

**CALIFORNIA COASTAL COMMISSION**

SOUTH CENTRAL COAST AREA  
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Staff: J. Johnson  
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Hearing Date: 11/4/98  
Commission Action:

**STAFF REPORT: REGULAR CALENDAR****W 18 h****APPLICATION NO.: 4-98-051****APPLICANT: Michael Tuchman****AGENT: Susan McCabe****PROJECT LOCATION:** 25044 Malibu Road, City of Malibu, Los Angeles County

**PROJECT DESCRIPTION:** Construct concrete seal wall seaward of base of existing wood bulkhead extending seaward about eight feet and about 60 feet long across width of property with an existing single family residence and two possibly 'unpermitted' rental units. Replace one timber pile on existing wood bulkhead. Repair existing sewage disposal system and replace 163 cubic yards of fill. The applicant is offering to dedicate a lateral access easement over the southern portion of the lot as measured 10 feet seaward of the deck extending to the mean high tide line.

Lot area: 8,758 sq. ft.  
Ht abv Mean Sea Level: 10 ft.

**SUMMARY OF STAFF RECOMMENDATION:**

Staff recommends approval of the proposed project with five special conditions addressing: the removal of the 'unpermitted' rock rubble; lateral public access; assumption of risk; construction responsibilities and debris removal; and signage restrictions. The applicant is requesting approval of a ten foot high (from 0.0 feet Mean Sea Level), maximum eight-foot thick, and 40 feet wide triangular shaped concrete seal wall to be located immediately seaward of an existing wood bulkhead. The existing wood bulkhead will also be repaired. In response to damage caused by the 1998 El Nino winter storms, the applicant has completed the repair of the sewage disposal system under an emergency coastal permit. The applicant is offering to dedicate a lateral public access easement on the sandy beach.

The existing wood bulkhead and proposed seal wall protects the septic system located below the residence on the beach, the residential support piles, and an access driveway from wave erosion hazards.

The project is located on Corral Beach just west of Corral Dan Blocker Beach and opposite the intersection of Pacific Coast Highway and Corral Canyon Road among eight beachfront residences. This project is a similar design to two proposed applications on this same November agenda; Application No. 4-98-050, Gallo and Application No. 4-98-052, Neiter and Behar on adjoining properties to the west. The Executive Director granted an emergency coastal permit on February 24, 1998 to allow for the construction of this project. The emergency permit was reissued on March 27, 1998. The repair of the sewage disposal system was completed. Due to various delays in initiating the seal wall and bulkhead repairs, the emergency coastal permit has expired. As a result, the applicant is requesting a regular coastal development permit to complete the project as soon as possible.

**LOCAL APPROVALS RECEIVED:** City of Malibu Planning Department Approval in Concept, dated 2/20/98; and City of Malibu Environmental Health Department Approval in Concept, dated 3/24/98.

**SUBSTANTIVE FILE DOCUMENTS:** Appendix A

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**STAFF RECOMMENDATION:**

The staff recommends that the Commission adopt the following resolution:

**I. Approval with Conditions.**

The Commission hereby grants, subject to the conditions below, a permit for the proposed development on the grounds that the development, as conditioned, will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3 of the Coastal Act, is located between the sea and first public road nearest the shoreline and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and will not have any significant adverse effects on the environment within the meaning of the California Environmental Quality Act.

**II. Standard Conditions**

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall

be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Compliance. All development must occur in strict compliance with the proposal as set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

### **III. Special Conditions**

#### **1. Offer to Dedicate Lateral Public Access**

In accord with the applicant's proposal as part of this project of an offer to dedicate an easement for lateral public access and passive recreational use along the shoreline, the applicant shall be required to complete the following prior to issuance of the permit: the landowner shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a public agency or private association approved by the Executive Director an easement for lateral public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property. Such easement shall be located along the entire width of the property from the mean high tide line landward to 10 ft. seaward of the existing deck as illustrated on the site plan prepared by David C. Weiss, Structural Engineer and Associates, dated 10/19/98 (Exhibit 7). The document shall contain the following language:

##### **(a) Privacy Buffer**

The area ten (10) feet seaward from the existing deck as illustrated on the site plan prepared by David C. Weiss, Structural Engineer and Associates, dated 10/19/98 (Exhibit 7), shall be identified as a privacy buffer. The privacy buffer shall be applicable only if and when it is located landward of the mean

high tide line and shall be restricted to pass and re-pass only, and shall be available only when no other dry beach areas are available for lateral public access. The privacy buffer does not affect public access should the mean high tide line move within the buffer area.

(b) The remaining area shall be available for passive recreational use.

The document shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable for a period of 21 years, such period running from the date of recording. The recording document shall include legal descriptions of both the applicant's entire parcel(s) and the easement area.

## **2. Sign Restrictions**

No signs shall be posted on the property subject to this permit (and/or on immediately adjacent properties) which (a) explicitly or implicitly indicate that the portion of the beach on Assessor's Parcel Number 4459-021-020 located seaward of the existing deck is private or (b) contain similar messages that attempt to prohibit public use of this portion of the beach. In no instance shall signs be posted which read "*Private Beach*" or "*Private Property*." In order to effectuate the above prohibitions, the permittee is required to submit to the Executive Director for review and approval prior to posting the content of any proposed signs.

## **3. Applicant's Assumption of Risk.**

Prior to the issuance of the coastal development permit, the applicant as landowner shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from liquefaction, storm waves, erosion or flooding and the applicant assumes the risks from such hazards; and (b) that the applicant unconditionally waives any claim of liability against the Commission and agrees to indemnify and hold harmless the Commission and its advisors relative to the Commission's approval of the project for any damage due to natural hazards. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens which the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Coastal Commission approved amendment to the coastal development permit unless the Executive Director determines that no amendment is required.

## **4. Construction Responsibilities and Debris Removal**

The applicant shall, by accepting this permit, agree and ensure that the project contractor: a) not stockpile dirt on the beach; b) properly cover and sand-bag all

stockpiling beyond the beach to prevent runoff and siltation; c) not store any construction materials or waste where it may be subject to wave erosion and dispersion; d) promptly remove any and all debris from the beach that results from construction or demolition materials to an appropriate disposal site; e) implement measures to control erosion at the end of each day's work; and f) not allow any mechanized equipment in the intertidal zone at any time.

**5. Removal of 'Unpermitted' Rock Rubble Wall**

Prior to issuance of the coastal development permit, the applicant shall submit revised plans subject to the review and approval of the Executive Director that indicate the existing 'unpermitted' and un-engineered rock rubble wall on the eastern portion of the subject property be removed from the applicant's property and disposed of in an appropriate disposal site located either outside the coastal zone or a site with a valid coastal development permit for disposal. The revised plans shall indicate that the proposed seal wall will be relocated to conform to and connect to the existing wood bulkhead on the seaward side and the bulkhead end wall and bluff located below the eastern portion of the residential structure. The revised plans shall be prepared by a licensed coastal engineer.

**IV. Findings and Declarations.**

**A. Project Description and Location**

The project site is located at 26044 Pacific Coast Highway, Malibu on a 8,759 sq. ft. lot along Corral Beach seaward of Pacific Coast Highway. (*Exhibits 1, 2 and 3*) The applicant proposes to construct a concrete seal wall seaward of base of an existing wood bulkhead extending seaward about eight (8) feet and about 60 feet long across width of property. The subject property is developed with an existing single family residence and two rental units. The two rental units and other development on the subject property may have been constructed without benefit of a coastal development permit. The property also includes a detached three car garage. The applicant also proposes to repair the wood bulkhead by replacing one wood pile. The existing storm damaged sewage disposal system was repaired and 163 cubic yards of fill replaced behind the bulkhead. The applicant is offering to dedicate a lateral access easement over the southern portion of the lot as measured 10 feet seaward of the deck extending to the mean high tide line. (*Exhibits 4 and 5*)

The Executive Director granted an emergency coastal permit on February 24, 1998 to allow for the construction of this project. The emergency permit was reissued on March 27, 1998. Due to various delays in initiating these projects, the emergency coastal permit has expired before the seal wall and the bulkhead repair could be constructed; as a result, Emergency Coastal Permit No. 4-98-051 expired. Since the applicant completed the sewage disposal system repairs, the applicant now proposes to make permanent the Emergency Coastal Permitted repair to the sewage disposal system.

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Vertical public access to Corral Beach and Dan Blocker State Beach is located about 250 ft. east of the subject site along a dirt access road. This public accessway has been operated and maintained by Los Angeles County.

The Los Angeles County Malibu Land Use Plan has designated the site as Residential IV B, which allows 8 - 10 dwelling units per acre. The existing parcel and residence is, therefore, considered conforming regarding parcel size according to the Land Use Plan.

### **B. Shoreline Protective Devices**

Along with the existing residences and septic system, a 60 foot long wooden bulkhead exists on the site. As noted above, the applicant proposes to construct a concrete seal wall in front of the bulkhead to strengthen it and repair an existing wooden bulkhead with a new timber pile.

The existing wood bulkhead on the property is located about 42 feet seaward from the access driveway between the subject site and Pacific Coast Highway. The seaward extent of this proposed modified bulkhead with a seal wall will be up to about 50 feet seaward from the access driveway. Therefore, the maximum seaward encroachment proposed by the applicant is about eight (8) feet seaward of the existing wood bulkhead (*Exhibits 4 and 5*). It is also important to point out that the bulkhead is located beneath and at least about thirty (30) feet landward of the structure stringline and about forty (40) feet landward of the deck stringline. The bulkhead and proposed seal wall wraps around the east side of the site (beyond an 'unpermitted' and un-engineered rock rubble wall, Exhibit 5) to connect to the bluff; the Corral Canyon Creek is located immediately adjacent to the east of the applicant's property. The bulkhead and proposed seal wall is necessary to protect the existing septic system, residential support piles, and access driveway according to David Weiss Structural Engineer and Associates, the applicant's consulting engineer.

After identifying the applicable Coastal Act sections and the Los Angeles County Land Use Plan (LUP) policies, the discussion of the impacts resulting from the shoreline protective device (bulkhead) will proceed in the following manner. First, the staff report describes the physical characteristics of the Corral Beach shoreline. Second, the staff report analyzes the dynamics of the Corral Beach shoreline. Third, the staff report analyzes the location of the proposed shoreline protective device<sup>1</sup> in relation to wave action. Finally, the staff report analyzes whether the proposed new and strengthened shoreline protective device will adversely impact shoreline sand supply and shoreline processes.

As described in the discussion below, there is evidence that this development along this section of Corral Beach will require a shoreline protective device which has the potential to impact the natural shoreline processes. Therefore, it is necessary to review the

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<sup>1</sup> Shoreline Protective Device is also referred to in the findings as a bulkhead or seawall.

proposed project for its consistency with Sections 30235, 30250(a), and 30253 of the Coastal Act and with past Commission action.

**Section 30235 of the Coastal Act states:**

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

**Section 30250(a) of the Coastal Act states (in part):**

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

**Coastal Act Section 30253 states (in part):**

New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Coastal Act Section 30235 provides for two tests applicable to this project. The first test is whether or not the shoreline protective device is needed to protect either coastal dependent uses, existing structures, or public beaches in danger of erosion; the second test is whether or not the device is designed to eliminate or mitigate adverse impacts on shoreline sand supply.

Regarding Section 30250, the Coastal Act requires that new development be located in existing developed areas able to accommodate it, or other areas where it will not have significant adverse effects on coastal resources.

Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property in areas of high geologic, flood, and fire hazard.

In addition, to assist in the determination of whether a project is consistent with Sections 30235, 30250(a), and 30253 of the Coastal Act, the Commission has, in past Malibu coastal development permit actions, looked to the certified Malibu/Santa Monica Mountains Land Use Plan (LUP) for guidance. The Malibu LUP has been found to be consistent with the Coastal Act and provides specific standards for development along the Malibu coast. For example, policies P166 and P167 provide, together with Coastal Act Section 30235, that revetments, seawalls, cliff retaining walls and other shoreline protective devices be permitted only when required to serve coastal-dependent uses, to protect existing structures or new structures which constitute infill development<sup>2</sup> and only when such structures are designed and engineered to eliminate or mitigate significant adverse impacts on the shoreline and sand supply.

The subject property is currently developed with a residence and two residential rental units, septic system and wood bulkhead wall protecting the septic system and supporting the embankment of an access driveway seaward of Pacific Coast Highway. The project involves the construction of a seal wall seaward of the wood bulkhead, repair of the bulkhead and sewage disposal system. The proposed seal wall will protect existing structures; the wood bulkhead, a sewage disposal system, pilings providing support to the residential structure, and an access driveway to the site from Pacific Coast Highway.

The project does not fall into two of the three categories in which a shoreline protective device must be permitted by the Commission under Section 30235. The proposed seal wall and existing bulkhead does not protect a public beach nor would it serve a coastal-dependent use. Residential structures, driveways, sewage disposal systems, and bulkheads are not coastal dependent developments or uses pursuant to Section 30101 of the Coastal Act. However, the proposed improvement for the existing bulkhead does protect an existing residential structure in danger from erosion, therefore a shoreline protective device may be permitted. Therefore, the Commission finds that the proposed project meets the first test of Section 30235. The second test of Section 30235 will be discussed below.

Regarding Section 30250, the new development proposed in this project consists of the concrete seal wall. The repair of the wood bulkhead and sewage disposal system is not considered new development. Because an existing residence already exists on site with adequate public services, (i.e. public road access, water, electricity, and telephone) and surrounding properties are already developed with residential development, the Commission finds that the new development proposed in this application will be located

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<sup>2</sup> The term "infill development" is discussed in greater detail in below section titled, Past Commission Actions on Residential Shoreline Development.

within an existing developed area able to accommodate it. Thus, the Commission finds that the proposed project meets Section 30250 of the Coastal Act.

Regarding Section 30253, the proposed development is located within an area of high geologic and flood hazard due to wave erosion, storm waves and liquefaction. This section of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property in areas of high geologic, flood and fire hazard. The location of the proposed seal wall is located within the ocean wave scour area, as determined by the applicant's engineer. These issues are further discussed below.

### **1. Proposed Project and Site Shoreline**

The City of Malibu includes a 27 mile long narrow strip of coast that is backed by the steep Santa Monica Mountains. Unlike most of the California coast, the shoreline in Malibu runs from east to west and forms south-facing beaches. Corral Beach is located approximately two and one half miles west of Malibu Canyon Road and two and one half miles east of Kanan Dume Road. Corral Beach is developed with eight single family and multifamily residences and vacant parcels owned by the State and Los Angeles County. The majority of the residences are constructed on piles with retaining or bulkhead walls to stabilize the road fill and protect septic systems located beneath the residences. Along the access driveway in the vicinity of the project site, a slope descends about 12 feet to existing wood bulkheads, and below that a sandy beach. The sandy beach is about 20 feet below the grade of the access driveway.

Corral Beach is located within the Dume Littoral Subcell, which geographically extends from approximately Point Dume to Redondo Beach. The Dume Subcell is part of the larger Santa Monica Littoral Cell. The fluvial sediment from Malibu Creek and Topanga Canyon Creek is the major contributing sediment source in this Subcell. Given that Corral Beach is upcoast from Malibu Creek and Topanga Canyon Creek, sediment to this beach is predominately derived from the upcoast Zuma Littoral Subcell, in which approximately 90% of the sediment continue downcoast bypassing the Dume Canyon Submarine Canyon. In contrast to the Dume Littoral Subcell, where the major sediment source is the large streams referenced above, 60% of the sediment from Zuma Cell's net total sediment is derived from beach/bluff erosion and only 40% is derived from the local streams.<sup>3</sup>

The main sources of sediment for bluff backed beaches are the bluffs themselves, as well as the material that has eroded from inland sources and is carried to the beach by small coastal streams. While beaches seaward of coastal bluffs follow similar seasonal and semi-annual changes as other sandy beaches, they differ from a wide beach in that a narrow bluff backed beach does not have enough material to maintain a dry sandy beach during periods of high wave energy. Thus, unlike a wide sandy beach, a narrow, bluff backed beach may be scoured down to bedrock during the winter months. In the

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<sup>3</sup> Army Corps of Engineers, Los Angeles District, Reconnaissance Study of the Malibu Coast. 1994.

case of Corral Beach, the Los Angeles County maintained beach covers about 0.7 miles of a narrow to rocky shoreline backed by Pacific Coast Highway and a small grouping of pile-supported residences which occupy northern end of this beach. The Highway and residences have altered the natural process of shoreline nourishment which beaches such as Corral would expose the back of the bluff to frequent wave attack as the beach erodes. In a natural setting, this wave attack leads to eventual erosion and retreat of the lower portions of the bluff. The dynamic of bluff erosion and retreat results in landward movement of the beach's location and, in turn, eroded bluff material provides beach nourishment material to establish a new beach area. In the case of Corral Beach, the back of the beach has been fixed in part by Pacific Coast Highway and in part by shoreline protective devices that have been constructed on the beach to protect residential development.

**a. Corral Beach is an Oscillating Beach**

Having defined Corral Beach as a narrow, bluff-backed beach, the next step is to determine the overall erosion pattern of the beach. Determining the overall beach erosion pattern is one of the key factors in determining the impact of the seal wall on the shoreline. In general, beaches fit into one of three categories: 1) eroding; 2) equilibrium; or 3) accreting. The persistent analytical problem in dealing with shore processes in California is distinguishing long-term trends in shoreline change from the normal, seasonal variation.

Two studies regarding long-term trends in shoreline processes were reviewed. First, a U. S. Army Corps of Engineers 1994 Reconnaissance Report regarding the Malibu/Los Angeles County coastline concludes that Corral Beach is a narrow beach backed by a high bluff and frontage road. The Army Corps report estimated that annual average shoreline retreat of about one (1) foot occurred between 1971 and 1989.<sup>4</sup> Second, a report prepared for the City of Malibu by Moffatt and Nichol, Engineers, dated June 30, 1992, was reviewed. This report concludes that this specific section of Corral Beach is advancing over the 1938 - 1988 time period; while, here the mean annual shoreline change rate is estimated at 0.5 feet per year.

The applicant provided a report with one update letter that discussed the proposed project relative to wave uprush and shoreline processes. The Coastal Engineering Report by David Weiss Structural Engineer & Associates, dated August 4, 1998, and an update letter titled, Coastal Permit Application No. 4-98-051, dated September 17, 1998, both address the proposed project. The reports identified wave uprush calculations, design waves, analyzed possible storm wave damage to the proposed structure, and provided recommendations for protection along Corral Beach. David Weiss and Associates provides an opinion that this beach is an oscillating beach and over the last 35 years it is at least in equilibrium. The consultant's report does include

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<sup>4</sup> This is based on estimated average vertical and horizontal scour prepared with the assistance of the numerical computer program model "SBEACH".

the results of the Moffatt and Nichol Engineers 1992 report that Corral Beach was an advancing beach.

David Weiss and Associates Reports identifies the average Mean High Tide Line location as surveyed July 14, 1998 on the subject site. This location is about 148 feet seaward from the right of way of Pacific Coast Highway and about 108 feet seaward of the landward property line along the access driveway. The seaward most portion of the proposed seal wall is located about 50 feet from this landward property line and about 90 feet from the Pacific Coast Highway right of way, except for the end wall on the east side of the property that connects to the bluff. Therefore, the proposed project is located landward of the Mean High Tide Line.

Staff reviewed the proposed project against the above cited shoreline data. The data presented indicates that this section of Corral Beach is at least in equilibrium and may possibly be an accreting beach based upon limited available information. The applicant's consultant believes that this beach is an oscillating beach. Although Studies performed by the U. S. Army Corp of Engineers indicate that Corral Beach is an eroding beach, the more recent and more specific Moffatt & Nichol report identifies this subject beach location as accreting about 0.5 feet per year. Therefore, given the conflicting data relative to the erosion rates on this beach, the Commission finds that based on the most recent studies, Corral Beach is an oscillating to accreting beach.

## **2. Location of Proposed Shoreline Protective Device in Relation to Mean High Tide Line and Wave Action**

The other key factor in determining the impact of the proposed seal wall on the shoreline is the location of the proposed protective device in relationship to the expected wave runup. The existing 60 foot long vertical wood bulkhead extends along the sandy beach beneath the existing residence. As noted above, the proposed project will strengthen the entire existing bulkhead.

The existing bulkhead beneath the residence is connected to the adjacent bulkhead on the adjoining property to the west (Gallo) at the same location, about 42 feet seaward of the landward property line along the access driveway. (*Exhibits 4 and 5*). An end wall connects the existing bulkhead and proposed seal wall to the bluff (beyond an 'unpermitted' an un-engineered rock rubble as proposed by the applicant) on the east side of the applicant's property.

The profile data, cited in detail below, shows that the position of the proposed seal wall does intrude on the historical areas of wave run-up and beach sediment transport. However, the data also shows that the seal wall is not proposed to be located near or seaward of the documented positions of the Mean High Tide Line (MHTL).

### **a. Mean High Tide Line**

The data submitted by the applicant shows that the bulkhead and the proposed seal wall are not located near or seaward of the documented positions of the Mean High Tide Line (MHTL). The MHTL is an ambulatory line that can vary greatly from summer to winter. In the Coastal Engineering Report prepared by David Weiss and Associates, reviewed a surveyed of the MHTL position completed by Rich Almack, Land Surveyor dated July 14, 1998 (Exhibit 5). This 1998 survey MHTL is located about 148 feet seaward of the southern right of way of Pacific Coast Highway. The report also provides a map of "Historical Mean High Tide Lines" dated December 1960 to April 1961 completed by the State Lands Commission. This map identifies two MHTLs dated 1928 and 1961. These MHTLs are located co-terminus seaward of the subject site and are about 150 feet seaward of what appears to be the southern highway right of way of Pacific Coast Highway. Further, the applicant has submitted a letters, dated May 26, 1998 from the State Lands Commission (SLC) which states:

We are reviewing information regarding the location of the boundary between state and private property in this area and do not expect to conclude this review for some time. Because this project involves repairs to existing bulkhead structures which are located underneath the residences, and because we do not want to unduly delay the permit process by the California Coastal Commission (CCC), we do not object to the CCC proceeding with the processing of the permit application. However, we reserve the right to comment to the CCC and take any other appropriate action regarding future assertion of state ownership or public rights once our study is complete. (Exhibit 6).

Staff contacted the State Lands Commission staff to determine if they had any comments to provide during our review of this application. Jane Smith, of the State Lands Commission staff had no further comments as of October 16, 1998 and stated that it was unknown when the study of state ownership in this area would be completed by the SLC.

Staff reviewed the mean high tide line provided in the David Weiss and Associates Reports. The average Mean High Tide Line location as surveyed July 14, 1998 is seaward of the proposed seal wall, existing residential structure, and deck, by about sixty (60) feet, thirty-five (35) feet, and twenty-eight (28) feet, respectively. Therefore, the entire proposed project, based upon the evidence available to date, appears to be some distance landward of the mean high tide line.

#### **b. Wave Uprush**

In order to determine the impacts of the proposed seal wall on the shoreline, the location of the proposed protective device in relation to the expected wave runup must be analyzed. With respect to inundation of the beach fronting the sections of new seal wall during high tide and low beach profile conditions in the winter, the data provided by David Weiss and Associates, cited below, indicates that such inundation will occur. What remains unclear is the frequency at which the inundation will occur. The beach

profile data included in the Coastal Engineering Report also shows that the seal wall is not located near documented positions of the MHTL.

It is important to accurately calculate the potential for wave runup and wave energy affecting the bulkhead and base rock in the future. Dr. Inman, renowned authority on Southern California beaches concludes that:

The likely detrimental effect of the seawall on the beach can usually be determined in advance by competent analysis.

Dr. Inman further explains the importance of the seawall's design and location as it relates to predicting the degree of erosion that will be caused by the seawall. He states:

While natural sand beaches respond to wave forces by changing their configuration into a form that dissipates the energy of the waves forming them, seawalls are rigid and fixed, and at best can only be designed for a single wave condition. Thus, seawalls introduce a disequilibrium that usually results in the reflection of wave energy and the increased erosion seaward of the wall. The degree of erosion caused by the seawall is mostly a function of its reflectivity, which depends upon its design and location.<sup>5</sup>

In past permit actions, the Commission has found that one of the most critical factors controlling the impact of seawalls on the beach is its position on the beach profile relative to the surf zone. All other things being equal, the further seaward the seawall is located, the more often and more vigorously waves interact with it. The best place for a seawall, if one is necessary, is at the back of the beach where it provides protection against the largest storms. By contrast, a seawall built out too close to the Mean High Tide Line may constantly create problems related to frontal and end scour, as well as upcoast sand impoundment.

David Weiss and Associates, the applicant's engineering consultant, state in their Coastal Engineering Report, dated August 4, 1998, that they "performed wave calculations and plotted the Design Beach Profile for critical storm generated waves as set forth by the Los Angeles County Building Standards for this part of Malibu, California" and "analyzed storm wave damage to existing structures and gave recommendations to protect and repair those structures". These calculations were used to assess the potential shoreline profile during normal and extreme storm conditions and make design repair recommendations. As noted in the Report, two wave designs were used on the design beach profile to determine the location of where these waves would break and the location of the most landward extent of the wave uprush. According to both wave design scenarios, the waves would break seaward of the design shoreline, however, wave uprush would extend to the Pacific Coast Highway right-of-way line and fifteen (15) feet seaward of the Pacific Coast Highway right-of-way

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<sup>5</sup> Letter dated 25 February 1991 to Lesley Ewing, Coastal Commission staff from Dr. Douglas Inman.

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line, if the property were not protected with a bulkhead. These wave break locations are about 27 and 42 feet seaward of the existing bulkhead, which is located about 82 feet seaward of the Pacific Coast Highway right-of-way.

Based on the above discussion and facts concerning Corral Beach, the Commission finds that the proposed seal wall at its proposed location, has the potential to encroach into an area of the beach that is currently subject to wave action during severe storm and high tide events. Furthermore, the Commission finds that Corral Beach is a narrow oscillating beach and that the proposed seal wall, at times, will be subject to wave action during storm and/or high tide events. Therefore, the following discussion is intended to evaluate the impacts of the proposed seal wall on the beach based on the above information which identified the specific structure design, the location of the structure, and the shoreline geomorphology.

### **3. Effects of the Shoreline Protective Device on the Beach**

The proposed new 60 foot long seal wall located seaward of along the existing wood bulkhead will be constructed on the sandy beach between about 82 feet and 90 feet seaward of the Pacific Coast Highway right-of-way. An engineered bulkhead is typically built along straight sand beaches or low coastal bluffs where fill can be placed landward of the bulkhead to support roadways and sewage disposal systems that are constructed on fill land. Therefore, the bulkhead structure functions as both a retaining structure and as protection from wave attack and wave runup.

The proposed project involves a shoreline structure that, as a result of wave interaction, has the potential to affect the configuration of the shoreline and the beach profile and may have an adverse impact on the shoreline. Even though the precise impact of a shoreline structure on the beach is a persistent subject of debate within the discipline of coastal engineering, particularly between coastal engineers and marine geologists, it is generally agreed that a shoreline protective device will affect the configuration of the shoreline and beach profile whether it is a vertical bulkhead or a rock revetment. The main difference between a vertical bulkhead and rock revetment is their physical encroachment onto the beach. However, it has been well documented by coastal engineers and coastal geologists that shoreline protective devices or shoreline structures in the form of either a rock revetment or vertical bulkhead will adversely impact the shoreline as a result of beach scour (the beach areas at the end of the seawall), retain potential beach material behind the wall, fix the back beach, and interrupt longshore processes. In order to evaluate these potential impacts relative to the proposed structure and its location on Corral Beach, each of the identified effects will be evaluated below.

#### **a. Encroachment on the Beach**

Shoreline protective devices, such as seawalls, bulkheads, revetments, groins, etc., all are physical structures which occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used for other beach

purposes, such as recreation. If the underlying beach area is public beach, the public will not be able to use the beach area in the way it had prior to the placement of the device. This area will be altered from the time the protective device is constructed and the extent or area occupied by the device will remain the same over time, until the device is removed or is moved from its initial location. The beach area located beneath a shoreline protective device, referred to as encroachment area, is the area of the structure's footprint. This impact may be quantified as follows:

*The encroachment area ( $A_e$ ) is equal to the width of the property which is being protected ( $W$ ) times the seaward encroachment of the device ( $E$ ). This can be expressed by the following equation:*

$$A_e = W \times E$$

The applicant proposes to construct a shoreline protective device that encroaches further seaward. A new seal wall is proposed to be located across the base of the existing wooden bulkhead about eight (8) feet wide at the base and about 60 feet long (Exhibit 5). The seal wall is a triangular shaped feature that is wide at the base and narrow at the top. Therefore, the total encroachment area is about 480 square feet of beach. Thus, the direct seaward encroachment impact of the applicant's proposed project will be a total of 480 square feet of sandy beach area. However, as noted above, the actual area of physical encroachment is well under the existing residential structure, except for the end wall connection to the bluff to the east. Therefore, the actual physical displacement of sandy beach which is available for public recreation or access is not an issue in this case. However, as discussed below, the potential adverse effects to the beach profile resulting from scour effects of the seal wall does affect public access and recreation on the beach.

#### **b. Beach Scour**

Scour is the removal of beach material from the base of a cliff, seawall or revetment due to wave action. The scouring of beaches caused by shoreline protective devices is a frequently observed occurrence. When waves impact on a hard surface such as a coastal bluff, rock revetment or vertical bulkhead, some of the energy from the wave will be absorbed, but much of it will be reflected back seaward. This reflected wave energy in combination with the incoming wave energy, will disturb the material at the base of the seawall and cause erosion to occur in front and down coast of the hard structure. This phenomenon has been recognized for many years and the literature acknowledges that seawalls have some effect on the supply of sand. The following quotation summarizes a generally accepted opinion within the discipline of coastal engineering that:

Seawalls usually cause accelerated erosion of the beaches fronting them and an increase in the transport rate of sand along them.<sup>6</sup>

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<sup>6</sup> Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway

Ninety-four experts in the field of coastal geology, who view beach processes from the perspective of geologic time, signed the following succinct statement of the adverse effects of seawalls:

These structures are fixed in space and represent considerable effort and expense to construct and maintain. They are designed for as long a life as possible and hence are not easily moved or replaced. They become permanent fixtures in our coastal scenery but their performance is poor in protecting community and municipalities from beach retreat and destruction. Even more damaging is the fact that these shoreline defense structures frequently enhance erosion by reducing beach width, steepening offshore gradients, and increasing wave heights. As a result, they seriously degrade the environment and eventually help to destroy the areas they were designed to protect.<sup>7</sup>

The above 1981 statement signed by 94 respected coastal geologists indicates that sandy beach areas available for public use can be harmed through the introduction of seawalls. Thus, in evaluating an individual project, the Commission assumes that the principles reflected in that statement are applicable. To do otherwise would be inconsistent with the Commission's responsibilities under the Coastal Act to protect the public's interest in shoreline resources. Specifically, to protect the public's access along the ocean and to the water, as discussed in more detail in the subsequent Section IV.C. titled; Public Access.

The impact of seawalls as they are related to sand removal on the sandy beaches is further documented by the State Department of Boating and Waterways:

While seawalls may protect the upland, they do not hold or protect the beach which is the greatest asset of shorefront property. In some cases, the seawall may be detrimental to the beach in that the downward forces of water, created by the waves striking the wall rapidly remove sand from the beach.<sup>8</sup>

Finally this observation was underscored more recently in 1987 by Robert G. Dean in "Coastal Sediment Processes: Toward Engineering Solutions":

Armoring can cause localized additional storm scour, both in front of and at the ends of the armoring ... . Under normal wave and tide conditions, armoring can contribute to the downdrift deficit of sediment through decreasing the supply on an eroding coast and interruption of supply if the armoring projects into the active littoral zone.<sup>9</sup>

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Institute of Oceanography), pg. 4.

7 Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway Institute of Oceanography), pg. 4.

8 State Department of Boating and Waterways (formerly called Navigation and Ocean Development), Shore Protection in California (1976), page 30.

9 Coastal Sediments '87.

Dr. Craig Everts found that on narrow beaches where the shoreline is not armored, the most important element of sustaining the beach width over a long period of time is the retreat of the back beach and the beach itself. He concludes that:

Seawalls inhibit erosion that naturally occurs and sustains the beach. The two most important aspects of beach behavior are changes in width and changes in the position of the beach. On narrow, natural beaches, the retreat of the back beach, and hence the beach itself, is the most important element in sustaining the width of the beach over a long time period. Narrow beaches, typical of most of the California coast, do not provide enough sacrificial sand during storms to provide protection against scour caused by breaking waves at the back beach line. This is the reason the back boundary of our beaches retreats during storms.<sup>10</sup>

Dr. Everts further concludes that armoring in the form of a seawall interrupts the natural process of beach retreat during a storm event and that:

A beach with a fixed landward boundary is not maintained on a recessional coast because the beach can no longer retreat.

The Commission has observed this phenomenon up and down California's coast, where a seawall has successfully halted the retreat of the shoreline, but only at the cost of usurping the beach. For example, at La Conchita Beach in Ventura County, placement of a rock revetment to protect an existing roadway has caused narrowing of the existing beach. Likewise, at City of Encinitas beaches in San Diego County, construction of vertical seawalls along the base of the bluffs to protect existing residential development above, has resulted in preventing the bluffs' contribution of sand to the beaches, resulting in narrowing. Although this may occur slowly, the Commission concludes that it is the inevitable effect of constructing a seawall on an eroding shoreline. In such areas, even as erosion proceeds, a beach would be present in the absence of a seawall.

As set forth in the above discussion, Corral Beach is a narrow oscillating beach. The applicant's coastal engineering consultant has indicated that the seal wall will be acted upon by waves during storm conditions. The applicant's consultant, David Weiss and Associates, has stated that wave uprush will extend to the Pacific Coast Highway right-of-way line and fifteen (15) feet seaward of the Pacific Coast Highway right-of-way line, if the property were not protected with a bulkhead. These wave break locations are about 27 and 42 feet seaward of the existing bulkhead, which is located about 82 feet seaward of the Pacific Coast Highway right-of-way. This estimate of wave runup does not take into account worst case severe storm events. If an eroded beach condition occurs with great frequency due to the placement of the seal wall, this site would also

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<sup>10</sup> Letter Report dated March 14, 1994 to Coastal Commission staff engineer Lesley Ewing from Dr. Craig Everts, Moffatt and Nichol Engineers.

accrete at a slower rate. During periods of beach erosion, this site would erode more. Therefore, based on the report prepared by the Army Corp of Engineers 1994 Malibu study and the analysis of David Weiss and Associates, the Commission finds that over time, the new seal wall would be acted upon more frequently during winter months.

The Commission notes that many studies performed on both oscillating and eroding beaches have concluded that loss of beach occurs on both types of beaches where a shoreline protective device exists. The Coastal Engineering Report, dated August 4, 1998, addresses beach scour created by the proposed seal wall. The Report states:

There may be some potential for a little additional scour at the base of the wall due to "reflected" wave scour. This scour has no permanent effect on the beach and is accounted for in the specification of the depth of the sheathing/structure.

Therefore, the Commission notes that the proposed seal wall, over time, will result in potential adverse effects to the beach sand supply resulting in increased seasonal erosion of the beach and longer recovery periods.

The impacts of potential beach scour is important relative to beach use for two reasons. The first reason involves public access. As explained in the subsequent section relating to public access, Corral Beach has historically been used by the public. The subject property is located within about 250 feet from an existing vertical public accessway that has been maintained and operated by Los Angeles County. If the beach scours at the base of the seal wall, even minimal scouring in front of the 60 foot long wall will translate into a loss of beach sand available (i. e. erosion) at a more accelerated rate than would otherwise occur under a normal winter season if the beach were unaltered. The second impact relates to the potential turbulent ocean condition. Scour at the face of the seal wall will result in greater interaction with the wall, and thus, make the ocean along Corral Beach more turbulent than it would along an unarmored beach area. Therefore, the Commission finds that the proposed seal wall will cause greater erosion than under natural conditions and less rapid beach recovery through accretion.

As such, the Commission has ordinarily required that all new development on a beach, including shoreline protection devices, be located as landward as possible in order to reduce adverse impacts from scour and erosion. In the case of this project, the Commission notes that the applicant has located the proposed seal wall as far landward as feasible. The proposed seal wall will be aligned with the same proposed seal wall on the adjoining property to the west (Gallo) and it will be connected to an end wall (bulkhead) and the proposed seal wall to the bluff on the east portion of the subject property as conditioned. This condition modifying the proposed design is discussed below. Alternative shoreline protective designs are discussed further below. As such, the alignment and connection of the proposed seal wall with the proposed seal walls and existing wood bulkheads on the adjoining property to the west and the bluff on the east will serve to minimize end effect erosion between the two structures. In addition, in past permit actions, the Commission has also required that all new development on a

beach, including shoreline protection devices, provide for public lateral access along the beach in order to reduce any adverse impacts to public access. As such, in order to mitigate any adverse impacts to public access, the applicant has proposed to offer a dedication for a public lateral access easement along the beach. Special condition one (1) has been required in order to ensure that the applicant's proposal of an offer to dedicate a new lateral public access easement is carried out. Therefore, as conditioned, the project will minimize the adverse impacts resulting from construction of the revetment and is consistent with the applicable Coastal Act sections and with past Commission action.

### **c. End Effects**

End effects involve the changes to the beach profile adjacent to the bulkhead or seawall at either end. One of the more common end effects comes from the reflection of waves off the bulkhead in such a way that they add to the wave energy which is impacting the unprotected coastal areas on either end. Coastal engineers have compared the end effects impacts between revetments and bulkheads. In the case of the bulkhead, wave energy is reflected back and to the ends which can cause erosion at the upcoast and downcoast ends of the bulkhead. In the case of a vertical bulkhead, return walls are typically constructed, and, thus, wave energy is also directed to the return walls causing end erosion effects.

The Commission notes that the literature on coastal engineering repeatedly warns that unprotected properties adjacent to the seawall may experience increased erosion. Field observations have verified this concern.<sup>11</sup> Although it is difficult to quantify the exact loss of material due to end effects, in a paper written by Gerald G. Kuhn of the Scripps Institution of Oceanography, he concludes that erosion on properties adjacent to a rock seawall is intensified when wave runup is high.

An extensive literature search on the interaction of seawalls and beaches was performed by Nicholas Kraus in which he found that seawalls will have effects on narrow beaches or beaches eroded by storm activity, such as Corral. His research indicated that the form of the erosional response to storms that occurs on beaches without seawalls that are adjacent to beaches with seawalls is manifested as more localized toe scour and end effects of flanking and impoundment at the seawall.<sup>12</sup> Dr. Kraus' key conclusions were that seawalls could be accountable for retention of sediment, increased local erosion and increased end erosion. Dr. Kraus states:

At the present time, three mechanisms can be firmly identified by which seawalls may contribute to erosion at the coast. The most obvious is retention of sediment behind the wall which would otherwise be released to the littoral

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<sup>11</sup> Paper by Gerald G. Kuhn of the Scripps Institute of Oceanography entitled "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California" (1981).

<sup>12</sup> "Effects of Seawalls on the Beach", published in the Journal of Coastal Research, Special Issue #4, 1988.

system. The second mechanism, which could increase local erosion on downdrift beaches, is for the updrift side of the wall to act as a groin and impound sand. This effect appears to be primarily theoretical rather than actualized in the field, as a wall would probably fail if isolated in the surf zone. The third mechanism is flanking i.e. increased local erosion at the ends of walls.

In addition, preliminary results of researchers investigating the length of shoreline affected by heightened erosion adjacent to seawalls concluded that:

Results to date indicate that erosion at the ends of seawalls increases as the structure length increases. It was observed in both the experimental results and the field data of Walton and Sensabaugh (1978) that the depth of excess erosion is approximately 10% of the seawall length. The laboratory data also revealed that the along-coast length of excess erosion at each end of the structure is approximately 70% of the structure length.<sup>13</sup>

A more comprehensive study was performed over several years by Gary Griggs which concluded that beach profiles at the end of a seawall are further landward than natural profiles.<sup>14</sup> This effect appears to extend for a distance of about 6/10 the length of the seawall and represents both a spatial and temporal loss of beach width directly attributable to seawall construction. In the case of this project the scour effects could be as great as 60 feet (6/10 of 99 feet = 60 feet). These end effects would be expected only when the seawall was exposed to wave attack and, under equilibrium or accreting beach conditions, this scour would disappear eventually during post-storm recovery. However, such cases of renourishment of end areas are rare for erosional beaches.

With respect to the subject site, the adjacent property upcoast to the west is developed with a residence and has a wood bulkhead and proposed a similar seal wall (Gallo, Application No. 4-98-050) which also protects their septic system and access driveway. This bulkhead to the west is located in the same alignment as this applicant's bulkhead. The applicant proposes to construct a seal wall in front of an 'unpermitted' and un-engineered rock rubble wall located in front of and to the east of the end wall on the east side of the applicant's property (Exhibit 5). The proposed seal wall will be connected to the bluff on the subject property. The bluff has 'unpermitted' shotcrete façade on the applicant's property and adjoining property to the east. Because the 'unpermitted' rock rubble wall is un-engineered and occupies sandy beach without a valid coastal development permit, the applicant is required to remove the rock rubble wall and redesign the proposed seal wall to conform to the existing wood bulkhead on the seaward side and the wood bulkhead end wall on the east side of the property below the residence. Special Condition Number five (5) requires that the applicant, prior to issuance of the coastal development permit, submit revised plans subject to the

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<sup>13</sup> "Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties" by W.G. McDougal, M.A. Sturtevant, and P.D. Komar in Coastal Sediments '87.

<sup>14</sup> "The Interaction of Seawalls and Beaches: Seven Years of Field Monitoring, Monterey Bay, California" by G. Griggs, J. Tait, and W. Corona, in Shore and Beach, Vol. 62, No. 3, July 1994.

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review and approval of the Executive Director that indicate the existing 'unpermitted' and un-engineered rock rubble wall on the eastern portion of the subject property be removed from the applicant's property and disposed of in an appropriate disposal site located either outside the coastal zone or a site with a valid coastal development permit for disposal. The revised plans shall indicate that the proposed seal wall will be relocated to conform to and connect to the existing wood bulkhead on the seaward side and the bulkhead end wall and bluff located below the eastern portion of the residential structure. A licensed coastal engineer shall prepare the revised plans.

The applicant's consultant, David Weiss and Associates, submitted information regarding the potential end effects of the proposed seal wall. The Coastal Engineering Report updated and titled, "Coastal Permit Application No. 4-98-051, dated August 4, 1998 states:

It is my opinion that the proposed structure will have no adverse effects on adjacent properties. The existing timber bulkhead is in line with the timber bulkhead to the west and well under both buildings. The land to the east is the west end of Corral Dan Blocker Beach. The proposed repair wall is in line with a similar structure proposed for the property to the west.

The Update letter titled; Coastal Permit Application No. 4-98-050 (actually 051) dated September 17, 1998 states:

The location of the sea wall as designed will have no adverse impact on the adjoining private properties to the west.

The Commission notes that end effect erosion may be minimized by locating a proposed shoreline protection device as landward as possible in order to reduce the frequency that the bulkhead or seal wall is subject to wave action. In the case of this project, the Commission further notes that the proposed seal wall is located as landward as feasible, as required by Special Condition Number five (5) and still be able to align and connect with the existing bulkhead end wall and bluff on the east and the existing bulkhead and seal wall located on the adjacent property to the west (Gallo). This issue is discussed further below. The existing end wall and a proposed seal wall connects the bulkhead to the bulkhead end wall and the bluff to the east as conditioned. The alignment and connection of the proposed seal wall with the existing bulkhead and end wall on the east side of the property will also serve to minimize end effect erosion between the bulkhead and the bluff. As such, the proposed seal wall is designed to minimize erosional end effects along both the western and eastern ends of the wall. Therefore, the proposed project, as conditioned, is consistent with the applicable Coastal Act sections and with past Commission action.

**d. Retention of Potential Beach Material**

A shoreline protective device's retention of potential beach material inherently impacts shoreline processes. One of the main functions of a bulkhead or revetment is upland stabilization; to keep the upland sediments from being carried to the beach by wave action and bluff retreat. In the case of Corral Beach, which is located in the Santa Monica Littoral Cell, the back of the beach is fixed at Pacific Coast Highway. When the beach in front of the structure disappears over time, the natural shoreward migration of the beach is blocked by the structure. The National Academy of Sciences found that retention of material behind a shoreline protective device may be linked to increased loss of material in front of the wall. The net effect is documented in "Responding to Changes in Sea Level, Engineering Implications" which provides :

A common result of sea wall and bulkhead placement along the open coastline is the loss of the beach fronting the structure. This phenomenon, however, is not well understood. It appears that during a storm the volume of sand eroded at the base of a sea wall is nearly equivalent to the volume of upland erosion prevented by the sea wall. Thus, the offshore profile has a certain "demand" for sand and this is "satisfied" by erosion of the upland on a natural beach or as close as possible to the natural area of erosion on an armored shoreline...<sup>15</sup>

As explained, the seal wall will protect Pacific Coast Highway from continued loss of sediment. However, the result of this protection, particularly on a narrow, eroding beach, is a loss of sediment on the sandy beach area that fronts the bulkhead or rock seawall. Furthermore, as explained previously, this loss of sediment from the active beach leads to a lower beach profile, seaward of the protective device, where the seal wall will have greater exposure to wave attack.

As such, the Commission has ordinarily required that all new development on a beach, including shoreline protection devices, which may have adverse impacts on the beach sand supply to offer public lateral access easements in order to reduce any adverse impacts to public access. In past permit actions, the Commission has also required that all new development on a beach, including shoreline protection devices, provide for public lateral access along the beach in order to reduce any adverse impacts to public access. As such, in order to mitigate any adverse impacts to public access along the beach, the applicant has proposed to dedicate a new public lateral access easement along the beach. Special condition one (1) has been required in order to ensure that the applicant's offer to dedicate a new lateral public access easement is carried out. Therefore, as conditioned, the project will minimize the adverse impacts resulting from construction of the seal wall and is consistent with the applicable Coastal Act sections and with past Commission action.

#### **4. Alternative Designs**

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<sup>15</sup> National Academy of Sciences, Responding to Changes in Sea Level: Engineering Implications, National Academy Press, Washington D.C., 1987, page 74.

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It has been found that the further landward the bulkhead is located, the less beach scour will result. The alternative of re-siting of the existing bulkhead to a more landward location may reduce the effects on the beach caused by wave runup during winter storms that occurred during average and high tides. Lessening the wave energy when it reaches the relocated bulkhead will minimize the beach scour in front of the relocated bulkhead without the need for a protecting seal wall.

In response to the initial application submittal on April 9, 1998, Staff requested, in a letter dated April 28, 1998, a geotechnical report and wave uprush study prepared in accordance with the Commission guidelines, since one was not submitted with the application. Staff requested a discussion and analysis of alternatives including locating the seal wall & bulkhead landward of the proposed location to eliminate seaward encroachment, reconstruct the bulkhead in the existing and landward location, and other designs, etc.

The applicant's engineer, David Weiss and Associates, addressed alternatives in the Coastal Engineering Report and in the Update Report. In the Coastal Engineering Report dated August 4, 1998, the engineer stated:

The purpose of the proposed bulkhead repair is to protect the proposed onsite sewage disposal system. Alternatives such as no bulkhead wall or beach nourishment are not viable, since something must be done to protect the system. To my knowledge, there is no way of nourishing just one or two lots. Given the size of the lot, there is no other location for the sewage disposal system. A third alternative might be a rock revetment; however, that would be much more intrusive.

Staff requested, in a letter dated September 1, 1998, a discussion of a broad range of alternatives beyond those listed as examples in the guideline titled: "Information needed before your application can be filed". These alternatives requested for the engineer to discuss and analyze including locating the seal wall and bulkhead landward of the proposed location to eliminate seaward encroachment, reconstruct the bulkhead in the existing location, and other designs, etc. In response, the engineer provided additional information in the Update Report dated September 17, 1998:

The purpose of the existing bulkhead is to protect the sewage disposal system that serves this site. The existing timber protective structure is inadequate to resist the lateral earth forces and too shallow to prevent undermining during storms of design magnitude. This was demonstrated during the storms of this past winter when this section beach scoured to approximately +5.0' M.S.L. Keeping with the design standard that the bottom of a structure should be founded at least two feet below the Design Beach Profile, this office has placed the bottom of the concrete sea wall at 0.0' M.S.L. The thickness of the wall was proportioned in accordance with needs to prevent overturning due to the large horizontal earth pressure to which the structure will be subjected when the beach scours to the Design Beach Profile. If a slim, vertical "ELL" shaped wall were to

be used, the footing would be at least as wide, or wider than the base of the wall as designed. Additionally, an "ELL" shaped wall would require a rather large key to resist sliding. The larger footing width and key would all be required due to the fact that an "ELL" shaped wall would be lighter than the one designed and therefore, not have the resisting mass that the structure, as designed, has. The wall cannot be placed on the inside (landward) of the existing protective structure because the sewage disposal field is located between the structure and the base of the slope from the road above. There is no room to push the field back toward the road without seriously excavating away the toe of the slope and possibly undermining the existing piles in that area. There is an existing, functional sewage disposal system. After the drain field was washed away, it was reconstructed as required by the Health Department in order to prevent sewage spills onto the beach. In light of the facts mentioned above, I have concluded that it is not feasible to construct the bulkhead wall repair in a landward location. The location of the seal wall as designed will have no adverse impact on the adjoining private properties on either side. The concrete sea wall is well under the footprint of the building and well landward of the face existing sea walls on the two lots to the west. Additionally, it aligns with the concrete sea wall proposed for the property to the east.

The concrete wall as designed would be exposed to view only after storms of at least the magnitude experienced this last winter or the winters of 1982-83 or 1988. The most seaward projection of the proposed concrete wall is located at a depth of approximately ten feet below the "normal" sand elevation, for a height of three feet and then the face of the proposed structure slopes back to a thickness of only sixteen inches at the top. The top of the concrete repair wall is well below the top of the existing timber wall. Since the storms of January/February 1998, the sand has returned to a height of one foot below the top of the existing wall (as opposed to eight feet below the top of the wall in January).

The only other type of protective structure that I could think of for the disposal system is a rock revetment. This type of structure would extend further seaward than the proposed sea wall. A revetment would require the use of more and larger equipment on the beach. The construction of a rock revetment would require more excavation than the proposed structure.

It is fallacious reasoning to believe elimination of all protective structures will prevent loss of beaches due to the loss of sediments from inland sources that feed the beaches, melting of the polar ice cap, or some other catastrophic event. As pointed out in the U. S. Army Corps of Engineers Reconnaissance Study of the Malibu/Los Angeles County Coastline and the experts, who lectured to the Coastal Commission at their May meeting in Sacramento, very little sand supply is derived from erosion of the coastal bluffs. All that would happen is the higher waves or higher water level would run smack up against the cliff or infrastructure (i.e., slope of P.C.H., etc.). The answer to saving the beaches is a global solution of artificial sand supply and, yes, some walls. The problem cannot be

solved on a lot by lot basis. It won't be solved by preventing individual property owners from protecting their properties. It won't be solved until a regional solution is implemented.

In response to staff's questions regarding reconstructing the existing bulkhead in the same location and constructing a new bulkhead in a more landward location, David Weiss provided additional information in a memo titled, Response to Fax Re: Gallo, Tuchman, Neiter/Behar, dated October 19, 1998:

The existing timber bulkhead cannot be repaired by just adding sheathing to increase the depth because the existing piles are neither deep enough nor strong enough to resist the additional thrusts of the deepened structure. Additional piles cannot be added to the existing bulkhead because there is not adequate headroom to get a drill rig or pile driver under the building. A new timber bulkhead cannot be constructed under the building because neither new concrete piles can be drilled nor new timber piles be driven for the same reason.

The bulkhead(s) cannot be moved landward because the existing, functioning sewage disposal systems are located in a narrow space between the existing bulkheads and the toe of the road embankment. The fields cannot be located landward without serious re-grading of the slope(s) and possibly undermining the building piles on the slope(s).

The applicant's consultant, David Weiss and Associates, concluded that alternatives such as an 'ELL' shaped bulkhead, relocating the concrete seal wall on the inside or landward side of the existing bulkhead, constructing a rock revetment, lot by lot artificial sand supply to the beach, repairing or reconstructing the bulkhead in the existing location or in a more landward location, are not feasible. In this case, the alternative designs are determined to be infeasible.

Therefore, the Commission finds that constructing a new seal wall at the seaward base of the existing wood bulkhead and end wall is the preferred and feasible alternative. The Commission also finds that the proposed project, as conditioned to be redesigned to remove the 'unpermitted' rock rubble wall, including the applicant's proposed offer to dedicate a new public lateral access easement along the beach, will minimize the beach scour effects of the seal wall and ensure the project will not result in any significant adverse impacts on the shoreline. Therefore, the proposed project, as conditioned, is consistent with Sections 30235, 30250, and 30253 of the Coastal Act.

## **5. Conclusion**

In conclusion, the Commission finds that the proposed seal wall will potentially have adverse impacts on the shoreline. In addition, there is substantial evidence that the seawall as proposed could adversely impact sand supply and public access as a result of beach scour, retention of potential beach material and interruption of onshore and along shore processes. However, Coastal Act section 30235, which is previously cited,

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states that shoreline protective devices, such as revetments and other construction that would alter natural shoreline processes, shall be permitted when those structures are necessary to serve coastal-dependent uses or to protect existing structures or to protect public beaches in danger from erosion and when they are designed to eliminate or mitigate adverse impacts on local shoreline sand supply. In the case of this project, the applicant's coastal engineering consultant has stated that the proposed seal wall is necessary to protect an existing sewage disposal system serving an existing single family residence and two residential rental units. Further, as previously discussed in detail, the Commission also finds that the subject site is located on a beach that appears to be an oscillating beach and that the proposed seal wall would serve to protect the existing sewage disposal system and the existing residential development.

In addition, in past permit actions, the Commission has required that all new development on a beach, including shoreline protection devices, be located as landward as possible in order to reduce adverse impacts to the sand supply and public access resulting from the development.<sup>16</sup> The Commission notes that the applicant has located the proposed seal wall as far landward as feasible in order to align the proposed seal wall with the existing wood bulkhead and proposed seal wall to the west and connect it to the existing end wall and proposed seal wall to the bluff on the east portion of the applicant's project site. Alignment and connection of the proposed seal wall, where feasible, with the existing wood bulkhead, end wall, and proposed seal walls will also minimize end effect scour and erosion between adjoining properties. Therefore, the Commission finds that the proposed project, as conditioned, meets the first and second tests of Section 30235.

Further, in past permit actions, the Commission has also required that all new development on a beach, including shoreline protection devices, provide for public lateral access along the beach in order to reduce any adverse impacts to public access. As such, in order to mitigate any adverse impacts to public access along the beach, the applicant has proposed to dedicate a new public lateral access easement along the beach. Special condition one (1) has been required in order to ensure that the applicant's offer to dedicate a new lateral public access easement is carried out.

Therefore, as proposed and conditioned, the project will minimize the adverse impacts resulting from construction of the revetment and is consistent with the applicable Coastal Act sections. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30235 of the Coastal Act. In addition, the Commission finds that the proposed project is considered new development that will be located within an existing developed area able to accommodate it and that, only as conditioned, is the proposed project consistent with Section 30250 Coastal Act. The Commission also finds that the proposed project, as conditioned, will minimize risks to life and property in areas of flood hazard and assure stability and structural integrity that will not require the construction of protective devices that would substantially alter natural landforms along bluffs. Thus, the Commission finds that, only as conditioned,

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<sup>16</sup> Coastal Development Permit 4-97-071 (Schaeffer)

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the proposed project is consistent with Sections 30235, 30250, and 30253 of the Coastal Act.

**C. Public Access.**

One of the basic mandates of the Coastal Act is to maximize public access and recreational opportunities along the coast. The Coastal Act has several policies which address the issues of public access and recreation along the coast.

**Section 30210 of the Coastal Act states:**

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

**Section 30211 of the Coastal Act states:**

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

**Section 30212 of the Coastal Act states (in part):**

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

...

(2) adequate access exists nearby...

**Section 30220 of the Coastal Act states:**

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

**1. Public Access**

Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, section 30212 of the Coastal Act requires that public access to the sea be provided, except where adequate access exists nearby. Section 30211 provides that development not interfere with the public's right of access to the sea including the use of dry sand and rocky coastal beaches. Section

30220 of the Coastal Act requires coastal areas suited for coastal recreational activities, that cannot be provided at inland water areas, be protected.

The major access issue in this permit is the occupation of sand area by a structure, in contradiction of Coastal Act policies 30211 and 30221. Section 30211 requires that development shall not interfere with access.

As proposed, this project would extend seaward onto a sandy beach area approximately eight (8) feet beyond the existing wood bulkhead. As noted above, an existing public vertical accessway is located approximately 250 ft. to the east of the project site to Dan Blocker State Beach. All projects requiring a coastal development permit must be reviewed for compliance with the public access and recreation provisions of Chapter 3 of the Coastal Act. Based on the access, recreation and development sections of the Coastal Act, the Commission has required public access to and along the shoreline in new development projects and has required design changes in other projects to reduce interference with access to and along the shoreline.

As noted above, interference by the proposed seal wall has a number of effects on the dynamic shoreline system and the public's beach ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile which results from a reduced beach berm width, alter the usable area under public ownership. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions will have less horizontal distance between the mean low water and mean high water lines. This reduces the actual area in which the public can pass on their own property. The second effect on access is through a progressive loss of sand as shore material is not available to nourish the bar. The lack of an effective bar can allow such high wave energy on the shoreline that materials may be lost far offshore where it is no longer available to nourish the beach. The effect of this on the public is again a loss of area between the mean high water line and the actual water. Third, shoreline protective devices such as seal walls and bulkheads cumulatively affect public access by causing accelerated and increased erosion on adjacent public beaches. This effect may not become clear until such devices are constructed individually along a shoreline and they reach a public beach. Fourth, if not sited landward in a location that insures that the seawall is only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave's energy. Finally, shoreline protective devices interfere directly with public access by their occupation of beach area that will not only be unavailable during high tide and severe storm events but also potentially throughout the winter season.

Due to the aforementioned adverse impacts of shoreline protective structures on public access, the proposed shoreline protection device must be judged against the public access and recreation policies of the State Constitution, Sections 30210, 30220, and 30211 of the Coastal Act. Along the California coast, the line between land and ocean is complex and constantly moving.

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The State Owns Tidelands, Which Are Those Lands below the Mean High Tide Line as it Exists From Time to Time. By virtue of its admission into the Union, California became the owner of all tidelands and all lands lying beneath inland navigable waters. These lands are held in the State's sovereign capacity and are subject to the common law public trust. The public trust doctrine restricts uses of sovereign lands to public trust purposes, such as navigation, fisheries, commerce, public access, water-oriented recreation, open space and environmental protection. The public trust doctrine also severely limits the ability of the State to alienate these sovereign lands into private ownership and use free of the public trust. Consequently, the Commission must avoid decisions that improperly compromise public ownership and use of sovereign tidelands.

Where development is proposed that may impair public use and ownership of tidelands, the Commission must consider where the development will be located in relation to tidelands. The legal boundary between public tidelands and private uplands is known as the ordinary high water mark. (Civil Code, § 830.) In California, where the shoreline has not been affected by fill or artificial accretion, the ordinary high water mark of tidelands is determined by locating the existing "mean high tide line." The mean high tide line is the intersection of the elevation of mean high tide with the shore profile. Where the shore is composed of a sandy beach whose profile changes as a result of wave action, the location at which the elevation of mean high tide line intersects the shore is subject to change. The result is that the mean high tide line (and therefore the boundary) is an "ambulatory" or moving line that moves seaward through the process known as accretion and landward through the process known as erosion.

Consequently, the position of the mean high tide line fluctuates seasonally as high wave energy (usually but not necessarily) in the winter months causes the mean high tide line to move landward through erosion, and as milder wave conditions (generally associated with the summer) cause the mean high tide line to move seaward through accretion. In addition to ordinary seasonal changes, the location of the mean high tide line is affected by long term changes such as sea level rise and diminution of sand supply.<sup>17</sup>

The Commission Must Consider a Project's Direct and Indirect Impact on Public Tidelands. In order to protect public tidelands when beachfront development is proposed, the Commission must consider (1) whether the development or some portion of it will encroach on public tidelands (i.e., will the development be located below the mean high tide line as it may exist at some point throughout the year) and (2) if not located on tidelands, whether the development will indirectly affect tidelands by causing physical impacts to tidelands.

In order to avoid approving development that will encroach on public tidelands during any time of the year, the Commission, usually relying on information supplied by the State Lands Commission, will look to whether the project is located landward of the most landward known location of the mean high tide line. In this case, the State Lands Commission presently does not assert a claim that the project intrudes onto sovereign lands.

Even structures located above the mean high tide line, however, may have an impact on shoreline processes as wave energy reflected by those structures contributes to erosion and steepening of the shore profile, and ultimately to the extent and availability of tidelands. That is why the Commission also must consider whether a project will have indirect impacts on public ownership and public use of shorelands. As discussed elsewhere in the Commission's findings (see Section IV B Shoreline Protective Devices above), there is substantial evidence that this project will result in indirect impacts on tidelands because the bulkhead is located in an area that is subject to wave attack and wave energy.

The Commission Also Must Consider Whether a Project Affects Any Public Right to Use Shorelands That Exists Independently of the Public's Ownership of Tidelands. In addition to a development proposal's impact on tidelands and on public rights protected by the common law public trust doctrine, the Commission must consider whether the project will affect a public right to use beachfront property, independent of who owns the underlying land on which the public use takes place. Generally, there are three additional types of public uses identified as: (1) the public's recreational rights in navigable waters guaranteed to the public under the California Constitution and state common law;<sup>17</sup> (2) any rights that the public might have acquired under the doctrine of implied dedication based on continuous public use over a five-year period; and (3) any additional rights that the public might have acquired through public purchase, offers to dedicate and the like.

In this case, no evidence has been presented in connection with this application that the public may have acquired rights of use under the doctrine of implied dedication. However, there is evidence that the project would generate adverse individual and cumulative impacts on sand supply, beach profile, and ultimately, public access as a result of localized beach scour, retention of beach material and interruption of the alongshore and onshore sand transport process. The analysis further indicates that there is a strong possibility that the shoreline is oscillating and that the proposed seal wall will be subject to wave uprush. This too would limit the availability of sandy beach area and public access and recreation use.

These use rights are implicated as the public walks the wet or dry sandy beach below the mean high tide plane. This area of use, in turn moves across the face of the beach as the beach changes in depth on a daily basis. The free movement of sand on the beach is an integral part of this process, and it is here that the effects of structures are of concern.

The beaches of Malibu are extensively used by visitors of both local and regional origin and most planning studies indicated that attendance of recreational sites will continue to significantly increase over the coming years. The public has a right to use the shoreline under the public trust doctrine, the California Constitution and California

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<sup>17</sup> The existence and extent of this right was litigated in the *Lechuza Villas West* case.

common law. The Commission must protect those public rights by assuring that any proposed shoreline development does not interfere with or will only minimally interfere with those rights. Here, there is a high probability that the proposed seal wall will generate a permanent loss of sandy beach over time as a result: the direct placement of the seal wall on the beach; the change in the beach profile or steepening which is likely to result over time; and the presence of the existing residential structure out over sandy beach. Presently, this shoreline remains open and can be used by the public for access and general recreational activities.

As stated previously, an existing public vertical accessway is located approximately 250 feet to the east of the project site at Dan Blocker State Beach. This Beach is also known as Corral State Beach, is maintained by the County of Los Angeles as a public beach downcoast of the subject site. Recreational uses include passive and active beach use, fishing, scuba diving, and surfing. The Beach includes a parking area and restroom, with lifeguard services during the summer. In addition, beachgoers who access the beach, often walk along the shore towards Escondido Beach (upcoast from the project site) and back again passing directly in front of where the proposed seal wall is proposed to be located. Based on both historic and recent observations of beach use in this area, it is clear that measures to insure the protection of the public's ability to laterally access the area must be asserted.

In past permit actions, the Commission has required that all new development on a beach, including shoreline protection devices, be located as landward as possible in order to reduce adverse impacts to the sand supply and public access resulting from the development. The Commission notes that the applicant has located the proposed seal wall as landward as feasible in order to align the seal wall against the existing wood bulkhead and the existing wood bulkheads and proposed seal walls located on the parcels immediately adjacent to the project site. Alignment and connection of the proposed seal wall with the existing wood bulkhead and proposed seal walls adjacent to the subject site will also minimize end effect scour and erosion between the these shoreline protective devices.

In addition, in past permit actions, the Commission has also required that all new development on a beach, including shoreline protection devices, provide for public lateral access along the beach in order to reduce any adverse impacts to public access if accepted. The applicant has proposed to offer to dedicate a lateral access easement over the southern portion of the lot as measured ten (10) feet seaward of the deck extending to the mean high tide line, as part of this project. This dedication will include the entire beach under all tidal conditions with the exception of a ten (10) foot privacy buffer as measured seaward of the existing deck. The ten (10) foot privacy buffer will be available for public use for the purpose of pass and re-pass when no other dry areas of the beach are available for public access.

In order to conclude with absolute certainty what impacts the proposed seal wall would cause on the shoreline processes and public access, a historical shoreline analysis based on site-specific studies would be necessary. Because the applicant has

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proposed, as part of the project, an offer to dedicate a new lateral access easement along the southern section of the lot as measured from the seaward portion of the deck, it has not been necessary for Commission staff to engage in an extensive analysis as to whether the imposition of a new offer to dedicate would be required here absent the applicant's proposal. As such, special condition one (1) has been required in order to ensure that the applicant's offer to dedicate a new lateral public access easement is transmitted prior to the issuance of the coastal development permit. The specific location of the applicant's offer to dedicate lateral access dedication is illustrated in Exhibit 7.

Further, as noted above, beachgoers who access the beach from either Dan Blocker Beach, or Escondido Beach, often walk along the shore to from one beach to another and back again. Given the ambulatory nature of the mean high tide line, and thus the boundary between public and private lands, there may be ongoing conflicts and confusion between the beach users and private property owners regarding which portions of the subject beach are private and which are public. In addition, the placement of signs on single family beachfront homes which state "*PRIVATE BEACH*" or "*PRIVATE PROPERTY*" or contain similar such messages prohibiting public use of the beach have routinely caused members of the public to believe that they do not have the right to use the shoreline. In effect, these signs have served to contradict the public's rights to use the shoreline pursuant to the California Constitution and California common law. In order to ensure that the general public is not precluded from using the shoreline, the Commission finds it necessary to impose special condition two (2) which would prohibit the landowner from placing any signs which explicitly or implicitly indicate that the beach is private or like messages that attempt to prohibit public use of the beach. In addition, it is necessary that any signs posted on the applicant's property or any adjacent properties that pertain to use of this applicant's property be subject to the review and approval of the Executive Director prior to posting. The California Coastal Commission notes that the prohibition on signage on adjacent properties as spelled out in special condition two (2) is only intended to prohibit signage relating to the portion of the beach on Assessor's Parcel Number 4459-021-020 seaward of the existing deck permitted in this application.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30210, 30211, 30212 and 30220 of the Coastal Act.

**D. Hazards and Geologic Stability**

**Coastal Act Section 30253 states (in part):**

New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property in areas of high geologic, flood, and fire hazard. In addition to section 30253 of the Coastal Act, the certified Malibu/Santa Monica Mountains LUP includes several policies and standards regarding hazards and geologic stability. These policies have been certified as consistent with the Coastal Act and used as guidance by the Commission in numerous past permit actions in evaluating a project's consistency with section 30253 of the Coastal Act. For example, Policy 147 suggests that development be evaluated for impacts on and from geologic hazards.

#### **1. Storm, Wave and Flood Hazard**

The Malibu coast has been subject to substantial damage as a result of storm and flood occurrences, geological failures and firestorms. Therefore, it is necessary to review the proposed project and project site against the area's known hazards. The proposed project involves the construction of a seal wall seaward of the existing bulkhead to protect an existing sewage disposal system serving an existing residence on a lot located on a partially developed stretch of Corral Beach.

The site is susceptible to flooding and/or wave damage from storm waves and storm surge conditions. Past occurrences have resulted in public costs (through low-interest loans) in the millions of dollars in the Malibu area alone. Along the Malibu coast, significant damage has occurred to coastal areas from high waves, storm surge and high tides. In the winter of 1977-78, storms triggered numerous mudslides and landslides and caused significant damage along the coast. Damage to the Malibu coastline was well documented in the paper presented at the National Research Council, which stated that:

The southerly and southwesterly facing beaches in the Malibu area were especially hard hit by waves passing through the open windows between offshore islands during the 1978 and 1980 storms. These waves broke against beaches, seawalls, and other structures, causing damages of between \$2.8 and \$4.75 million to private property alone. The amount of erosion resulting from a storm depends on the overall climatic conditions and varies widely from storm to storm. Protection from this erosion depends largely on the funds available to construct various protective structures that can withstand high-energy waves.<sup>18</sup>

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<sup>18</sup> "Coastal Winter Storm Damage, Malibu, Los Angeles County, Winter 1977-78", part of the National Research Council proceedings, George Armstrong.

The "El Nino" storms in 1982-83 caused additional damage to the Malibu coast, when high tides of over 7 feet were combined with surf between 6 and 15 feet. These storms caused over \$12.8 million in damage to structures in Los Angeles County,. Due to the severity of the 1982-83 storm events, they have often been cited as an illustrative example of an extreme storm event and used as design criteria for shoreline protective structures. Damage to the Malibu coastline was documented in an article in California Geology. This article states that:

In general, the storms greatly affected the character of the Malibu coastline. Once quiet, wide, sandy beaches were stripped of their sand and high surf pounded residential developments .... The severe scour, between 8 to 12 feet, was greater than past scour as reported by "old timers" in the area. Sewage disposal systems which rely on the sand cover for effluent filtration were damaged or destroyed creating a health hazard along the coast. Flotsam, including pilings and timbers from damaged piers and homes, battered coastal improvements increasing the destruction. Bulkhead failures occurred when sand backfill was lost due to scour exceeding the depth of the bulkhead sheeting, or scour extending beyond the return walls (side walls of the bulkhead which are extended toward the shore from the front wall of the bulkhead).<sup>19</sup>

Other observations that were noted included the fact that the storm's damage patterns were often inconsistent. Adjacent properties suffered different degrees of damage sometimes unrelated to the method or age of construction. The degree of damage was often related to past damage history and the nature of past emergency repairs. Upcoast (west) of Corral Beach, walls at Zuma Beach and the parking lots were damaged by wave uprush and scour. Debris was deposited onto the margin of Pacific Coast Highway (*Exhibit 1*).

Storms in 1987-88 and 1991-92 did not cause the far-reaching devastation of the 1982-83 storms, however, they too were very damaging in localized areas and could have been significantly worse except that the peak storm surge coincided with a low tide rather than a high tide. The 1998 El Nino Storms have damaged a number of residences and public facilities and infrastructure in Malibu and is currently being assessed.

Presently the site is developed with a single family residence and two residential rental units that are built on pilings, a detached garage, a wood bulkhead protecting the septic system located on the sandy beach, and an access driveway. The applicant has repaired the sewage disposal system, and proposes to construct a new seal wall seaward of the existing wood bulkhead, and repair the wood bulkhead by replacing one timber pile. Experience from historic storm events in Malibu indicates that this protection is essential to the long-term viability of both the septic system and the road.

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<sup>19</sup> "Assessment of 1982-83 Winter Storms Damage Malibu Coastline", by Frank Denison and Hugh Robertson, in California Geology, September 1985.

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The applicant's submittal included a Coastal Engineering Report for the proposed seal wall prepared by David Weiss and Associates, dated August 4, 1998, and a letter update, titled Coastal Permit Application No. 4-98-050, dated September 17, 1998. The Coastal Engineering Report states that:

During the severe ocean storms of January and February 1998, the existing timber bulkhead wall was undermined by ocean wave action. The backfill behind the wall was washed out, destroying the on site sewage disposal system and eroding the toe of the slope behind the bulkhead. The more landward timber piles of the building are embedded in this slope. The timber piles that were driven into the hillside were not driven as deep as those on the beach. As a result, any undercutting of the slope reduces the embedment depth of the hillside piles.

The Coastal Engineering Report recommends and concludes that:

1. The timber bulkhead should be underpinned and sealed to the depth of two feet below the Design Beach Profile as plotted on the attached profile sheet P-1. It is recommended that the seal should be a concrete sealer wall with the bottom of the seal at 0.0' M.S.L.
2. The top of the concrete sealer should be at + 10.0' M.S.L. This will provide adequate buttressing of the existing timber sheathed wall.

If the proposed structure is constructed in accordance with the recommendations of this report, the expectation is that the bulkhead wall will not be overtopped by wave action during storms comparable to those of 1982-83, January 1988 and January through March 1998. The design criteria set forth for the design of the proposed structures are based on wave forces comparable to those encountered during the above noted storms.

During the winter season, the seal wall will extend into an area exposed to wave uprush, flooding, and erosion hazards that in the past have caused significant damage to development along the California coast, including the Malibu coastal zone and the beach area nearby the subject property. The Coastal Act recognizes that development, such as the proposed seal wall and bulkhead repair, as conditioned, may still involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property.

The Commission finds that due to the unforeseen possibility of liquefaction, storm waves, erosion, and flooding, the applicant shall assume these risks as a condition of approval. Because this risk of harm cannot be completely eliminated, the Commission is requiring the applicant to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development.

The applicant's assumption of risk, as required by Special Condition Number Three (3), when executed and recorded on the property deed, will show that the applicant is aware of and appreciates the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

Lastly, as noted above, the project involves some demolition (removal of one timber piling) and construction (replacement of the piling and a new seal wall) on a beachfront lot subject to tidal influence. The proposed development, with its excavation of terrace deposits, debris, and with beach level construction activity, may result in disturbance of the offshore kelp beds through erosion and siltation. Construction equipment, materials and demolition debris could pose a significant hazard if used or stored where subject to wave contact or situated in a manner that creates a hazard for beach users. Furthermore, this construction activity, if not properly mitigated, would add to an increase of pollution in the Santa Monica Bay.

To avoid this possibility, the Commission finds that it is necessary to require the applicant to agree and ensure that the project contractor: a) not stockpile dirt on the beach; b) that all stockpiling beyond the beach shall be properly covered and sand-bagged to prevent runoff and siltation; c) not store any construction materials or waste where it may be subject to wave erosion and dispersion; d) remove promptly from the beach any and all debris that results from construction or demolition materials to an appropriate disposal site; e) that measures to control erosion must be implemented at the end of each day's work; and, f) not allow any mechanized equipment in the intertidal zone at any time. Special Condition Number Four (4) addresses this issue. This condition will also ensure that the construction of the proposed project will minimize risks to life and property in this public beach area that is subject to wave hazards and protect coastal resources.

Therefore, the Commission finds that the proposed development, as conditioned, is consistent with section 30253 of the Coastal Act.

#### **E. Septic System**

The Commission recognizes that the potential build-out of lots in Malibu, and the resultant installation of septic systems, may contribute to adverse health effects and geologic hazards in the local area.

#### **Section 30231 of the Coastal Act states that:**

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation

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buffer areas that protect riparian habitats, minimizing alteration of natural streams.

**Section 30250 (a) of the Coastal Act states (in part):**

New residential, ... development, ... shall be located within, ... existing developed areas able to accommodate it ... and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

As described in the preceding project description section, the existing sewage disposal system was repaired, as a result of storm damage, which includes a septic tank, a leach field, and a leach field expansion area located beneath the residential structure landward of the bulkhead (*Exhibit 4*). The applicant submitted a conceptual approval for the sewage disposal system from the City of Malibu Department of Environmental Health, for this site. This approval indicates that the sewage disposal system for the project in this application complies with all minimum requirements of the Uniform Plumbing Code. The Commission has found in past permit actions that compliance with the health and safety codes will minimize any potential for waste water discharge that could adversely impact coastal waters. In addition, the proposed seal wall will protect the proposed septic system from wave run-up. As reviewed by the City, the proposed project will not adversely impact the biological productivity and quality of the coastal waters. Therefore, the Commission finds that the proposed project is consistent with Sections 30231 and 30250 of the Coastal Act.

**F. Local Coastal Program**

**Section 30604 of the Coastal Act states that:**

a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the proposed project will be in conformity with the provisions of Chapter 3 if certain conditions are incorporated into the project and accepted by the applicant. As conditioned, the proposed development will not create adverse effects and is found to be consistent with the applicable policies contained in Chapter 3. Therefore, the Commission finds that approval of the proposed development, as conditioned, will not prejudice the City's

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ability to prepare a Local Coastal Program for Malibu which is also consistent with the policies of Chapter 3 of the Coastal Act as required by Section 30604(a).

**G. CEQA**

The Coastal Commission's permit process has been designated as the functional equivalent of CEQA. Section 13096(a) of the Commission's Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effects which the activity may have on the environment.

The Commission finds that, the proposed project, as conditioned, will not have significant adverse effects on the environment, within the meaning of the California Environmental Quality Act of 1970. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified effects, is consistent with the requirements of CEQA and the policies of the Coastal Act.

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## APPENDIX A

### SUBSTANTIVE FILE DOCUMENTS

Malibu/Santa Monica Mountains District Interpretive Guidelines. Coastal Commission. 1981

Certified Malibu/Santa Monica Mountains Land Use Plan. County of Los Angeles. 12/11/86.

Adopted City of Malibu General Plan. November 1995

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Tait, J.F and G.B. Griggs. "Beach Response to the Presence of a Seawall: A Comparison of Field Observations". Shore and Beach. Vol. 58, No. 2, pp 11-28. 1990.

Thompson, "Seasonal Orientation of California Beaches". Shore and Beach (Vol. 55, Nos. 3-4). July 1987.

William's, Phillip & Associates and Peter Warshall & Associates. Malibu Wastewater Management Study. March 1992.

**Michael Tuchman**

**LETTERS and MEMOS**

Letter to Lesley Ewing from Douglas Inman, Ph.D., February 25, 1991

Letter to Lesley Ewing from Dr. Craig Everts of Moffatt and Nichols Engineers, March 14, 1994

**COASTAL PERMIT APPLICATIONS**

Staff Report Lechuza Villas West 2/4/97; Coastal Permit Number 4-94-200, Dussman; Coastal Permit Number 4-97-071, Schaeffer; Coastal Permit Number 4-97-171, Sweeney; Coastal Permit Number 4-98-158, O'Conner; Coastal Permit Number 4-97-191, Kim.



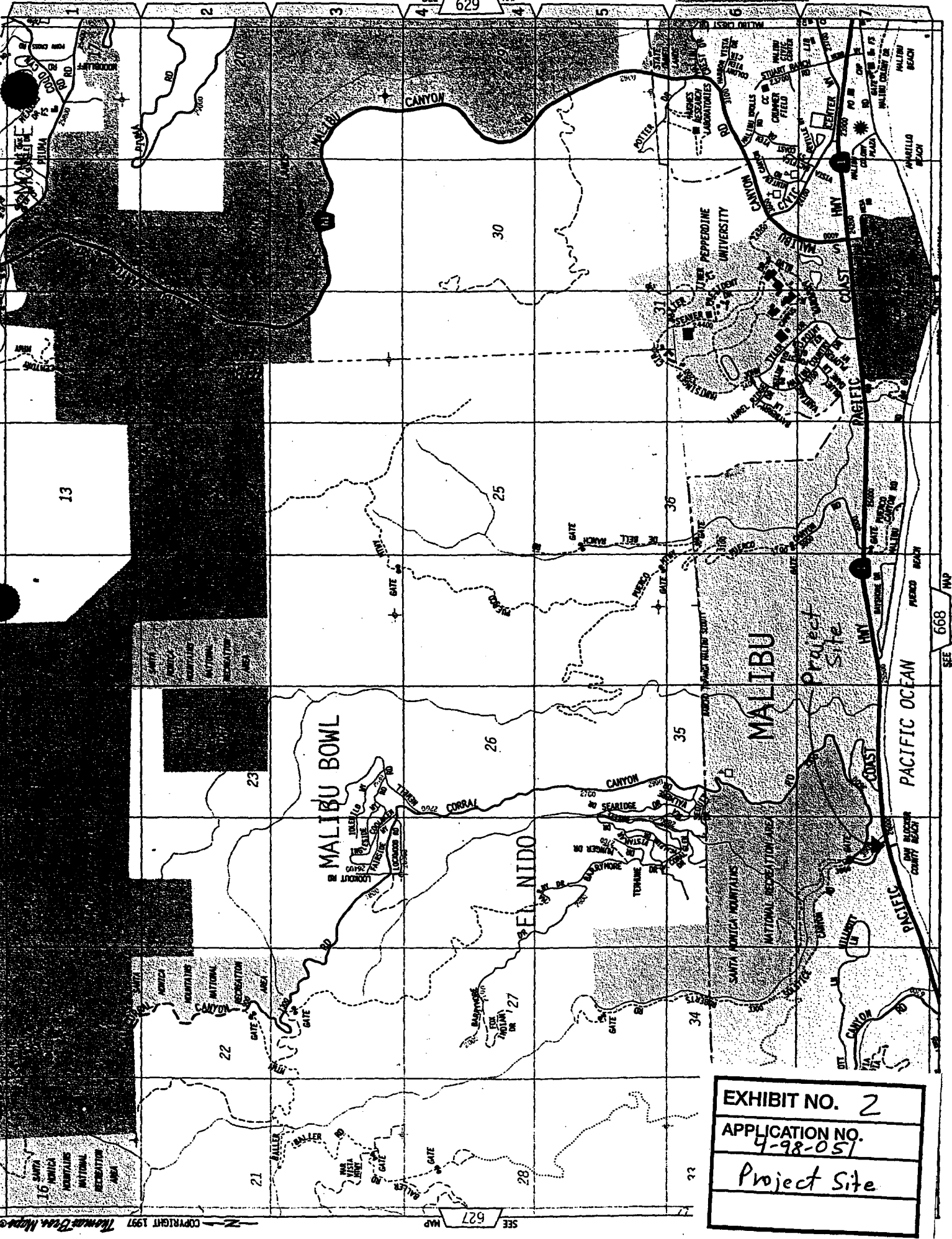


EXHIBIT NO. 2

APPLICATION NO. 4-98-051

Project Site



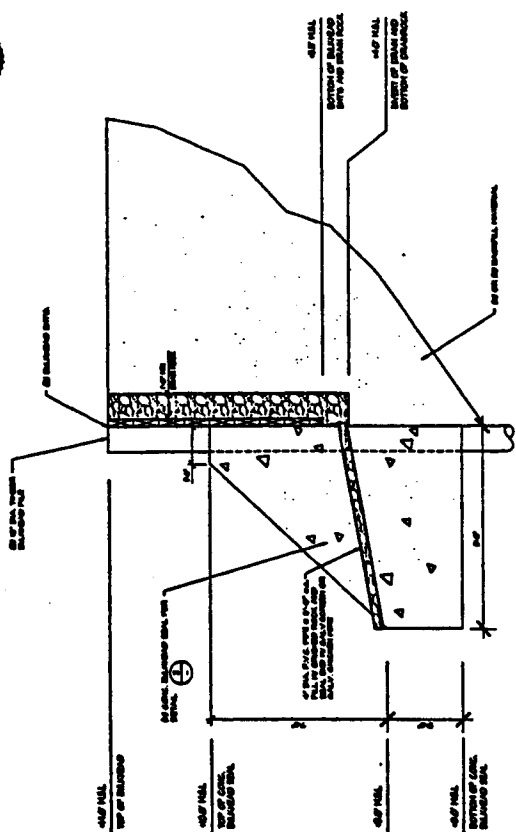
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NOTE: AIR PLAN DETAILS

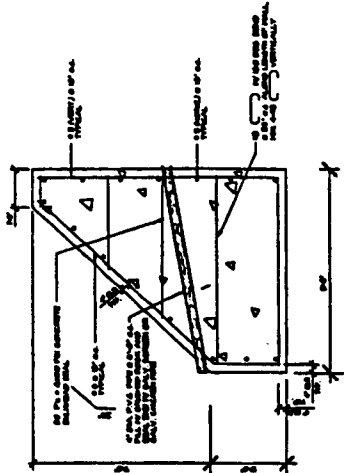
REPAIR  
PACIFIC COAST HWY.

WILLIAM J. BURNETT  
JAMES E. BURTON  
JOHN W. CANNON

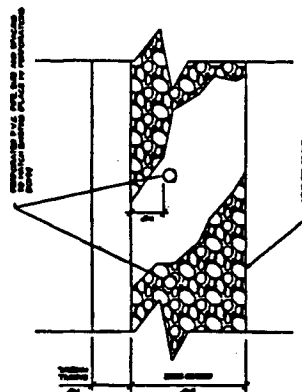
STRUCTURAL ENGINEERS & ASSOCIATES, INC.  
22440 CLAYBORN STREET, SUITE 205  
MOODLAND HILLS, CALIFORNIA 91347  
PHONE: (818) 224-9775 FAX: (818) 224-9773



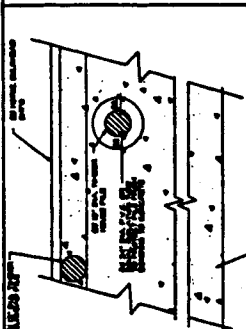
## **CONCRETE BULKHEAD SEAL**



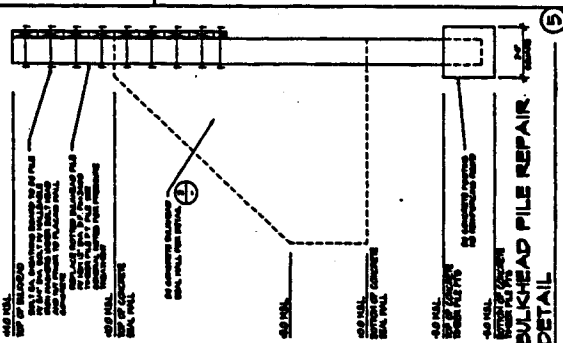
## REINFORCING FOR CONCRETE BULKHEAD SEAL



**DRAIN FIELD SECTION**



## PILE ISOLATION DETAIL



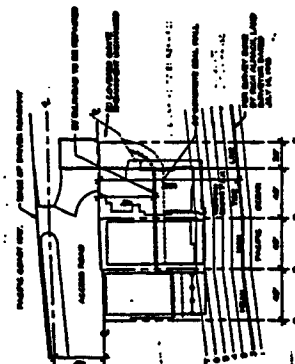
## BULKHEAD PILE REPAIR. DETAIL

**GENERAL NOTES:**

- [illegible]

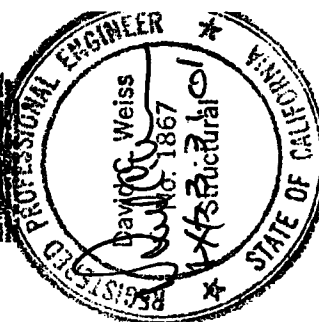
Prior to completion of the project, a permanent benchmark shall be established on the face of this pile at elevation +13.8' M.S.L. A surveyor licensed to practice in the State of California shall establish the benchmark.

**BULKHEAD REPAIR PLAN - 26044 PACIFIC COAST HWY.**



## SITE PLAN

EXHIBIT NO. 4
APPLICATION NO. 4-98-051
Project Plans



# BULKHEAD REPAIR PLAN - 26044 PACI

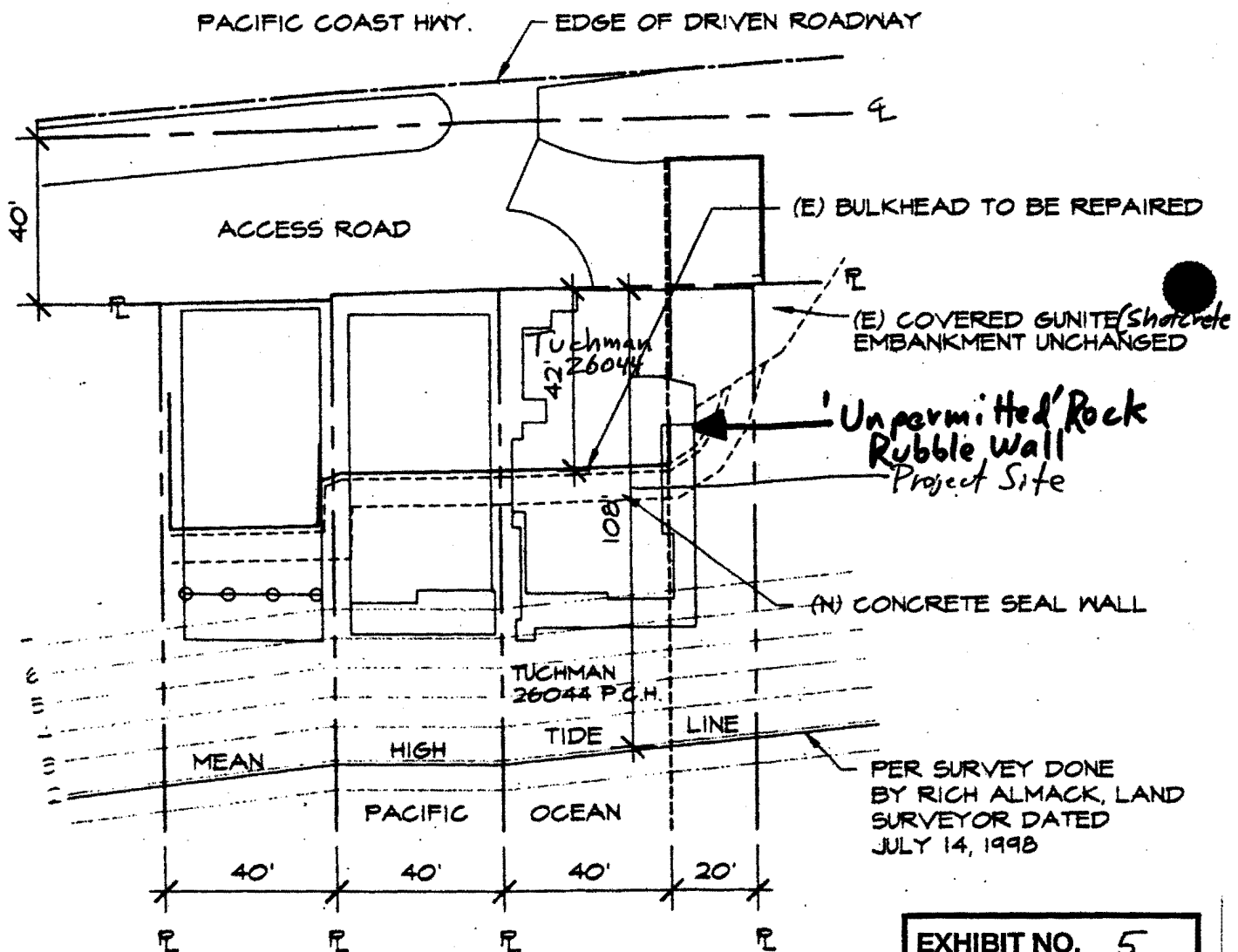


EXHIBIT NO. 5

APPLICATION NO.  
4-98-051

Site Plan

ITE PLAN

SCALE: 1" = 40'

## CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100 South  
Sacramento, CA 95825-8202

RECEIVED

SEP 11 1998

ROBERT C. HIGHT, Executive Officer  
(916) 574-1800 FAX (916) 574-1810  
California Relay Service From TDD Phone 1-800-735-2922  
from Voice Phone 1-800-735-2929Contact Phone: (916) 574-1892  
Contact FAX: (916) 574-1925  
E-Mail Address: smithj@slc.ca.gov

May 26, 1998

CALIFORNIA  
COASTAL COMMISSION  
SOUTH CENTRAL COAST DISTRICTSusan McCabe  
Brady & Berliner  
1100 Eleventh Street, Suite 305  
Sacramento CA 95814

File

EXHIBIT NO. 6
APPLICATION NO. 4-98-051
State Lands Comm
Pages 1 & 2

Dear Ms. McCabe:

SUBJECT: Coastal Development Project Review for Repairs to Existing Bulkhead at 26044, 26050 and 26054 Pacific Coast Highway, Malibu

This is in response to your request on behalf of your clients, Tuchman, Gallo and Neiter/Behar, for a determination by the California State Lands Commission (CSLC) whether it asserts a sovereign title interest in the property that the subject project will occupy and whether it asserts that the project will intrude into an area that is subject to the public easement in navigable waters.

The facts pertaining to your clients' project, as we understand them, are these:

Your clients propose to repair existing timber bulkheads which provide protection to their residences at 26044, 26050 and 26054 Pacific Coast Highway in Malibu. From the plans submitted, the project will involve repairs to the timber bulkheads as well as construction of a concrete seawall which will extend approximately eight feet seaward of the bulkhead. The bulkheads/seawalls are located well underneath the residences and landward of a portion of the existing residences supported by pilings. This is a well-developed stretch of beach with numerous residences both up and down coast.

We understand that staff of the California Coastal Commission (CCC) had issued an emergency permit authorizing this project, but the permit expired before the work was performed. Your clients are now in the process of applying for a regular coastal development permit.

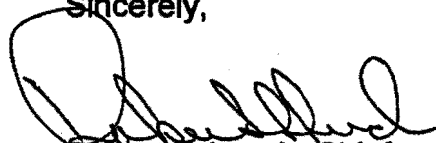
We are reviewing information regarding the location of the boundary between state and private property in this area and do not expect to conclude this review for some time. Because this project involves repairs to existing bulkhead structures which are located underneath the residences, and because we do not want to unduly delay the permit process by the California Coastal Commission (CCC), we do not object to

May 26, 1998

the CCC proceeding with the processing of the permit application. However, we reserve the right to comment to the CCC and take any other appropriate action regarding future assertion of state ownership or public rights once our study is complete.

If you have any questions, please contact Jane E. Smith, Public Land Management Specialist, at (916) 574-1892.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Lynch", written over a circular stamp or mark.

Robert L. Lynch, Chief  
Division of Land Management

cc: Art Bashmakian, City of Malibu

# BULKHEAD REPAIR PLAN - 26044 PAC

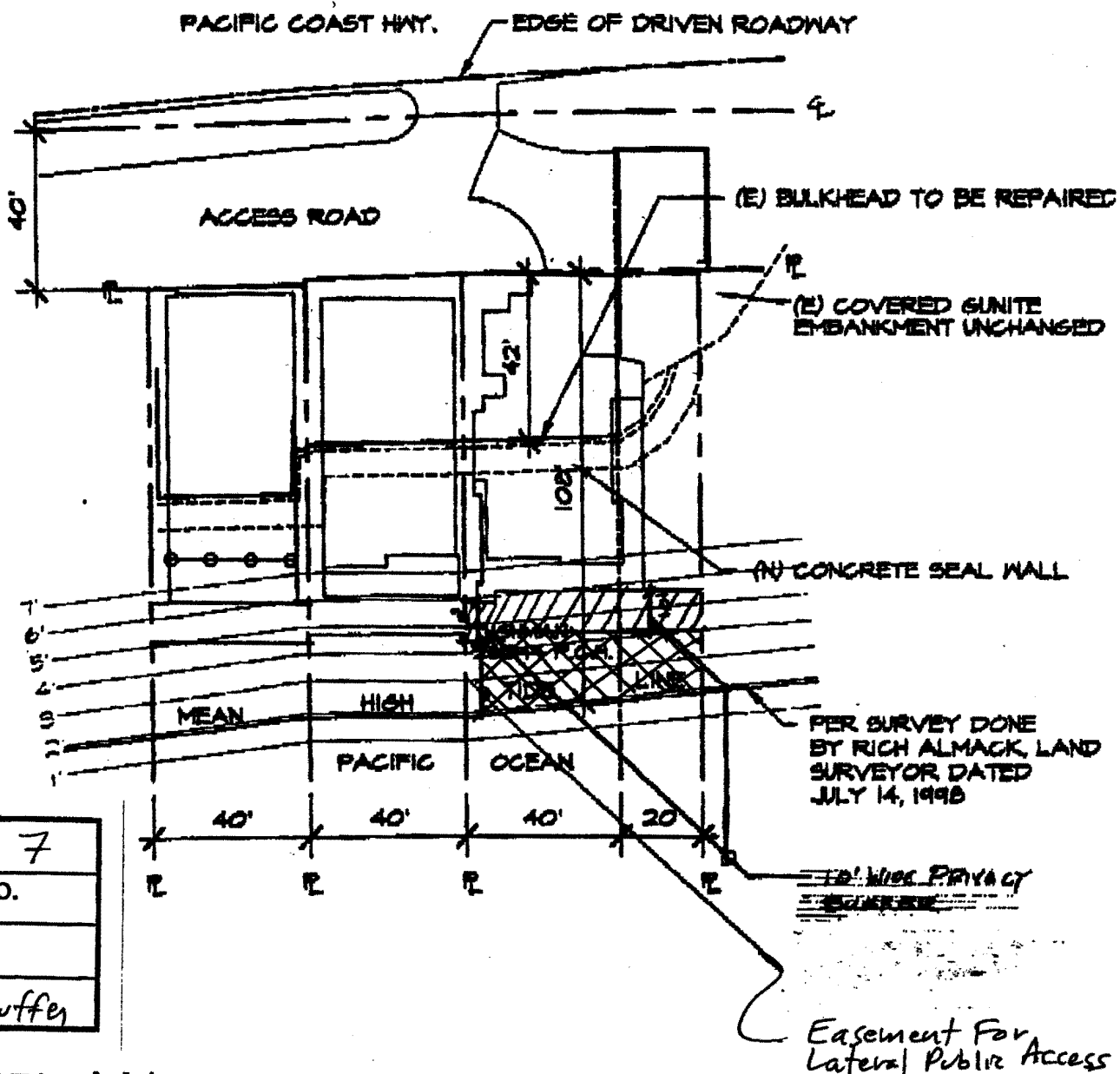


EXHIBIT NO. 7
APPLICATION NO. 4-98-051
Public Access
Easement & Buffer

SITE PLAN - TUCUMCAC - COASTAL PERMIT APPLICATION # 4-98-051 SCALE: 1" = 40'

26044 PACIFIC COAST HWY, HAUBERT

