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

Dear Mr. Lau:

Subject: Environmental Assessment for Shoreline Setback Variance Application, Koki Property, 55-283 Kamehameha Hwy. Laie, Oahu (TMK 5-5-02:3)

Thank you for your review of the Draft Environmental Assessment (EA) for the subject project, and the review comments in your letter of October 11, 2004. The following provided to your comments.

1. Best Management Practices to be followed during construction are discussed in Section 7.0 Mitigation Measures of the Final EA. Prevention of fugitive dust being carried into the water by wind or storm water runoff has been added to this section.

2. No dewatering or discharge of dewatering effluent during construction is anticipated.

Sincerely,

Scott P. Sullivan
Vice President

Cc: City and County of Honolulu, Department of Planning and Permitting

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMD / CWB

10036CEC.04

October 11, 2004

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: Shoreline Setback Variance Application
Comments on Draft Environmental Assessment (DEA)
and Coastal Engineering Evaluation (CEE)
Located at 55-283 Kamehameha Highway
Laie, Island of Oahu - TMK: 5-5-002:003

Thank you for the opportunity to review and comment on the DEA/CEE prepared for the construction of a sloping rock revetment at the subject address. The Department of Health (Department), Clean Water Branch (CWB), has reviewed the DEA/CEE and provides the following comments:

1. Pursuant to Hawaii Administrative Rules, Chapter 11-54 (titled Water Quality Standards), a Site-Specific Construction Best Management Practices Plan shall be developed, implemented, and properly maintained during the proposed construction period to prevent/minimize the potential pollutant from entering the State waters or onto the sand beach in a form of fugitive dust or mist (airborne), or being introduced by the workers during the construction, or being washed by wave action, or being carried by storm water runoff etc.

2. Based on the elevation of the toe of the rock revetment, a National Pollutant Discharge Elimination System (NPDES) permit from the Department is required if discharge of treated dewatering effluent is anticipated.

   The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html.

If you have any questions regarding the NPDES permitting requirements, please contact Mr. Edward Chen of the Engineering Section, CWB, at 586-4309.

Sincerely,

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

EC:np

c: Regulatory Branch, HED, COE
CZM Program, Office of Planning, DBEDT
OCCL, DLNR

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January 3, 2005

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

Dear Ms. Salmonson:

Subject: Environmental Assessment for Shoreline Setback Variance Application, Koki Property, 55-283 Kamehameha Hwy., Laie, Oahu (TMK 5-5-02:3)

Thank you for your review of the Draft Environmental Assessment (EA) for the subject property, and the review comments in your letter of November 4, 2004.

The coastal engineering and environmental assessment of the project site has been prepared in accordance with the 13 general topics suggested by the "Shoreline Hardening Policy and Environmental Assessment Guidelines" as promulgated by OEQC. The project has been discussed with the neighbors on both sides of the project site, and they are anxious for the proposed shore protection project to be implemented in order to provide flank protection for their respective properties. In addition, as part of the Shoreline Setback Variance process, the City and County of Honolulu, Department of Planning and Permitting, will conduct a public hearing to solicit input from agencies and the community. Notice of the hearing and proposed action will be given to the neighborhood board and to individual property owners within 300 feet on either side of the applicant.

Sincerely,

Scott P. Sullivan
Vice President

Cc: City and County of Honolulu, Department of Planning and Permitting

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
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NOV 10 2004

November 4, 2004

Mr. Eric Crispin, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawai'i 96813

Dear Mr. Crispin:

Subject: Draft Environmental Assessment for the Koki Shoreline Setback Variance, Lā'ie, O'ahu

Thank you for the opportunity to review and comment on the subject project. We have the following comments.

1. For assistance in completing the assessment, please review the "Shoreline Hardening Policy and Environmental Assessment Guidelines" available at http://www.state.hi.us/health/oeqc/guidance/shoreline.htm

2. Please consult with the adjacent neighbors and the neighborhood board.

If you have any questions, please contact Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson

Genevieve Salmonson
Director

c: Sea Engineering
Koki Family

Sea Engineering, Inc.
Makai Research Pier • 41-402 Kalanianaole Hwy. • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • Fax: (808) 259-8143 • Email: sei@seaengineering.com • Website: www.seaengineering.com

January 3, 2005

Mr. Clyde W. Nāmu`o, Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Blvd., suite 500
Honolulu, HI 96813

Dear Mr. Nāmu`o:

Subject: Environmental Assessment for Shoreline Setback Variance Application. [illegible] Kamehameha Hwy., Laie, Oahu (TMK 5-5-02:3)

Thank you for your review of the Draft Environmental Assessment (EA) for the subject property, and the review comments in your letter of October 18, 2004.

The shoreline in the project area has been subject to chronic erosion for more than 50 years. At present, the applicants` property is the only property without permanent shore protection along the south end of Laniloa Beach. Properly designed and constructed erosion control is required to protect the existing and proposed homes. The proposed sloping rock revetment is considered the best alternative for this location. The rough and porous surface and sloping face absorb and dissipate wave energy, thus resulting in the possibility of sand accumulation seaward of the structure.

A requirement to cease work and contact the State Historic Preservation Division should iwi or Native Hawaiian cultural or traditional deposits be found during construction has been included in Section 7.0 Mitigation Measures of the Final EA. Please note that implementation of the proposed shore protection will in effect protect any existing buried deposits landward of the shoreline from possible disturbance due to the on-going erosion and recession of the shoreline. The project will also not adversely impact existing public access to the shoreline, and the requirement to maintain public access along the shoreline so far as practicable during construction has been included in Section 7.0 of the Final EA. No construction activities will occur in the State conservation district seaward of the certified shoreline.

Sincerely,

Scott P. Sullivan
Vice President

Cc: City and County of Honolulu, Department of Planning and Permitting

PHONE (808) 594-1888

FAX (808) 594-1865

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

OCT 19 2004

HRD04/1579

October 18, 2004

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

RE: Request for Comments on a Draft Environmental Assessment for a Shoreline Setback Variance by Mr. and Mrs. Stanley Koki of 55-283 Kamehameha Highway, Laie, O'ahu, TMK: 5-5-002:003

Dear Eric G. Crispin,

The Office of Hawaiian Affairs is in receipt of your September 23, 2004, request for comments on the above project, which would allow for construction of a sloping rock revetment within the 40-foot shoreline setback. OHA offers the following comments.

We generally do not support any construction in the shoreline setback, especially not anything that would harden the shoreline. The photographs of the existing shoreline and the applicants' description of consistent landward encroachment of the sea in this area only further our concerns in this case. A beach still exists here, but it is being strangled by the hardening of its sand supply. This strangling is not so much supporting the landward base as it is furthering the erosion of the beach, which can no longer work in its natural manner of preserving a sand bank either on or off shore, depending on the season. Instead of bolstering the applicants' requests, the photos and information simply show that this is not a place upon which the city should be allowing people to build.

Should this application be approved, which seems likely considering the 2003 approvals of rock revetments on neighboring properties by this department, we request assurances that that should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Consideration and protection also must be given to applicable cultural gathering and access rights during and after construction activities. Native Hawaiian traditional gathering rights and public access to and along the shoreline should not be restricted – even during construction – except as necessary to ensure safety. If such safety-related restrictions are put in place, alternate lateral public access routes must be provided

Thank you for the opportunity to comment. If you have further questions, please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

CC: State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street
Suite 702
Honolulu, HI 96813

✓ Sea Engineering, Inc.
Attn: Marc Ericksen
Makai Research Pier
Waimanalo, HI 96795

Sea Engineering, Inc.
Makai Research Pier • 41-402 Kalanianaole Hwy. • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • Fax: (808) 259-8143 • Email: sei@seaengineering.com • Website: www.seaengineering.com

January 3, 2005

Mr. George P. Young, P.E.
Chief, Regulatory Branch
U.S. Army Engineer District, Honolulu
Ft. Shafter, HI 96858-5440

Dear Mr. Young:

Subject: Environmental Assessment for Shoreline Setback Variance Application.
Koki Property, 55-283 Kamehameha Hwy., Laie, Oahu (TMK 5-5-02:3)

Thank you for your review of the draft Environmental Assessment (EA) for the subject project, and the review comments in your letter of November 5, 2004. The project will be constructed entirely landward of the mean higher high water line (MHHW), as shown on the plan view and cross section drawings on Figures 2-9 and 2-10 of the Final EA. Thus, based on your review comments, we understand that no Department of the Army permits will be required.

Sincerely,

Scott P. Sullivan
Vice President

Cc: City and County of Honolulu, Department of Planning and Permitting

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

REPLY TO
ATTENTION OF

November 5, 2004

Regulatory Branch

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

NOV 10 2004

Dear Mr. Crispin:

In response to your request for comments on the draft Environmental Assessment (EA) for a shoreline setback variance request for the Stanley Koki residence at 55-283 Kamehameha Highway, Laie, Oahu (TMK: 5-5-02:3), the Regulatory Branch of the Honolulu District Corps of Engineers (HED) has reviewed the project for jurisdiction pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. The applicant proposes to construct a sloping rock revetment to stabilize the shoreline fronting their home site and prevent further shoreline erosion. The revetment and 5' scour apron will be placed landward of the September 10, 2003 certified shoreline.

Section 10 of the Rivers and Harbors Act requires that a Department of the Army (DA) permit be obtained for certain structures or work in or affecting navigable waters of the United States (33 U.S.C. 403). Section 404 of the Clean Water Act requires that a DA permit be obtained prior to the placement or discharge of dredged and/or fill material into waters of the U.S. (33 U.S.C. 1344). The subject site is adjacent to the Pacific Ocean, a navigable water subject to Section 10 and Section 404 authority. The shoreward lateral limit of the Corps' jurisdiction is the mean higher high water line (MHHW). The MHHW does not necessarily coincide with the certified shoreline. Therefore, no DA permit will be required for the proposed work only if the footprint does not extend waterward of the MHHW. Conversely, should the construction of the revetment extend waterward of the MHHW, DA authorization would be required. Also, provided the aforementioned project does not involve placement of dredged and/or fill material (riprap) waterward of the MHHW, a DA permit pursuant to Section 404 of the Clean Water Act would not be required. For a final determination of Corps jurisdiction, the applicant should submit drawings, both plan view and cross-sectional, depicting the proposed work in relation to the MHHW.

Thank you for your cooperation with our regulatory program. If you have any further

questions, please contact Ms. Connie Ramsey by telephone at 808-438-2039, by facsimile at 808-438-4060 or by electronic mail at Connie.L.Ramsey@usace.army.mil . Please refer to File number 200400509 regarding this project.

Sincerely,

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

Copy Furnished:

Mr. and Mrs. Stanley Koki, 45-496 Malio Place, Kaneohe, HI 96744
Marc Ericksen, Sea Engineering, Inc., Makai Research Pier, Waimanalo, HI 96795