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STATE OF CALIFORNIA -- THE RESOURCES AGENCY GRAY DAVIS, *Govern*

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STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-98-127

APPLICANTS: Hazel Mae and Benjamin Berg

PROJECT LOCATION: 24912 Malibu Road, City of Malibu, Los Angeles County

PROJECT DESCRIPTION: After-the-fact approval of a rock revetment installed during the January, 1988 storm season with rock overtopping blanket to protect an existing single family residence and septic system. The applicant is also proposing an offer to dedicate lateral public access easement.

LOCAL APPROVALS RECEIVED: City of Malibu, Planning Department, Approval-In-Concept, dated June 11, 1998.

SUBSTANTIVE FILE DOCUMENTS: Certified Malibu/Santa Monica Mountains Land Use Plan; U.S. Army Corps of Engineers, Los Angeles District, Reconnaissance Study of the Malibu Coast; California State Lands Commission letter of evaluation, dated July 15, 1998; Coastal Development Permits 4-98-085-G (Harris); 4-98-085 (Harris Family Trust), and 4-98-342 (Baumgartner); Pacific Engineering Group, Wave Uprush Study 24912 Malibu Road, July 7, 1998; Pacific Engineering Group, Addenda to Wave Uprush Study, October 6, 1999.

SUMMARY OF STAFF RECOMMENDATION

The rock revetment is proposed to protect an existing, older single family residence fronting Puerco Beach. Staff recommends **approval** with Special Conditions regarding: Assumption of Risk, Offer to Dedicate Lateral Public Access, Provisional Term for Shoreline Protective Structure, Deed Restriction on Provisional Term, Deed Restriction on Expansion and Maintenance, Sign Restriction, and Construction Activities and Debris removal. The rock protection is landward of the first row of pilings. The rock protection was found by the engineering consultant to be necessary to mitigate wave deflection caused by an existing bulk head constructed further seaward to the west and to protect the existing sewage disposal system from washout. The applicants have offered to dedicate a lateral public access easement as part of the project proposal.

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 the 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 term or 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. Assumption of Risk, Waiver of Liability, and Indemnity

A. By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards from storm waves, erosion, or flooding; (ii) to assume the risks to the applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

B. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicants' entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

2. Offer to Dedicate Lateral Public Access

In order to implement the applicants' proposal of an offer to dedicate an easement for lateral public access and passive recreational use along the shoreline as part of this project, the applicants agree 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 the dripline of the deck shown in Exhibit 4.

The document shall contain the following language:

(a) **Privacy Buffer**

The area ten (10) feet seaward from the dripline of the deck as illustrated on Exhibit 4 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 repass 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) Passive Recreational Use

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 applicants' entire parcel(s) and the easement area.

3. Provisional Term for Shoreline Protective Structure: Deed Restriction

A. Coastal Development Permit No. 4-98-127, in full or in part, authorizes the construction of the shoreline protective device generally depicted in Exhibits attached hereto. By acceptance of this permit, the applicants acknowledge that the purpose of the subject shoreline protective device is solely to protect the existing structures located on site, in their present condition, including the septic disposal system, and the aging wooden support piles, as generally depicted in Exhibits 3 and 4. If any of the activities listed below are undertaken, a new coastal permit for the shoreline protective device authorized by Coastal Development Permit 4-98-127 shall be required unless the Executive Director determines that a new permit is unnecessary because such activities are minor in nature or otherwise do not affect the need for the shoreline protective device. The applicants or successor-in-interest shall contact the Executive Director if such activities are contemplated so that a determination as to the necessity of applying for a new permit can be made.

1. Changes to the foundation of any structure on the subject site located landward of the subject shoreline protective structure authorized herein, such as repairs or replacement of support piles or caissons;

2. Upgrade, relocation or abandonment of the septic disposal system;

3. Remodel of the primary structure or residence on the subject site involving the demolition of more than 50 percent of exterior walls or an addition to the primary structure or residence resulting in an increase of more than 10 percent of structural size;

4. Construction of a new structure on the subject parcel;

5. Relocation and/or complete removal of any structures.

If an application for a new coastal development permit is required pursuant to this condition, and the Commission determines that the proposed project is not consistent with the Coastal Act, the Commission may deny the permit application or may take any other action authorized by law.

B. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall execute and record a deed restriction in a form and content acceptable to the Executive Director, reflecting the above restrictions on development of the subject parcel. The deed restriction shall include both a legal description of the applicants' entire parcel, and an Exhibit drawn to scale depicting the existing development as proposed for protection by the subject shoreline protective device, and the shoreline protective device itself. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without an amendment to this coastal development permit approved by the Coastal Commission.

4. Seawall Installation: Future Limitations

Prior to the issuance of Coastal Development Permit 4-98-127, the applicant as landowner shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which states that no future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to this permit shall be undertaken if such activity extends the seaward footprint of the subject shoreline protective device and by acceptance of this permit the applicant hereby waives any rights to extend the seaward footprint of the shoreline protective device that may exist under Public Resources Code Section 30235. The deed restriction shall include a legal description of the applicant's entire parcel and

the following exhibits, including both full-sized and 8-1/2 by 11-inch reductions, prepared to the satisfaction of the Executive Director: (a) a site plan mapping to scale the applicant's parcel in accordance with the legal description, including the development approved pursuant to this permit and (b) a cross section view of item (a). Both Exhibits shall identify and map the exact distance between the seawardmost component of the shoreline protective device and a fixed, baseline monument or landmark landward of the subject device found acceptable by the Executive Director. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that 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 this coastal development permit.

5. 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 (APN) 4458-013-022 located seaward of the revetment approved by Coastal Development Permit 4-98-127 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.*" 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.

6. Construction Responsibilities and Debris Removal

No stockpiling of construction materials or storage of equipment shall occur on the beach and no machinery will be allowed in the intertidal zone at any time. The permittee shall immediately remove from the beach area any and all debris that results from the construction activities.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background

The project involves both reconstruction and additions to an existing rip rap seawall. Previously installed rip rap, without benefit of a coastal development permit, has now shifted to approximate beach level and does not protect the existing residence and septic system. Although the project was constructed during January, 1988 storms, the applicants failed to apply for a coastal development permit for the subject revetment at

that time. They therefore seek to remedy the permitting deficiency, and retain and augment the subject revetment, by means of the pending application.

The applicants seek after-the-fact approval for the construction of an approximately 50 ft. long, 15 ft. high (measured from the base) rock revetment, backed by a new overtopping rock blanket. The rock revetment will consist of two layers of cap stone of two to seven tons each added over existing rocks of four tons each, between the most seaward and middle row of piles. An existing timber bulkhead immediately seaward of the middle line of piles will be retained. Vertically and immediately behind, there will be added a one foot thick layer of filter rock (3/4 to 6 in. stones), behind which will be added the horizontal overtopping blanket consisting of a "man size" twelve inch thick layer overlaying a twelve inch thick filter layer rock (3/4 to 6 in. stones) over sand fill extending between the middle and most landward row of pilings (Exhibit 3). The geotechnical report notes the revetment was placed pursuant to standards of the Los Angeles County Engineering Department following the U.S. Army Corps of Engineers Shore Protection Manual.

The subject site is a beachfront lot containing a single family residence at 24912 Malibu Road, in the City of Malibu, Los Angeles County. The proposed revetment is located on Puerco Beach, a moderately eroding beach. This section of the Malibu coastline is characterized by a narrow, sandy, rock and cobble beach. Vertical public access is available at 24500 Malibu Road, a few lots east of the proposed project. The applicants have offered, as part of the pending proposal, to dedicate a lateral easement for public access. Similar offers to dedicate lateral public access easements have been made by a number of other property owners in the surrounding area.

The subject 6,060 sq. ft. lot is steeply sloping (100 % i.e. 45 degree slope) from Malibu Road to the beach seaward of the existing timber wall. The parcel is flanked on both sides by parcels with similar rock revetments that interlock with the applicants' revetment forming a continuum along the beach extending several parcels in each direction.

The applicants' engineer notes in the July 7, 1998 report that the rock protection was necessary to protect the existing sewage disposal system from washout. The location proposed is immediately seaward of a utility room below the main residence at approximately the fifteen foot elevation. Because of staff concern that an alternative vertical seawall could be located further landward, an analysis was prepared by a consulting engineer (Pacific Engineering Group, Addenda to Wave Uprush Study, October 6, 1999). The consultant concluded that a location further landward was not possible because: (1) such construction would destabilize the embankment; (2) settlement of the timber pile foundation would result in damage to the residence; (3) a much larger and higher bulkhead would result; (4) relaocation or reconstruction of the septic system would not be possible; (5) return walls would be required which would undermine the subject and adjacent residences. Thus, the footprint of the subject rock revetment is placed as far landward as is feasible in keeping with the need to protect

the residence, utility room below the residence, and existing septic system from wave attack.

Past experience has shown that the pile system supporting the residence may be of a design where the piles were driven into the sand to the point of resistance, but not inserted into underlying bedrock. The pile system may be nearing the end of their useful life, and a future remodel or upgrade of the support structures and foundation may be undertaken in the relatively near future. At such time, the Commission may consider the potential to relocate the septic system and to install upgraded support structures capable of withstanding wave attack, thereby obviating the need for the continued presence of the rock revetment herein under consideration. Such potential remodeling of the aging residence and/or the support structures may, therefore, present an opportunity to reconsider the location and/or need for the continued existence of the as-built revetment. For these reasons, and as discussed in more detail below, the Commission in authorizing the present project proposal specifically addresses the possible removal or relocation landward of the subject shoreline protective structure in the future (see Special Condition 3 above and associated findings that follow below).

B. Shoreline Protective Devices

The applicants seek after-the-fact approval for the construction of an approximately 50 ft. long, 15 ft. high (measured from the base) rock revetment, backed by a new overtopping rock blanket. The toe of the as-built revetment is located approximately 58 feet seaward of Malibu Road. The as-built revetment is located beneath the residence and landward of the first, seaward tier of pilings. The seawall does extend seaward of the residence on the upcoast end to the extent that the return wall connects to a seawall that is further seaward.

The discussion of the impacts of the shoreline protective device will proceed in the following manner. The discussion will identify the applicable Coastal Act sections upon which the Commission relies as the standard of review of the proposed project, and the certified Malibu/Santa Monica Mountains Land Use Plan (LUP) policies upon which the Commission has relied as guidance in past permit decisions. First, the staff report describes the physical characteristics of the Puerco Beach shoreline; second the report analyzes the dynamics of the Puerco Beach shoreline; and third, the report analyzes the location of the proposed shoreline protective device in relation to wave action. Finally, the report evaluates whether the proposed shoreline protective device is warranted, weighing the available evidence in light of the Coastal Act requirements and the past guidance of the LUP policies, and whether the proposed revetment will adversely impact the shoreline sand supply and shoreline processes.

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 of the Coastal Act states:

(a) 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. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

Section 30253 of the Coastal Act states:

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.

Malibu/Santa Monica Mountains Land Use Plan (LUP)

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 consistent with the Coastal Act and provides specific standards for development along the Malibu coast. For example, policies 166 and 167 provide, in concert 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, and when such structures are designed and engineered to eliminate or mitigate the resultant adverse impacts on the shoreline sand supply. In addition, Policy 153 indicates that development of sites that are exposed to potentially heavy tidal and wave action shall

require that development be set back a minimum of ten (10) feet landward from the mean high tide line.

1. Proposed Project and Site Shoreline Characteristics

The City of Malibu includes a narrow strip of coast that is some 27 miles long, backed inland of Pacific Coast Highway and frontage streets by the Santa Monica Mountains. The applicants' proposed project is located on Puerco Beach, a narrow sandy beach backed by bluffs inland of Malibu Road. The Puerco Beach area is heavily developed, and the parcels near the applicants' are small and generally built out with both single and multiple family residences. The applicants' residence was built prior to the Coastal Act.

Puerco Beach is an Eroding Beach

Having defined Puerco Beach as a narrow, heavily developed beach, the next step is to consider the overall trend of sand supply on the beach. Evaluating whether or not a pattern of beach erosion exists is the key factor in determining the impact of the proposed seawall on the shoreline. Generally, beaches fit into one of three profile categories: 1) eroding; 2) equilibrium, or 3) accreting.

Puerco Beach has been identified as an eroding beach. The U.S. Army Corps of Engineers, Los Angeles District, identifies Puerco Beach as trending from stable to slowly eroding (Reconnaissance Study of the Malibu Coast, 1994). An earlier study, titled Shoreline Constraints Study, by Moffatt and Nichols (June 30, 1992) determined that Puerco Beach is retreating at a rate of one-fourth to three-fourths of a foot per year, and provides confirmation of the Army Corp analysis that the beach shows evidence of a long term erosional trend.

The applicants have submitted a Pacific Engineering Group, Wave Uprush Study 24912 Malibu Road, July 7, 1998. The study and analysis conclude that the revetment is necessary to mitigate wave deflection caused by an existing bulk head constructed further seaward to the west and to protect the existing septic system. Therefore, based on the preponderance of evidence of this study, considered in conjunction with site-specific evidence of beach erosion, the Commission concludes that the site proposed for placement of a seawall is located on an eroding beach.

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

The Commission notes that loss of beach is widely understood to occur when shoreline protective devices are placed on equilibrium or eroding beaches. To determine what the impacts of the proposed revetment on the shoreline are likely to be, the location of the proposed protective device in relationship to the expected wave runup as calculated by the Mean High Tide Line (MHTL) must be analyzed.

a. Mean High Tide Line

The applicants state that the project is 37.5 ft. seaward of a 1969 mean high tide line. However, the project plans and the staff site visit indicate that high tide line at the time of the site visit had recently reached the base of the existing wood revetment. This definition is dependent on fluctuating sand supply, which varies, based on a comparison of photos in the project file. Further, the applicants have submitted a letter from the State Lands Commission (SLC) dated July 15, 1998 indicating that although the SLC does not, at this time, assert a claim that the project would encroach onto public lands. The Commission notes that the applicants, as part of the project description, have offered to dedicate a lateral public access easement, thereby obviating the need to undertake an exhaustive analysis of the potential public access impacts of the subject rock revetment to determine whether such a condition should be imposed as a condition of project approval.

b. Wave Uprush

The Pacific Engineering Group, Wave Uprush Study 24912 Malibu Road, July 7, 1998 indicates that the maximum wave uprush at the subject site extends all the way to Malibu Road, landward of the existing residence. This data indicates that inundation of the beach fronting the as-built revetment will occur during high tide and low beach profile conditions in the winter.

It is important to accurately calculate the potential of wave runup and wave energy to which the seawall will be subject. Dr. Douglas Inman, a widely recognized authority on Southern California shoreline processes, states that[1]:

> **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 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.**

In past permit actions, the Commission has found that one of the most critical factors controlling the impact of a shoreline protective device on the beach is its position on the beach profile relative to the surf zone. All other things being equal, the further seaward the device is, the more often and more vigorously waves interact with it. The best place for a revetment or seawall, if one is necessary, is at the back of the beach where it provides protection against the largest of storms. By contrast, a shoreline protective

[1] Letter from Dr. Inman to Coastal Commission staff civil engineer Lesley Ewing dated February 25, 1991.

device situated too close to the MHTL is likely to cause constant interference with normal shoreline processes, resulting in frontal and end scour of the beach adjacent to and seaward of the wall, in addition to upcoast sand impoundment.

Based on the above discussion, the Commission finds that the proposed, as-built revetment, at its proposed location, has the potential to encroach into an area of the beach that is currently subject to wave action during storm and high tide events. As previously discussed, the Commission finds that Puerco Beach is a narrow, eroding beach and that the proposed revetment will, at times, be subject to wave action during storm and/or high tide events. Therefore, the following section evaluates the impacts of the proposed revetment on the beach based on the above information, which identified the specific structural design, the location of the structure, and the shoreline geomorphology.

c. Effects of the Shoreline Protective Device on the Beach

The proposed reconstructed and augmented rock revetment will be located on the sandy beach at the approximate inward extent of the first (seaward) row of wood piles supporting the residence. This placement is approximately the minimum five foot distance, as measured from the landwardmost placement of the revetment footprint, necessary to protect the existing septic disposal system without compromising the clearance standards from septic systems imposed by the City's Environmental Health Department. Thus, the as-built footprint of the revetment is placed, in the opinion of the structural engineer, as far landward as is feasible consistent with the need to ensure the structural stability of the residence.

Although the precise impact of a structure on the beach is a persistent subject of debate within the discipline of coastal engineering, and 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. Adverse impacts upon the shoreline may accrue as the result of beach scour, end scour (undermining of the beach areas at the ends of the seawall), the retention of potential beach material behind the wall, the fixing of the back beach and the interruption of alongshore processes. To evaluate these potential impacts relative to the proposed structure and its location at Puerco Beach, each of the identified effects will be evaluated below.

(1) 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 seawalls and revetments is a frequently observed occurrence. When waves impact a hard surface such as a coastal bluff, rock revetment, or vertical bulkhead, some of the energy from the wave is absorbed, but much of the energy is 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 such shoreline protective devices do affect the supply of beach sand. The wave uprush study prepared by the applicants' coastal engineer notes that the maximum wave uprush applicable to the subject site, absent a seawall or other shoreline protective device, goes to Malibu Road.

The Commission notes that the proposed rebuilt and augmented revetment is located seaward of the maximum wave uprush and will therefore be periodically acted upon by wave action. In past permit actions, the Commission has found that shoreline protective devices subject to wave action tend to exacerbate or increase beach erosion. The following quotation summarizes a generally accepted opinion within the discipline of coastal engineering that:

> **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.[2]**

The above 1981 statement signed by 94 coastal geologists indicates that sandy beach areas available for public use can be harmed through the introduction of shoreline protective devices. 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 and to protect the public's access along the ocean and to the water, as discussed in more detail in the subsequent section concerning public coastal access.

The impact of shoreline protective devices 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.[3]**

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

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

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.[4]**

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.[5]**

Dr. Everts further concludes that armoring in the form of a seawall or revetment 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.[6]**

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.

As set forth in earlier discussion, Puerco Beach is a narrow receding beach. The applicants' coastal engineering consultant has indicated that the revetment will be acted upon by waves during storm conditions. If a seasonal eroded beach condition occurs

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[4] Coastal Sediments '87.
[5] Letter Report dated March 14, 1994 to Coastal Commission staff civil engineer Lesley Ewing from Dr. Craig Everts, Moffatt and Nichol Engineers.
[6] ibid.

with greater frequency due to the placement of a revetment on the subject site, then the subject beach would also, at a minimum, accrete at a slower rate. The Commission notes that many studies performed on both eroding and oscillating beaches have concluded that loss of beach occurs on both types of beaches where a shoreline protective device exists. Therefore, the Commission notes that the proposed revetment, over time, will result in potential adverse impacts to the beach sand supply resulting in increased seasonal erosion of the beach and longer recovery periods.

The impacts of potential beach scour are important relative to beach use for two reasons. The first reason involves public access. The subject property is located approximately 1000 feet west of a vertical public access available at 24714 Malibu Road. If the beach scours at the base of the revetment, even minimal scouring in front of the 50 ft. long revetment will translate into a loss of beach sand available (i.e., erosion) at an accelerated rate than would otherwise occur under a normal winter season if the beach were unaltered. The second impact relates to the potentially turbulent ocean conditions. Scour at the face of a revetment will result in greater interaction with the revetment and thus, make the ocean along Puerco Beach more turbulent than it would be along an unarmored beach area.

Thus, the Commission has ordinarily required that shoreline protection devices be located as far landward as possible to reduce adverse impacts from scour and erosion. The applicants have provided evidence that the proposed revetment cannot be relocated further landward and the proposed location is the only feasible alignment, as noted previously. Pacific Engineering Group concluded that a location further landward was not possible because: (1) such construction would destabilize the embankment; (2) settlement of the timber pile foundation would result in damage to the residence; (3) a much larger and higher bulkhead would result; (4) relaocation or reconstruction of the septic system would not be possible; (5) return walls would be required which would undermine the subject and adjacent residences. Thus, the proposed rock revetment is in the preferred location as far landward as is feasible to protect the residence, utility room below the residence, and existing septic system from wave attack.

The geotechnical report evaluated a new vertical timber bulkhead as a project alternative. Construction was found to only be feasible seaward of the existing bulkhead and adversely affect lateral access. An upgrade at the existing bulkhead location in lieu of the proposal would extend the partial existing bulkhead across the full width of the parcel. Such an alternative would not be compatible with existing composite rip rap and timber revetment upcoast (west) of the project and would increase the potential scour, threatening the pile system, and cause reflection of wave splash against the underside of the residence.

In past permit actions, the Commission has also required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. To ensure that any potential adverse effects of the proposed revetment are mitigated to the maximum extent feasible, the applicants have

proposed to offer a dedication for a lateral public access easement along the beach. Special Condition 2 has been included to implement the applicants' proposal of an offer to dedicate a new lateral public access easement. Therefore, as conditioned, the project will minimize the adverse impacts resulting from construction of the reconstructed revetment and is consistent with the applicable Coastal Act sections and with past Commission action. Public access is discussed in more detail below.

(2) End Effects

End scour effects involve the changes to the beach profile adjacent to the shoreline protection device at either end. One of the more common end effects comes from the way reflection of waves off of the shoreline protection device 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 a revetment, the many angles and small surfaces of the revetment material reflect wave energy in a number of directions, effectively absorbing much of the incoming wave rather than reflecting it. Because of the way revetments modify incoming wave energy, there is often less problem with end effects or overtopping than that which occurs with a vertical bulkhead. In the case of a vertical bulkhead, return walls are typically constructed in concert with the seawall, and, thus, wave energy is also directed to the return walls causing end erosion effects.

In addition, the Commission notes that the literature on coastal engineering repeatedly warns that unprotected properties adjacent to any shoreline protective device may experience increased erosion. Field observations have validated this concern. Although it is difficult to quantify the exact loss of material due to end effects, Gerald G. Kuhn of the Scripps Institute of Oceanography concludes in a paper entitled, "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California," (1981) 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 have the same effects on narrow beaches or beaches eroded by storm activity as Dr. Kuhn observed in relation to rock seawalls. Dr Kraus' 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.[7] Dr. Kraus' concluded that seawalls were a likely cause of retained 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**

[7] "Effects of Seawalls on the Beach", published in the Journal of Coastal Research, Special Issue #4, 1988.

> **behind the wall which would otherwise be released to the littoral system. The second mechanism, which would 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 method is flanking, i.e., increased local erosion at the ends of walls.** (underline added for emphasis)

In addition, the results of other researchers investigating the length of shoreline affected by heightened erosion adjacent to seawalls concluded 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.** [8]

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.[9] 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 directly attributable to seawall construction.

The Commission notes that end effect erosion may be further minimized by locating a proposed shoreline protection device as landward as possible to reduce the frequency that the seawall is subject to wave action. In the case of the proposed project, and as noted previously, the proposed revetment will be located as landward as feasible to protect the existing support structures under the residence. The applicants have through consideration of alternatives demonstrated that no feasible alternative to the present location of the pilings exists at this time and therefore the revetment cannot be located further landward than the location shown on Exhibit 3.

The proposed revetment may have increased erosion on adjacent properties, but these properties also have revetments. Thus, any additional impacts to adjacent properties have already been realized and mitigated.

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[8] "Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties" by W.G. McDougal, MA Sturtevant, and P.D. Komar in Coastal Sediments '87.

[9] "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.

(3) Retention of Potential Beach Material

A shoreline protective device's retention of potential beach material impacts shoreline processes simply by depriving beaches of nutrients that would normally be fed into the littoral cell and deposited on beaches through the actions of normal shoreline processes. A revetment prevents upland sediments from being carried to the beach by wave action and bluff retreat. In the case of Puerco Beach, which is located in the Santa Monica Littoral Cell, the back of the beach is fixed at Pacific Coast Highway. One of the main sources of sediment for beaches are the bluffs themselves, as well as the material that has eroded from inland sources and is carried to the beach by coastal streams. The 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 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...**[10]

As explained, the revetment protects the applicants' property from continued loss of sediment. However, the result of this protection, particularly on a narrow beach, is a loss of sediment on the sandy beach area that fronts the 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 revetment will have greater exposure to wave attack.

In past permit actions, the Commission has required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. In the case of this project, to mitigate any possible adverse effects upon public access along the beach, the applicants propose to dedicate a new public lateral access easement along the beach. Special Condition 2, as previously discussed, has been included to implement the applicants' offer to dedicate a new lateral public access easement. 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.

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[10] "Responding to Changes in Sea Level: Engineering Implications," National Academy of Sciences, National Academy Press, Washington, D.C., 1987 (at page 74).

d. Past Commission Actions on Residential Shoreline Development

Many portions of the Malibu coastline, including Puerco Beach, are intensely developed with single family residences. Such development, and the shoreline protective devices installed to protect the residences prevent or greatly impair access to the coast, obstruct public views to and of the beach and water from Pacific Coast Highway and other scenic viewing areas, interrupt shoreline processes and impact the fragile biological resources in these areas.

Given Malibu's close proximity to the Los Angeles metropolitan area it is understandable why the Malibu coastline has experienced such intensive development of its coastline over the past 50 years. The vast majority of this development took place prior to the passage of Proposition 20 which established the Coastal Commission in 1972 and the 1976 Coastal Act. As previously stated, section 30235 of the Coastal Act allows for the construction of shoreline protective devices only if they protect a coastal dependent use or to protect existing structures of public beaches in danger from erosion. The construction of protective devices to protect new residential development is generally not allowed under this Coastal Act section. The majority of the residential development described above required some type of shoreline protective device to be developed. Therefore, it is safe to assume under this policy and the other resource protection policies of the Coastal Act that this type of development along Malibu's coastline would either not have been approved or would be developed in a much different configuration or design than it is today.

The Commission has previously permitted a number of new residential developments with protective devices on the Malibu coast, but only when the development was considered "infill" development. In distinction, the proposal is to protect an existing residence rather than infill. In the case of the proposed revetment, the rocks are placed in such a way as to form a continuum with the adjacent properties on either side of the subject parcel, in an area that is built out. Thus the revetment is considered to be a shoreline protective device protecting existing development and the placement is consistent with the adjacent revetments.

The existing residence was, as noted, constructed prior to the Coastal Act and current building codes, which means that the development may be considered inadequate by today's building standards. The timber caissons may be nearing the end of their serviceable life and could be subject to repair or replacement in the near future. In addition, termite damage is common in timber of this vintage in the Malibu area. Therefore, significant renovation of the foundation of the existing structure may become necessary. In addition, there is substantial interest at present in replacing beachfront septic systems with more modern sewage disposal methods, thus potentially offering the applicants the opportunity, and potentially the obligation, to retire the existing septic disposal system in the near future. Changes to the septic system, combined with improvements to the aging structural members of the existing foundation and support

system, may obviate the need for the placement of a revetment at the proposed location in the future.

Special Condition 3 acknowledges that such circumstances may arise in the future, and that mitigation of adverse effects of the presently proposed shoreline protective device may then be achieved by removing or relocating the subject revetment. Moreover, under such circumstances, the adverse effects of the shoreline protective device on shoreline processes and sand supply as discussed previously, would no longer be justified in light of new alternatives for removing or relocating the structure that may be posed by the changed circumstances.

Therefore, the Commission finds that the imposition of Special Condition 3 is necessary to ensure that the authorization of the construction of such structure under Coastal Development Permit 4-98-127 terminates should changes to the existing structures it is designed to protect become necessary or possible in the future. Under such circumstances, the landowner/permittee at the time must either (1) abandon and remove the revetment in concert with the other changes proposed on site, or (2) apply for, and obtain, a new Commission approval of the subject shoreline protective device.

In addition, to ensure that no future changes or improvements to the subject bulkhead result in seaward expansion of the bulkhead, the Commission finds it necessary to impose Special Condition 4, which requires the applicant to record a deed restriction acknowledging that no future seaward expansion of the subject bulkhead will be authorized. If implemented, Special Condition 4 ensures that the adverse impacts of the subject shoreline protective device are not compounded in the future by a seaward expansion of the bulkhead, that increases the bulkhead's adverse effects on the shoreline achieved. by ensuring that any such improvements are constructed as far landward as possible.

e. Conclusion

Coastal Act sections 30235, 30253 and 30250(a) set forth the Commission's mandate relative to permitting shoreline protective devices and beachfront development. In order for the Commission to permit the proposed project, which includes a 50 ft. long, approximately 14 ft. high above maximum scour level, rock revetment, it must find the project consistent with the Chapter 3 policies of the Coastal Act.

Coastal Act section 30235, cited above, 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 applicants are proposing lateral public access and Special Condition 3 ensures that should the revetment prove no longer necessary in the future, the present approval for the revetment would terminate and

the structure would either be removed or relocated, based on the Commission's consideration at that time.

Coastal Act section 30253, (also cited above) mandates that new development neither create nor contribute significantly to erosion, or contribute to 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 or cliffs. In past permit actions, the Commission has required that new shoreline protection devices be located as landward as possible to reduce adverse impacts to sand supply and public access resulting from the development. In the case of this project, the applicants have demonstrated that the proposed as-built revetment ties to adjacent, existing revetments, that the proposed revetment is located as far landward as possible under the present circumstances, and that the structure is necessary to protect the existing apartments from wave attack. Further, in past permit actions, the Commission has also required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. In the case of this project, to mitigate any possible adverse impacts to public access along the beach that may be caused by the subject proposal, the applicants have offered to dedicate a new public lateral access easement along the beach. Special Condition 2 has been included to implement the applicants' offer to dedicate a new lateral public access easement.

The Commission has found in past permit actions in Malibu that, debris and stockpiling of construction materials or storage of equipment and harm the intertical zone and interfere with public access. Consequently, Special Condition 5 is necessary so that the permittee remove such materials.

Section 30250(a) of the Coastal Act states, in part, that new development not adversely affect, either individually or cumulatively, coastal resources. The project minimizes adverse impacts resulting from the construction of the proposed revetment by ensuring that the structure is located as landward as possible and by including an offer to dedicate lateral public access in the project description. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30235, 30250, and 30253 of the Coastal Act.

B. Hazards and Geologic Stability

Coastal Act Section 30253 states in part:

Section 30253

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 contains several policies and standards regarding hazards and geologic stability. For example, Policy 147 suggests that development be evaluated for impacts on and from geologic hazards. Policy 153 suggests that no development should be sited less than 10 ft. landward of the mean high tide line. 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.

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. The proposed project site is subject to flooding and/or wave damage from storm waves and storm surge conditions. Past occurrences have resulted in public costs (through low-interest loans for home repairs and/or rebuilding after disasters) in the millions of dollars in the Malibu area alone.

Along the Malibu coast, significant damage has also 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. The "El Nino" storms in 1982-83 caused additional damage to the Malibu coast, when high tides over 7 feet combined with surf between 6 and 15 feet. These storms caused over $12 million in damage. The El Nino storms of 1987-88, 1991-92, and 1997-1998 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 applicants propose to construct a 50 ft. long, approximately 15 ft. high (1 ft. above summer sand elevation) rock revetment. The proposed revetment will be subject to wave attack, 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 new development, such as the construction of the proposed, as-built revetment to protect an existing residence on a beach, may 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.

Therefore, the Commission finds that due to the unforeseen possibility of wave attack, erosion, and flooding, the applicants shall assume these risks as a condition of approval. Because this risk of harm cannot be completely eliminated, Special Condition 1 requires the applicants 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 applicants' assumption of risk, when executed and recorded on the property deed, will also show that the applicants are aware of and appreciate the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

In addition, Section 30253 of the Coastal Act requires that new development minimize risk to life and property in areas of high geologic, flood and fire hazard, and assure stability and structural integrity. Beachfront development raises issues relative to a site's geologic stability. As noted previously, the Malibu shoreline has experienced coastal damage regularly from geologic instability induced by winter rains and heavy surf conditions.

The applicants have submitted a Pacific Engineering Group, Wave Uprush Study 24912 Malibu Road, July 7, 1998, which states that the proposed project will have a height equivalent to the highest breaking wave at that location (14.5 ft.), has an expected usable life of thirty years, and will be able to withstand storms similar to 1983 and 1998 i.e. that the proposal will be stable and adequate to protect the subject site from wave attack. The consultant finds that the improvements to the revetment are necessary. The report does not address the stability of the residence itself as it is pre-existing and not the subject of this coastal development permit application.

As set forth in Section 30253 of the Coastal Act, new development shall assure structural integrity and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. The Commission finds, in keeping with the conclusions of the consulting structural engineer, that the proposed, as-built revetment is consistent with Section 30253 as constructed.

In conclusion, the Commission finds that the proposed project is designed to minimize risks to life and property and assure stability and structural integrity. Therefore, the Commission finds for the reasons set forth above that as conditioned, the proposed development is consistent with section 30253 of the Coastal Act.

C. Public Access.

The Coastal Act mandates the provision of maximum public access and recreational opportunities along the coast. The Coastal Act contains several policies which address the issues of public access and recreation along the coast.

Coastal Act Section 30210 states that:

> 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.

Coastal Act Section 30211 states that:

> 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.

Coastal Act Section 30212(a) provides that in new shoreline development projects, access to the shoreline and along the coast shall be provided except in specified circumstances, where:

(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources.

(2) adequate access exists nearby, or,

(3) agriculture would be adversely affected. Dedicated access shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

Coastal Act Section 30220 states:

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

Finally, Section 30251 of the Coastal Act states:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal

areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

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 adequate public access to the sea be provided to allow use of dry sand and rocky coastal beaches.

The major access issue in this permit application if the occupation of sandy beach area by a structure and potential effects on shoreline sand supply and public access in contradiction of Coastal Act policies 30211 and 30221. As proposed the revetment as built is placed on the sandy beach beneath the overhanging deck as shown on Exhibit 3. As stated previously, the proposed project is located on Puerco Beach, approximately 1000 feet west of the nearest public vertical coastal accessway. 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 a shoreline protective device 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 reduced beach 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 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 revetments 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 eventually affect the profile of a public beach. Fourth, if not sited landward in a location that insures that the revetment 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' energy. Finally, revetments and bulkheads

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 proposes 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.

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 relation to the ordinary high water mark. 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 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.[11]

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[11] The legal location of the tidelands boundary was the subject of litigation involving the Coastal Commission, the State Lands Commission and an owner of private uplands. (See *Lechuza*

The Commission must consider a project's direct and indirect impact on public tidelands. 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.

To avoid approving development that will encroach on public tidelands during any time of the year, the Commission will usually rely on information supplied by the State Lands Commission. In this case, the State Lands Commission presently does not assert a claim that the project intrudes onto sovereign lands (SLC letter dated July 15, 1998). The Coastal Commission itself currently has no independent evidence that the mean high tide line has ever moved into the project area.

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. The applicants seek Commission approval of an as-built revetment placed in 1978-79. As discussed elsewhere in the Commission's findings (see Section IVB Shoreline Protective Devices), there is substantial evidence that this project will result in some indirect impacts on tidelands because the new proposed revetment is located in an area that is subject to wave attack and the effects of wave energy.

The Commission must also consider whether a project affects any public right to use shorelands that exit 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: (1) the public's recreational rights in navigable waters guaranteed to the public under the California Constitution and state common law, (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 or offers to dedicate.

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. Although the Commission notes that the subject revetment is located as landward as

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Villas West v. *California Coastal Commission*, __Cal. App. 4th__, 97 Daily Journal D. A. R. 15277 (Dec. 19, 1997).

possible in relation to the septic system and utility room, there is still evidence that the revetment will be subject to wave uprush which may result in some potential 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.

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 indicate that attendance of recreational sites will continue to increase significantly over the coming years. The public has a right to use the shoreline under the public trust doctrine, the California Constitution and California 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. In the case of the proposed project, the potential for the permanent loss of sandy beach as a result of the change in the beach profile or steepening from potential scour effects. Presently, this shoreline remains open and can be used by the public for access and general recreational activities. Presently, this shoreline remains open and can be used by the public for access and general recreational activities. A County operated vertical accessway is located 21 lots to the east.

In past permit actions, the Commission has required that new shoreline protective devices be located as landward as possible to reduce adverse impacts to the sand supply and public access resulting from development. In the case of the proposed project, the applicants have demonstrated that the proposed revetment is located as landward as feasible to protect the existing septic system, and, secondarily, the existing utility room.

In addition, in past permit actions, the Commission has also required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. In the case of this project, to conclude with absolute certainty what impacts the proposed development would cause on the shoreline processes and public access, a historical shoreline analysis based on site-specific studies would be necessary. Although this level of analysis has not been submitted by the applicants, the applicants have proposed to offer a dedication of a public lateral access easement along the beach to mitigate any possible adverse impacts the proposed revetment may have on public access.

Because the applicants have proposed, as part of the project, an offer to dedicate a new lateral access easement along the southern section of the lot, it has not been necessary for Commission staff to engage in an extensive analysis of the potential

adverse effects to public access resulting from the proposed project. As such, Special Condition 2 has been included to implement the applicants' offer to dedicate a new lateral public access easement prior to the issuance of the coastal development permit. Condition 2 includes a 10 ft. privacy buffer measured from the seaward extent of the residence, which extends further seaward than the underlying revetment. This area will be available for public use when no other dry areas of the beach are available for public access.

As noted previously, the existing support structures and septic system are aging, and the existing residence is over 30 years old. The structural support system is based on timber pilings which may be substandard by today's construction and building standards, and which may have suffered termite damage intermittently over the years. While the structure may be structurally sound at present, and the applicants have not indicated any pending plans to undertake remodeling or renovation of the structure, the age and condition of the building and particularly the condition and construction methods associated with the construction of its timber supports, indicate that such plans are possible at some point in the future. In addition, a successor in interest to the present owner may even demolish the existing residence and rebuild on the site. Further, the City of Malibu may install a sewer system at a future date and at that time the septic system on the site would become obsolete.

If proposed, such changes would raise the possibility that the development footprint, including the timber pilings and existing septic system, could be replaced or moved landward, potentially obviating the need for the presently proposed revetment, or at a minimum, offering the potential to relocate the revetment landward and thereby to mitigate any adverse effects that it may have on public access to the sandy beach. Special Condition 3, as noted previously, ensures that future activities on the subject site or changes to the structures landward of the proposed revetment as noted in the condition would require the applicants to remove the revetment unless they obtain a new permit from the Commission for the revetment that is the subject of the present coastal development permit application.

The Commission further notes that chronic unauthorized postings of signs illegally attempting to limit, or erroneously noticing restrictions on, public access have occurred on beachfront private properties in the Malibu area. These signs have a chilling effect on the legitimate, protected access of the public to public trust lands. The Commission has determined, therefore, that to ensure that such postings are clearly understood by the applicants to be off limits until or unless a coastal development permit is obtained for such signage, it is necessary to impose Special Condition 5 to ensure that similar signs are not posted on or near the proposed revetment or existing apartment structures. The Commission finds that if implemented, Special Condition 5 will protect the public's right of access to the sandy beach below the MHTL.

In addition, the Commission notes that as proposed, the revetment will be almost invisible during the summer beach season and would not extend more than one foot

above the summer sand elevation. The revetment will be almost entirely covered with sand during the peak summer beach use seasons and when exposed will be comprised of naturally colored, weathered rock with no posted signs. As such, the Commission finds that the proposed revetment will not significantly affect public views of the coast from the sandy beach.

For all of these reasons, therefore, the Commission finds that as conditioned, the proposed project is consistent with Sections 30210, 30211, 30212, 30220, and 30251 of the Coastal Act.

D. 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 Chapter 3 (commencing with Section 30200) and that the permitted development will not prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200). A denial of a coastal development permit on grounds it would prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200) shall be accompanied by a specific finding which sets forth the basis for that conclusion.

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 applicants. As conditioned, the proposed development will not create adverse impacts 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 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).

E. CEQA

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned, 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 effect which the activity would have on the environment.

The Commission finds that the proposed project, as conditioned, will not have any significant adverse effects on the environment, within the meaning of the California Environmental Quality Act of 1970. Therefore, the proposed project, as conditioned, has been adequately mitigated and is consistent with CEQA and the policies of the Coastal Act.

Regional Location Map

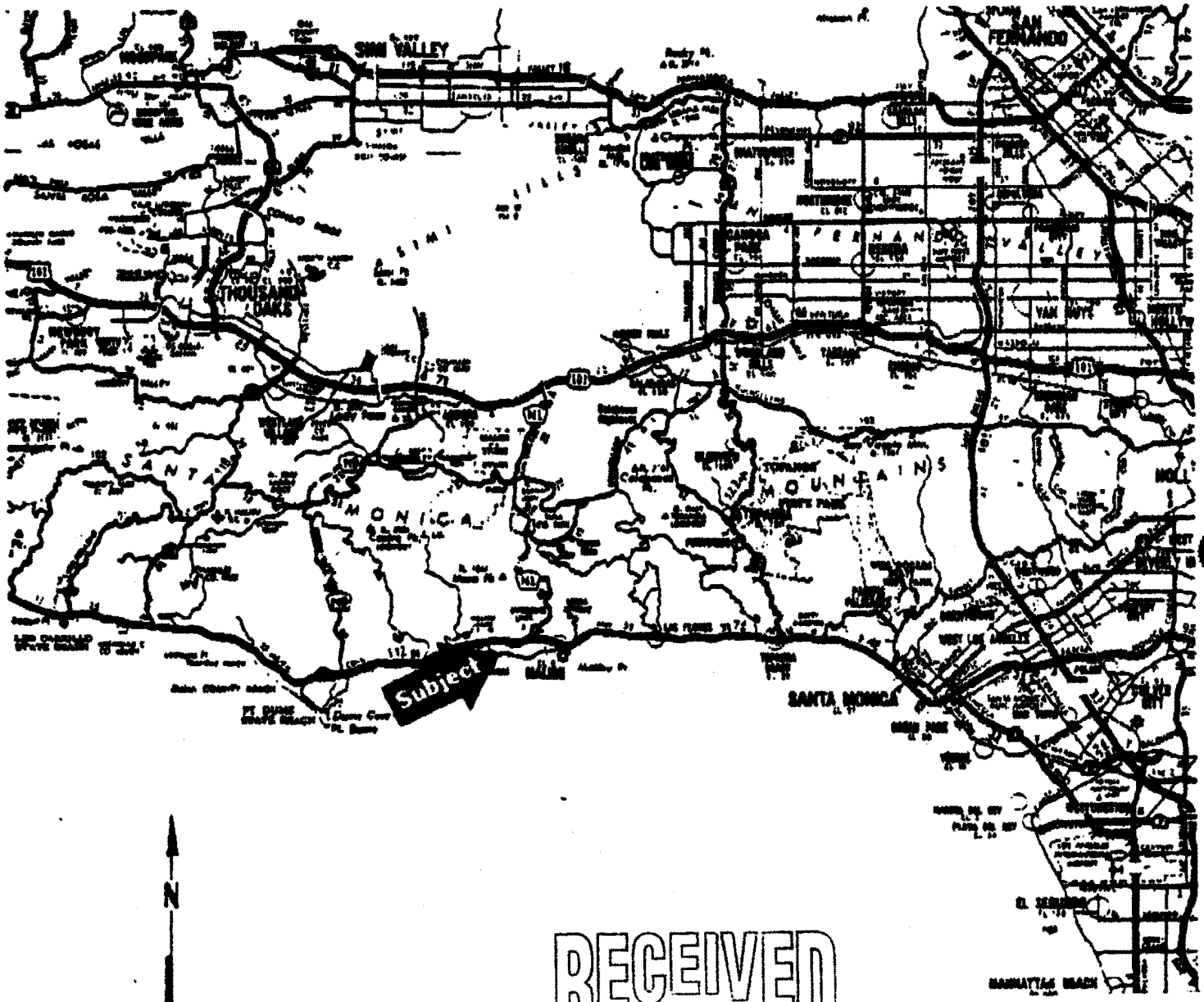
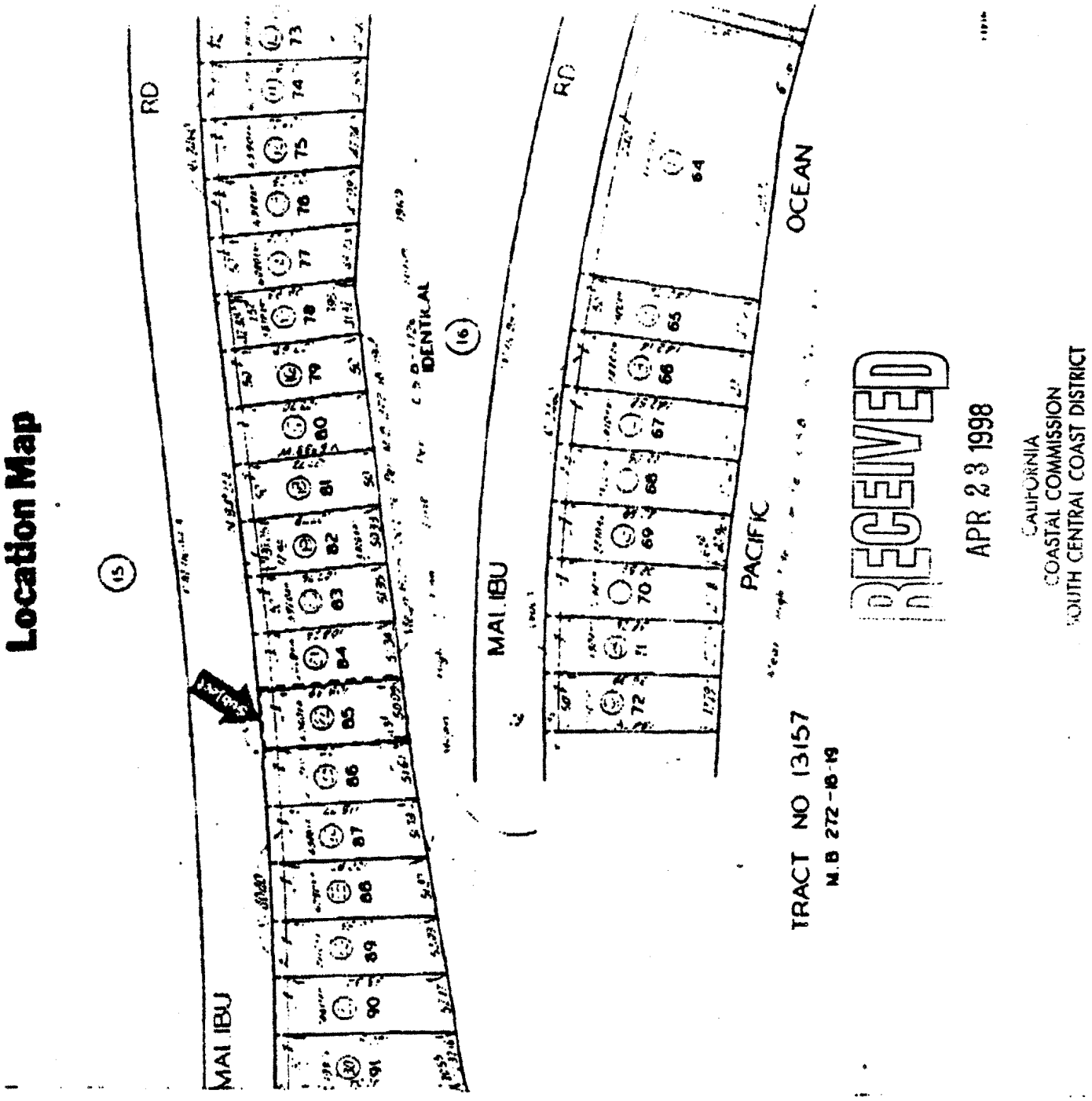


Exhibit 1a:
Application No. 4-98-127
Berg
Project Location



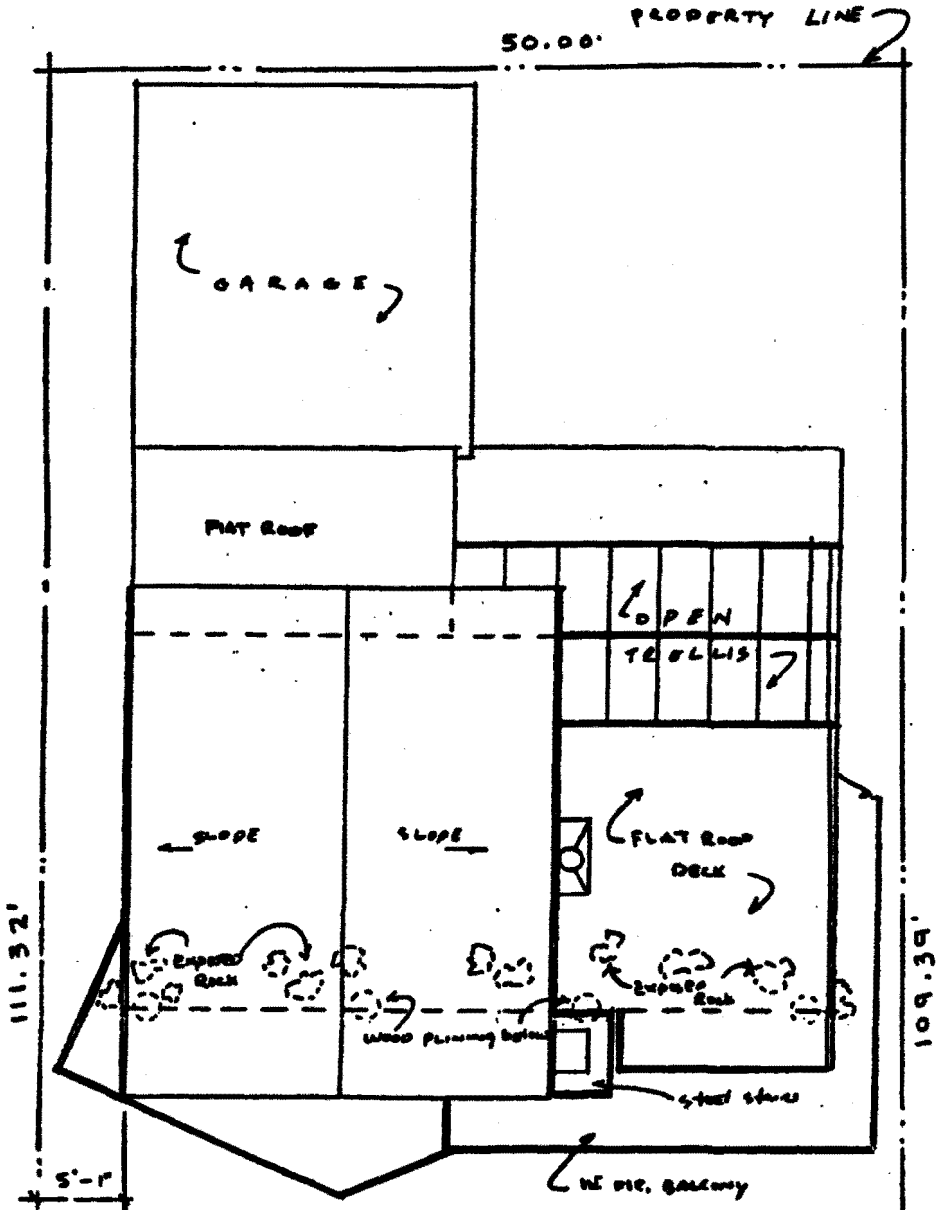
4458-013-022

Exhibit 1b:
Application No. 4-98-127
Berg
Project Location

SUMMARY OF IMPORTANT FACTS & VALUE CONCLUSIONS

Property Address: 24912 Malibu Road
Malibu, California 90265

Record Owner: Benjamin and Hazel M. Berg



HOUSE OF MR. AND MRS BENJAMIN BERG
24912 MALIBU ROAD MALIBU CALIF.
DRAWN BY:
CHECKED BY:
DATE 6-10-98
SCALE:
DRAWING NUMBER

PLOT PLAN
SCALE: 1/8" = 1'-0"

LEGAL DESCRIPTION
TRACT # 13137 VAC. STR. ADJ. ON N. & LOT 85
M.B. 272 P. 18, 19 LOS ANGELES COUNTY

N

Exhibit 2:
Application No. 4-98-127
Berg
Site Plan

BULKHEAD / OVERTOPPING BLANKET SECTION

SCALE 1" = 5'-0"

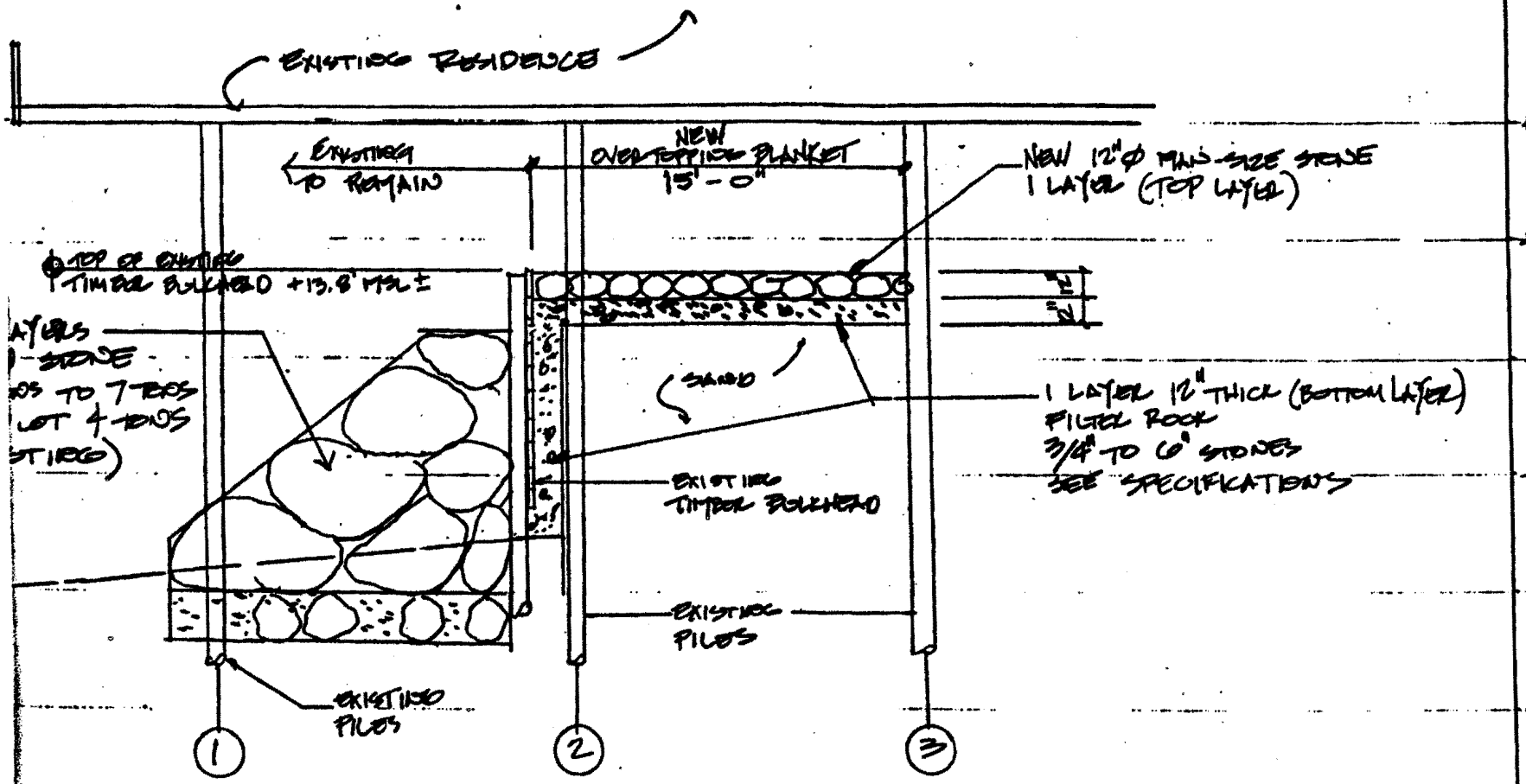


Exhibit 3:
Application No. 4-98-127
Persson
Cross Section