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STATE OF CALIFORNIA -- THE RESOURCES AGENCY

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Commission Action:	

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STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-99-239

APPLICANT: Sol Brothers Investments

AGENTS: Gilbert Leach

PROJECT LOCATION: 25228 Malibu Road, Malibu, Los Angeles County.

PROJECT DESCRIPTION: Replacement of a washed-out wooden bulkhead with a newly constructed 50 ft. long concrete seawall, and renovation and upgrade of existing private sewage disposal system to a secondary treatment system for an existing 3-unit apartment building.

Lot Area:	6,451 sq. ft.
Building Coverage:	3,080 sq. ft.
Paved Area:	250 sq. ft.
Height Above Existing Grade:	20 ft.

LOCAL APPROVALS RECEIVED: City of Malibu, Planning Department, Approval in Concept, 9/29/99; City of Malibu, Environmental Health Department, In-Concept Approval for Alternative Sewage Disposal System, 2/09/01.

SUBSTANTIVE FILE DOCUMENTS: Malibu/Santa Monica Mountains Land Use Plan; Response to Coastal Commission Request for Additional Information, David C. Weiss, 2/18/00; Response to Coastal Engineering Issues, David C. Weiss, 12/6/99; Coastal Engineering Report, David C. Weiss, 4/06/98; Geotechnical Engineering Update Report, Coastline Geotechnical Consultants, 1/05/00; Geotechnical Engineering Investigation Report, Coastline Geotechnical Consultants, 8/11/98; Update Report of Limited Engineering Geologic Investigation, Pacific Geology Consultants, 1/04/00; Report of Limited Engineering Geologic Investigation, Pacific Geology Consultants, 7/31/98; Coastal Development Project Review for Proposed Bulkhead Replacement at 25228 Malibu Road, 2/22/00; California State Lands Commission; Coastal Development Permit 5-87-707 (Goren Properties).

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends **approval** of the proposed project with 6 special conditions regarding 1) geologic and engineering recommendations, 2) construction responsibilities and debris removal, 3) lateral public access easement dedication, 4) sign restriction, 5) assumption of risk/shoreline protection, and 6) provisional term for shoreline protective structure.

The project site is located on Puerco Beach between Malibu Road and the ocean. The applicant is proposing the replacement of a washed-out wooden bulkhead with a newly constructed 50 ft. long concrete seawall, and renovation and upgrade of a private sewage disposal system to a secondary treatment system for an existing 3-unit apartment building. Although the proposed development will be located landward of the most landward measured mean high tide line, the maximum wave uprush limit extends to just 15 ft. seaward of the Malibu Road right-of-way line. Because the majority of project site is subject to wave uprush, it is not possible to construct any type of septic system that would not be subject to periodic wave action without the construction of some form of shoreline protection. Therefore, although the septic system will be located as landward as possible on the subject site, the proposed seawall is necessary to protect the septic system from wave uprush and erosion. Both the proposed septic system and seawall will be located as landward as feasible, and construction of the new seawall will not extend the seaward footprint of the previously existing wood bulkhead.

The subject property is located approximately 774 ft. west of a vertical public accessway and several lateral public accessways exist along the shoreline of oceanfront properties along Malibu Road. The applicant's proposal to construct a new concrete seawall at the subject site raises issue with Chapter 3 policies of the Coastal Act relative to ensuring that beachfront development minimizes the potential to cause shoreline erosion that will have adverse impacts on public beach use due to either temporary or permanent accelerated loss of beach sand. To mitigate the project's potential adverse impacts on shoreline processes resulting in loss of sand supply and loss of the public beach, **Special Condition 4** requires the applicant to dedicate a lateral public access easement along the beachfront portion of the subject site, as measured from the deck dripline of the existing residence to the ambulatory mean high tideline. As conditioned to provide for lateral public access, the proposed project will provide for public access along the beach under all tidal conditions. In addition, **Special Condition 6** will ensure that any future changes to the seawall, or other development at the site that may affect the location and/or necessity of the seawall proposed, are reviewed by the Commission for consistency with Chapter 3 policies of the Coastal Act. To further minimize potential impacts on public beach use **Special Condition 3** prohibits chronic unauthorized postings of signs illegally attempting to limit public access on the beach.

To ensure structural and site stability, **Special Condition 1** requires the applicant to submit project plans certified by all consulting geotechnical and coastal engineering consultants as conforming to their recommendations. Although the proposed development will be designed to ensure stability, the project site is located on a beachfront parcel and will be subject to inherent potential hazards such as storm damage, flooding, and liquefaction. Therefore, **Special Condition 5** requires the applicant to acknowledge the potential hazards on the project site and waive any claim of liability against the Commission. Finally, **Special Condition 2** prohibits stockpiling of construction equipment and debris on the beach, and requires that machinery not enter the intertidal zone at any time, to avoid potential risks to beachgoers and swimmer during the construction period.

The project, as conditioned, is consistent with all applicable Chapter Three Policies of the Coastal Act.

I. STAFF RECOMMENDATION

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-99-239 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and 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. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

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. **Interpretation.** Any questions of intent or interpretation of any term or condition will be resolved by the Executive Director or the Commission.

4. **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.

5. **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. Plans Conforming to Geologists' and Engineers' Recommendations

All recommendations contained in the Response to Coastal Engineering Issues, dated 12/6/99, and Coastal Engineering Report, dated 4/06/98 by David C. Weiss, and the Geotechnical Engineering Update Report, dated 1/05/00, and Geotechnical Engineering Investigation Report, date 8/11/98 by Coastline Geotechnical Consultants, and the Update Report of Limited Engineering Geologic Investigation, dated 1/04/00, and Report of Limited Engineering Geologic Investigation, dated 7/31/98 by Pacific Geology Consultants shall be incorporated into all final design and construction plans.

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit evidence to the Executive Director of the consultants' review and approval of all final design and construction plans. The final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission. Any substantial changes in the proposed development approved by the Commission which may be required by the consultant shall require an amendment to the permit or a new coastal permit.

2. Construction Responsibilities and Debris Removal

The applicant shall, by accepting this permit, agree: a) that no stockpiling of dirt or building materials shall occur on the beach; b) that all grading shall be properly covered and sand bags and/or ditches shall be used to prevent runoff and siltation; and, c) that measures to control erosion must be implemented at the end of each day's work. In addition, no machinery will be allowed in the intertidal zone at any time. The permittee shall remove from the beach and seawall area any and all debris that result from the construction period.

3. Offer to Dedicate Lateral Public Access

In order to implement a dedicated easement for lateral public access and passive recreational use along the shoreline as part of this project, the applicant shall 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 dedicating 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 dedication shall not be used or construed to allow anyone, prior to acceptance of the dedication, 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 ambulatory mean high tide line landward to the dripline of the existing deck, as illustrated on Exhibit 4.

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 dedication 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 and the easement area. This deed restriction shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

4. <u>Sign Restriction</u>

No signs shall be posted on the property subject to this permit unless they are authorized by a coastal development permit or an amendment to this coastal development permit.

5. <u>Assumption of Risk/Shoreline Protection</u>

A. By acceptance of this permit, the applicant acknowledges and agrees to the following:

1. The applicant acknowledges and agrees that the site may be subject to hazards from liquefaction, storm waves, surges, erosion, landslide, flooding, and wildfire.

2. The applicant acknowledges and agrees to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development.

3. The applicant unconditionally waives any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards.

4. The applicant agrees 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.

5. No future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to Coastal Development Permit 4-99-239 shall be undertaken if such activity extends the

seaward footprint of the subject shoreline protective device. By acceptance of this permit, the applicant hereby waives, on behalf of itself and all successors and assigns, any rights to such activity that may exist under Public Resources Code section 30235.

B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant 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 applicant's entire parcel and an exhibit showing the location of the shoreline protective device approved by this permit. 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.

6. <u>Provisional Term for Shoreline Protective Structure</u>

A. Coastal Development Permit No. 4-99-239, in full or in part, authorizes the construction of the shoreline protective device generally depicted in Exhibits 3,4 attached hereto. By acceptance of this permit, the applicant acknowledges that the purpose of the subject shoreline protective device is solely to protect the existing structures located on site, in their present condition and locations, including the sewage disposal system. If any of the activities listed below are undertaken, the shoreline protective device authorized by this permit shall be removed unless the Coastal Commission issues a new coastal development permit authorizing the shoreline protective device, or 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.

1. Changes to the foundation of any structure on the subject site including 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 or all of the structures existing on site shown on the exhibit required pursuant to paragraph (B) below.

The applicant or successor-in-interest shall contact the Executive Director if any of the above activities are contemplated so that a determination as to the necessity of applying for a new permit can be made. 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 and may take any other action authorized by law.

B. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant 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 applicant's entire parcel, and an Exhibit drawn to scale depicting all existing development on site to be protected 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

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. Project Description and Background

The applicant is proposing the replacement of a washed-out wooden bulkhead with a newly constructed 50 ft. long concrete seawall, and renovation and upgrade of an existing private sewage disposal system to a secondary treatment system for an existing 3-unit apartment building (Exhibits 3,4).

The project site is located on a beachfront parcel of land approximately 6,451 sq. ft. in size on Puerco Beach between Malibu Road and the ocean (Exhibits 1,2). The area surrounding the project site is characterized as a built-out portion of Malibu consisting of residential development. The parcel immediately east of the project site is vacant and the property directly west of the site is developed with a similar multiple-residential structure. Slopes on site descend approximately 24 ft. in elevation from Malibu Road to a narrow stretch of beach below. The project site was developed in 1966 and is currently developed with a 6,160 sq. ft. 3-unit multi-residential structure and also contains a few remnant components of a wood bulkhead previously located under the structure that was washed out during the winter storms of 1998. Commission staff has been unable to determine with certainty the date of construction of the original wood bulkhead. A previously existing leachfield was also washed out from under the structure in the 1998 winter storms. The applicant is proposing to replace the wood bulkhead with a newly constructed concrete seawall that will not result in a seaward extension of the protective device, and to replace and upgrade the septic system with an alternative

sewage treatment and disposal system. Both the proposed seawall and septic system will be located as far landward on the subject site as possible.

The applicant has submitted evidence of review of the proposed project by the California State Lands Commission (CSLC) dated February 22, 2000, which indicates that the CSLC presently asserts no claims that the project is located on public tidelands, although the CSLC reserves the right to any future assertion of state ownership or public rights should circumstances change (Exhibit 7).

The project site has been subject to past Commission action. Coastal Development Permit 5-87-707 for development consisting of construction of a 16 x 40 ft. beachfront wood deck was denied by the Commission in 1987 due to the fact that the project would result in seaward encroachment of development onto the sandy beach, directly impacting public access along the beach. The Commission found in it's action on CDP 5-87-707 that, due to the low elevation above the sandy beach and the seaward location of the deck proposed, the project would adversely impact public access by directly occupying beach area. The Commission also found in this permit action that given the location of the proposed deck, it was likely that the deck at some point would require a shoreline protective device to minimize wave hazards on the structure, and that construction of such a shoreline protection device would contribute to erosion and adversely impact the beach profile, and thereby impact public access along the beach.

B. Shoreline Protective Devices

The proposed project includes construction of a 50 ft. long, 16 ½ ft. high, concrete seawall. The newly constructed seawall will also include a 3 ft. deep, 10 ft. wide slurry-type foundation that will be poured beneath the sand surface on the landward side of the wall. The proposed seawall will also require construction of a partial, 13 ft. long return wall that will be tied into a remaining portion of the previously existing return wall located at the eastern property boundary, and will tie into an existing bulkhead located on the property immediately west of the subject site (Exhibits 3,4).. The proposed seawall will replace the previously existing bulkhead which was approximately 2 ft. in width with an unspecified depth. Though the proposed seawall will not be located any further seaward than the previously existing bulkhead, the new seawall will be a more massive structure, larger than the wood bulkhead in both height and thickness, and will occupy more beach area. The proposed seawall will be located 62 ft. seaward of the Malibu Road right-of-way/property line and approximately 30 ft. landward of the most landward measured mean high tide line. The proposed seawall will be located entirely beneath the existing residential structure (approximately 22 ft. landward of the existing deck dripline).

The seawall has been designed to withstand a storm equivalent to the 1982/83 or 1988 wave events, combined with an average high tide on +6' MLLW and +1' storm surge. The proposed seawall is designed neither for extreme conditions nor for complete protection from the design conditions. Extreme design conditions would use the

maximum wave conditions, a maximum tide elevation of +7' MLLW and a +1' storm surge. According to the applicant's engineer, David Weiss, this combination has a low probability of occurrence[1]. In addition, complete protection from the more probable design conditions would require a top wall elevation of +16.8' MLLW[2]. However, Mr. Weiss notes that the standard of design for septic systems allows for occasional overtopping of approximately +2' and he has recommended that the wall be no lower than +15.5' MSL to protect the septic system. In addition, a rock scour blanket will be placed behind the seawall to protect the septic system from damage during overtopping events.

Past Commission review of shoreline residential projects in Malibu has shown that such development results in potential individual and cumulative adverse effects to coastal processes, shoreline sand supply, and public access. Shoreline development, if not properly designed to minimize such adverse effects, may result in encroachment on lands subject to the public trust (thus physically excluding the public); interference with the natural shoreline processes necessary to maintain publicly-owned tidelands and other public beach areas; overcrowding or congestion of such tideland or beach areas; and visual or psychological interference with the public's access to and the ability to use public tideland areas. In order to accurately determine what adverse effects to coastal processes will result from the proposed project, it is necessary to analyze the proposed project in relation to characteristics of the project site shoreline, location of the development on the beach, and wave action. Therefore, it is necessary to review the 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 **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***

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[1] December 6, 1999, "Response to Coastal Engineering Issues" from David Weiss to April Verbanac.
[2] Ibid.

> ***surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.***

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.***

To assist in the determination of whether a project is consistent with Sections 30235, 30253, and 30250(a) 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 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 only when such structures are designed and engineered to eliminate or mitigate the adverse effects on 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 10 ft. landward from the mean high tide line.

1. Site Shoreline Characteristics

The proposed project site is located on Puerco Beach in the City of Malibu. Puerco beach is a relatively narrow beach backed by coastal bluffs. Puerco 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. Fluvial sediment from Malibu Creek and Topanga Canyon Creek is the major contributing sediment source in this subcell. However, given that Puerco Beach is located upcoast of Malibu Creek and Topanga Canyon Creek, sediment to this beach is predominantly derived from the upcoast Zuma Littoral Subcell, in which 90% of the sediment flows 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 the Zuma Subcell is derived from beach/bluff erosion and only 40% is derived from the local streams.[3]

The sources of sediment for beaches backed by coastal bluffs, such as project site, are the eroding bluffs themselves, as well as eroded material from inland areas carried to the beach by small coastal streams. Narrow beaches backed by coastal bluffs

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[3] Army Corps of Engineers, Los Angeles District, Reconnaissance Study of the Malibu Coast. 1994

experience seasonal and interannual changes similar to other sandy beach, however, unlike wide sandy beaches, bluff backed beaches do not have ample beach material to maintain a dry sandy beach during periods of high wave energy. As such, narrow bluff backed beaches often scour down to bedrock during winter months. At the subject site, the bedrock layer is a gradually sloped, wave abraded platform at approximately -4' to -5' MSL (-1.2' to –2.2' MLLW). The bedrock elevation suggests that this is the depth of scour from extreme events.

In the 1920's Malibu Road was constructed along Puerco Beach at the base of the bluff thus altering the natural process of shoreline nourishment, processes that would expose the bluff to wave attack as the beach eroded during periods of high wave energy. Wave attack that would occur along a natural, unaltered shoreline would erode the base of the bluff and cause it's position to retreat landward. The dynamic of bluff erosion and retreat results in the landward migration of the bluff and, in turn, establishment of new beach area. In the case of Puerco Beach, the back of the beach has been fixed by Malibu Road and by shoreline protective devices that have been constructed on the beach to protect development. Due to the construction of Malibu Road and shoreline protective structures at the base of the bluff Puerco Beach does not retreat in response to natural coastal processes and beach material that would normally erode from the bluff in response to wave attack is no longer available to replenish the beach.

Puerco Beach is a narrow beach which has been developed with numerous single family residences located to the east and west of the subject site. The Malibu/Los Angeles County Coastline Reconnaissance Study by the United States Army Corp of Engineers dated April 1994 indicates that residential development on Puerco Beach is exposed to recurring storm damage because of the absence of a sufficiently wide protective beach and that damage to older, low-lying, and less well constructed structures is expected.

In addition to being a relatively narrow beach that is frequently exposed to wave attack, significant evidence exists which suggests that Puerco Beach is an eroding beach. The 1994 Malibu/Los Angeles County Coastline Reconnaissance Study referenced above concludes that Puerco Beach is experiencing long-term shoreline retreat which averages slightly less than 1 ft. per year. An engineering study conducted for the city of Malibu in 1992 by Moffatt & Nichol Engineers for Puerco Beach also concludes that the subject site is an eroding beach that retreats landward 0.25-0.5 feet/year. The applicant has submitted a Coastal Engineering Report dated April 6, 1998 which briefly discusses the characteristics of the beach at site and shoreline processes of oscillating beaches. The coastal engineering consultant does not specifically state that the beach is or is not an oscillating beach rather than an eroding beach. Regardless of whether the subject beach is characterized as an oscillating or eroding beach, the Coastal Engineering Report dated April 6, 1998 indicates that the width of the beach on site changes seasonally and that the subject beach experiences a seasonal foreshore slope movement (oscillation) by as much as 40 ft.

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

Many studies performed on both equilibrium and eroding beaches have concluded that loss of beach occurs on both types of beaches where a shoreline protective device exists. Based on the available evidence discussed in the previous section which concludes that Puerco Beach is an eroding beach, the Commission finds that Puerco Beach is defined as a narrow beach experiencing a long-term erosion trend and that construction of a seawall on the beach results in a loss of sandy beach area and changes in the beach response to coastal forces. In order to determine the specific impacts of the proposed seawall on the shoreline the location of the proposed protective device in relation to the expected wave uprush, as calculated by the location of the mean high tide line and beach profile, must be analyzed.

a. Mean High Tide Line

The Coastal Engineering Report prepared by David C. Weiss Structural Engineer & Associates dated 4/6/98 represents that the most landward known measurement of the ambulatory mean high tide line on the project site occurred on March 5, 1998 when the mean high tide line on site was located approximately 92 ft. seaward of the Malibu Road right-of way line. The seaward most extension of the proposed seawall will be located 62 ft. seaward of the Malibu Road right-of-way line (approximately 30 ft. landward of the March 5, 1998 mean high tide line). Based on the submitted information, the proposed development will be located landward of the most landward measured mean high tide line of March 5, 1998. However, the March 5, 1998 mean high tide line has not been verified by the State Lands Commission and the measurement represents only one yearly measurement which does not provide adequate information for a definitive determination of the current location of the mean high tide line at the site. The location of the mean high tide line at the site is ambulatory in nature and the proposed seawall will, at times, be subject to wave run-up that exceeds the landward location of the proposed seawall.

b. Wave Uprush

Although the proposed structures will be located landward of the March 5, 1998 mean high tide line, the Coastal Engineering Study prepared by David Weiss Structural Engineer & Associates dated 4/6/98 indicates that the maximum wave uprush at the subject site will occur 15 ft. seaward of the Malibu Road right-of-way line. This, in

general, coincides with the location where the bedrock slope steepens and changes from being nearly horizontal to being more vertical.

The proposed project includes the installation of an alternative sewage disposal system including a new bottomless sand filter dispersal method. As noted above, the applicant's coastal engineering consultant has indicated that only a 15 ft. portion of the subject site will be located landward of the maximum wave uprush limit. The proposed septic system is located adjacent to Malibu Road on the landwardmost portion of the site and is designed and located to meet the minimum setback requirements of the City of Malibu Environmental Health Department. As such, the septic system will be located as landward as feasible. However, the proposed septic system will extend approximately 44 ft. seaward of the Malibu Road right-of-way and will therefore extend approximately 29 ft. seaward of the maximum expected wave uprush. Therefore, it is not possible to construct any type of septic system that would not be subject to periodic wave action without the construction of some form of shoreline protection. As such, the proposed septic system will require a shoreline protective device to protect the proposed septic system from wave uprush and erosion, and to ensure the stability of the system.

For these reasons, the Commission finds that the proposed seawall is required to protect the new septic system. The proposed seawall will be located on the subject site to meet the minimum setback requirements imposed by the City of Malibu Environmental Health Department for septic systems and seawalls on a beach. As such, the Commission further finds that the proposed seawall will be located as landward as feasible, but will be subject to wave action during storm and high tide events. Therefore, the following section evaluates the potential impacts of the proposed seawall on the beach.

3. <u>Effects of the Shoreline Protective Device on the Beach</u>

One of the main functions of a seawall is protection of the upland area – of the land or structures landward of the seawall. While they are often effective in protecting the landward development, they do nothing to protect the beach seaward of the seawall and often can have adverse effects on the nearby beach area. Dr. Douglas 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 shoreline protection device. He states:

> *Seawalls usually caused accelerated erosion of the beaches fronting them and an increase in the transport rate of sand along them. 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.*[4]

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 wall is, 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 of storms. By contrast, a seawall constructed too near to the mean high tide line may constantly create problems related to frontal and end scour, as well as upcoast sand impoundment.

Ninety-four experts in the field of coastal geology signed the following succinct statement of the adverse effects of shoreline protective devices:

> *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.*[5]

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 and to protect the public's access along the ocean and to the water.

The proposed project involves a shoreline structure that, as a result of wave interaction with the structure, will seasonally affect the configuration of the shoreline and the beach profile, which will have an adverse impact on the shoreline. Even though the precise impact of a structure on the beach is a persistent subject of debate within the discipline

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4 Letter dated 25 February 1991 to Coastal Commission staff member and engineer Lesley Ewing from Dr. Douglas Inman.
5 Ibid

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 whether it is a vertical seawall or a rock revetment. The main difference between a vertical seawall and rock revetment seawall 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 seawall will adversely impact the shoreline as a result of beach scour, end scour (the beach areas at the end of the seawall), the retention of potential beach material behind the wall, the fixing of the back beach, and the interruption of longshore processes. In order to evaluate these potential impacts relative to the proposed structure, its design and location on Puerco Beach will be analyzed, and each of the identified effects on the beach will be evaluated below.

The impacts of seawalls are important relative to beach use for several reasons. The first reason involves public access. The subject property is located approximately 774 ft. to the west of an existing vertical public accessway and several lateral public accessways exist along the beachfront of Malibu Road (Exhibit 6. Scouring and beach erosion resulting from construction of a 50 ft. long seawall will translate into a loss of beach sand at an accelerated rate. The resultant sand loss will be greater during high tide and winter season conditions than would otherwise occur if the beach were unaltered. Because there is already a narrow beach at Puerco Beach, a small deflation of the beach slope seaward of the wall would reduce the physical and temporal availability of the beach at this location.

The second impact from seawalls relates to turbulent ocean conditions. As wave run-up strikes the face of the seawall and is deflected seaward, wave energy is concentrated at the face of the wall and ocean conditions along Puerco Beach will become more turbulent than would occur along an unarmored beach area. The increase in turbulent ocean conditions along Puerco Beach will accelerate displacement of beach sand where the seawall is constructed. The Commission finds that the proposed seawall will be subject to wave action thus intensifying turbulent ocean conditions on the beach and increasing displacement of beach material.

a. <u>Beach Scour</u>

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 is a frequently-observed occurrence. When waves impact on a hard surface such as a coastal bluff, rock revetment, or vertical seawall, 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 do affect the supply of beach sand.

The Coastal Engineering Study by David Weiss Structural Engineer & Associates dated 4/6/98 indicates that the proposed seawall will be subject to wave action. In past permit actions, the Commission has found that shoreline protective devices which are subject to wave action tend to exacerbate or increase beach scour. This phenomenon has been recognized for many years. A 1976 report by the State Department of Boating and Waterways found that:

> *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.*[6]

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.*[7]

As stated previously, Puerco Beach is a narrow eroding beach. The applicant's coastal engineering consultant has indicated that the proposed seawall will be located seaward of the wave uprush and that seasonal foreshore slope movement can be as much as 40 ft. Therefore, the proposed seawall will be routinely acted upon by waves during storm conditions and the winter season. A seasonal eroded beach condition can be expected to occur with greater frequency due to the placement of the seawall on the subject site. Additionally, factors such as an increase in storm frequency or an increase in sea level rise will subject the proposed seawall to greater wave attack and exaggerate the seasonally eroded beach condition. With an increase in seasonal erosion, the subject beach will experience accelerated scour and also accrete at a slower rate. Therefore, the Commission finds that the proposed seawall, over time, will result in potential adverse effects to beach sand supply resulting in increased seasonal erosion of the beach and longer recovery periods.

The applicant's coastal engineering consultant, David C. Weiss, contends in the Response to Coastal Engineering Issues report dated 12/6/99 that the proposed

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6 State Department of Boating and Waterways (formerly called Navigation and Ocean Development), Shore Protection in California (1976), page 30.
7 Coastal Sediments '87.

seawall will create an approximate 1 foot deep scour trench seaward of the structure. The coastal engineering consultant further contends in the referenced report that this scour is not erosion but is a minor redistribution of sand directly in front of the structure. According to Mr. Weiss the beach eventually rebuilds and fills the depression. This analysis identifies the physical scour effects that occur from a seawall, however, it fails to consider the cumulative impact from the numerous seawalls that have been built on Puerco Beach. The small scour and changes to the beach that results from a 50' seawall may be difficult to quantify, but when considered together with the combined impact of the numerous seawalls constructed on Puerco Beach, can have a significant effect on the beach.

b. <u>End Effects</u>

End scour effects involve changes to the beach profile adjacent to the shoreline protective device at either end. One of the more common end effects comes from the reflection of waves off of the shoreline protective device in such a way that they add to the wave energy which is impacting the unprotected coastal areas on either end. In addition, literature on coastal engineering repeatedly warns that unprotected properties adjacent to any shoreline protective device may experience increased erosion. Although it is difficult to quantify the exact loss of material due to end effects, as measurement of such losses on a parcel specific basis is rarely undertaken, Gerald G. Kuhn of the Scripps Institution of Oceanography concludes that erosion on properties adjacent to a rock seawall is intensified when wave runup is high.[8]

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. 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.[9] Dr. Kraus' key conclusions were that seawalls could be accountable for retention of sediment, increased local erosion and increased end erosion. 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 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*

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8 Paper by Gerald G. Kuhn of the Scripps Institution of Oceanography entitled "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California" (1981).
9 "Effects of Seawalls on the Beach", published in the Journal of Coastal Research, Special Issue #4, 1988.

> *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.*[10]

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.[11] 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. These end effects would be expected only when the bulkhead was exposed to wave attack and, under equilibrium or accreting beach conditions, this scour will likely disappear eventually during post-storm recovery. 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 seawall is subject to wave action. In the case of this project, the proposed seawall will be located as landward as feasible in order to minimize adverse effects to shoreline sand supply from end effects.

c. Seawalls Fix the Location of the Backshore

It is generally agreed that where a beach is eroding, the erection of a seawall will eventually define the boundary between the sea and the upland. This result can be best explained as follows: on an eroding shoreline fronted by a beach, a beach will be present as long as some sand is supplied to the shoreline. As erosion proceeds the entire profile of the beach retreats. This process is halted, however, when the retreating shoreline reaches a seawall. While the shoreline on either side of the seawall continues to retreat, shoreline retreat in front of the seawall stops. Eventually, the shoreline in front of the seawall protrudes into the water with the mean high tide line fixed at the base of the structure. In the case of an eroding shoreline this represents the loss of a beach as a direct result of the seawall.

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10 "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.
11 "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.

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.*[12]

Dr. Everts further concludes that armoring in the form of a shoreline protection device 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 shoreline protective device 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 beach. In such areas, even as erosion proceeds, a beach would be present in the absence of a seawall. As described previously, Puerco Beach is an eroding beach and therefore, the effects of the proposed seawall could potentially have adverse impacts as the beach erodes further landward and the protective device prevents beach retreat and sand replenishment.

d. <u>Retention of Potential Beach Material</u>

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 Puerco Beach the back of the beach is fixed at

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12 Letter Report dated March 14, 1994 to Coastal Commission staff member and engineer Lesley Ewing from Dr. Craig Everts, Moffatt and Nichol Engineers.

Malibu Road or by the bulkheads installed to protect residences and septic systems seaward of Malibu Road. 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 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...*[13]

As explained, the seawall will protect the septic system. 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 seawall will have greater exposure to wave attack.

4. Sea Level Rise

Sea level has been rising slightly for many years. In the Santa Monica Bay area, the historic rate of sea level rise has been 1.8 mm/yr. or about 7 inches per century[14]. Sea level rise is expected to increase by 8 to 12 inches in the 21st century.[15] There is a growing body of evidence that there has been a slight increase in global temperature and that an accelerated rate of sea level rise can be expected to accompany this increase in temperature. Mean water level affects shoreline erosion in several ways and an increase in the average sea level will exacerbate shoreline erosion.

On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. On a relatively flat beach, with a slope of 40:1, every inch of sea level rise will result in a 40-inch landward movement of the ocean/beach interface. For fixed structures on the shoreline, such as single family residences, pilings, or seawalls, an increase in sea level will increase the extent and frequency of wave action and future inundation of the structure. More of the structure

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13 National Academy of Sciences, Responding to Changes in Sea Level: Engineering Implications, National Academy Press, Washington D.C., 1987, page 74.

[14] Lyles, S.D., L.E. Hickman and H.A. Debaugh (1988) Sea Level Variations for the United States 1855 – 1986. Rockville, MD: National Ocean Service.

[15] Field et. al., Union of Concerned Scientists and the Ecological Society of America (November 1999) Confronting Climate Change in California, www.ucsusa.org.

will be inundated or underwater than are inundated now and the portions of the structure that are now underwater part of the time will be underwater more frequently.

Accompanying this rise in sea level will be increased wave heights and wave energy. Along much of the California coast, ocean bottom depth controls nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in wave height can cause a significant increase in wave energy and wave damage. So, combined with a physical increase in water elevation, a small rise in sea level can expose previously protected back shore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces.

A second concern with global warming and sea level rise is that climatic changes could cause changes to storm patterns and wave climate for the entire coast. As water elevations change, the transformation of waves from deep water will be altered and points of energy convergence and divergence could shift. The new locations of energy convergence would become the new erosion "hot spots" while the divergence points may experience accretion or stability. It is highly likely that portions of the coast will experience more frequent storms and the historic "100-year storm" may occur every 10 to 25 years. For most of California the 1982/83 El Niño event has been considered the "100-year storm." Certain areas may be exposed to storms comparable to the 1982/83 El Niño storms every few decades. In an attempt to ensure stability under such conditions, the Commission has required that all new shoreline development be designed to withstand either a 100-year storm event, or a storm event comparable to the 1982/83 El Niño.

Therefore, if new development along the shoreline is to be found consistent with the Coastal Act, the most landward location must be explored to minimize wave attack with higher wave forces as the level of the sea rises over time. Shoreline protective devices must also be located as far landward as feasible to protect public access along the beach as discussed further below. In the case of this project, the proposed development will be located as landward as feasible and has been designed to withstand a storm event equivalent to the 1982-83 or 1988 storm event, with no more that 2' of overtopping.

As discussed in detail above, adverse impacts on the beach caused by shoreline protective devices can be minimized by locating the protective structure as landward as possible, which reduces the frequency with which the structure is subject to wave action and, in turn, reduces scouring and erosion of the beach. The new seawall and septic system will be located as landward as possible. However, the Commission further notes that any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protective device would increase the frequency with which the seawall is subject to wave action, and would result in increased beach erosion and adverse effects to shoreline sand supply and public access. Therefore, to ensure that the proposed project does not result in new future adverse effects to the

sandy beach and public access, **Special Condition 5** requires the applicant to record a deed restriction that would prohibit any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to this permit if such activity extends the seaward footprint of the subject shoreline protective device.

The Commission also notes that the purpose of the shoreline protective device authorized by this permit is solely to protect the septic system on site and that no shoreline protective device is required to protect the existing residential structure. If the septic system approved under this permit were replaced or abandoned, however, then the seawall approved under this permit to protect the septic system might no longer be necessary and the adverse impacts of the shoreline protective device on the beach and public access could be eliminated through its removal or by locating the shoreline protective device further landward. Therefore, to ensure that the proposed project does not result in new future adverse effects to shoreline sand supply and public access and that future impacts are reduced or eliminated, **Special Condition 6** also requires the applicant to record a deed restriction which provides that a new coastal development permit for the shoreline protective device authorized by this permit shall be required if the proposed septic system is replaced or abandoned for any reason (including the installation of a new sewer system along Malibu Road) and that if a new coastal development permit for the shoreline protective device is not obtained in the event of replacement or abandonment of the septic system, then the shoreline protective device authorized by this permit shall be removed.

The proposed shoreline protective device will be located as far landward as possible, thereby minimizing adverse impacts on the beach and public beach use than if the seawall were located further seaward. However, the Commission also notes that even though the proposed seawall will be located as landward as feasible, the seawall will be located in the wave uprush zone and therefore routinely subject to wave action during storm conditions and the winter season. Also, as detailed in the preceding discussion, the seasonal eroded beach condition can be expected to occur more frequently due to construction of the seawall on the site, an increase in storm frequency or an increase in sea level rise. An increased occurrence in seasonal erosion of the subject beach will exacerbate beach scour and erosion thereby altering the natural beach slope and reducing the amount of physical and transitory beach area available for public use. Thus, though the location of the proposed seawall will minimize adverse impacts on the subject beach, the new seawall will nonetheless result in adverse impacts on the beach which are also expected to increase in severity in the future.

In past permit actions, the Commission has required that new development on a beach, including the construction of new shoreline protective devices, provide for lateral public access along the beach in order to mitigate adverse effects to public access from increased beach erosion and loss of beach area. As described previously, construction of the new seawall at the site will alter the beach profile on Puerco Beach and will result

in an individual and cumulative (in concert with other shoreline protective devices on Puerco Beach) loss of sand supply on the beach. The Commission finds, therefore, that a lateral public access easement located along the beach at the subject site will ensure public access to beach area existing seaward of the proposed seawall, and will thus mitigate for the loss of public beach area caused by construction of a new seawall on the site. As such, **Special Condition 3** requires the applicant to dedicate a lateral public access easement along the entire southern portion of the lot, as measured from the dripline of the proposed deck to the ambulatory mean high tideline, prior to issuance of the coastal development permit. The lateral public access easement accurately describes the ambulatory nature of the easement's width in relation to the mean high tide line and will be consistent with other lateral access easements which have been recorded on properties along Puerco Beach and the Malibu area.

5. Impacts of the New Seawall Compared to the Previously Existing Wood Bulkhead

The previous wood bulkhead was constructed approximately the same time as the original development of the residential structure, undertaken in 1966. In the Response to Coastal Engineering Issue report dated 12/6/99, the applicant's coastal engineering consultant states "The original bulkhead was constructed with the building and has been in place for many years. The proposed wall will be located in the same location as the original wall. The (sic.) have been no adverse effects on the adjacent properties in the past, there will be none in the future."[16] A more recent facsimile transmittal sent to the District Office by the applicant on June 6, 2001 notes that "I spoke with David Weiss who did our wave uprush study about whether a concrete wall would have any greater impact on the beach than a wooden wall. He answered that it would not, and in fact since our wall was being placed back towards the road somewhat, the impact would be less." [17] However, project plans for the replacement wall show that it will be in the same location of the original wall. In addition, the applicant has submitted a site and foundation plan dated 2/9/01 with In-Concept Approval from the City of Malibu Environmental Health Specialist illustrating the locations of the proposed septic system and seawall. The plan illustrates that the 24 ft. by 36 ft. bottomless sand filter dispersal area required for the septic system is setback between approximately 5 and 8 ft. landward of the proposed seawall. This setback meets the minimum 5 ft. setback for septic systems from seawalls located on beachfront lots required by the City of Malibu Environmental Health Department. Based on the statement previously made by the applicant's engineer in the Response to Coastal Engineering Issue report dated 12/6/99 and project plans submitted by the applicant which indicate the new seawall will be located in the same location as the original wall, and the fact that the septic system and seawall are designed and located to meet minimum setback requirements, the proposed seawall will be located as landward as possible.

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[16] December 6, 1999 "Response to Coastal Engineering Issues" from David Weiss to April Verbanac, Page 3 of 5.
[17] June 1, 2001 FAX, "Re: Application #4-99-239," from Bruce Goren to Gary Timm,

The change in material from wood to concrete will cause little, if any change in the impacts from the structure. However, the new seawall will continue the length of time in which the structure poses adverse effects on the beach. As discussed previously, there are identifiable adverse impacts from construction of shoreline protective devices on a beach. Due to concerns about scour, end effects, beach recovery time, changes to passive erosion and encroachment onto the beach, the Commission does not concur with the statement from the applicant's coastal engineer that there have not been any adverse impacts on the adjacent properties from the original bulkhead. The Commission finds that the original bulkhead had impacts on the adjacent beach area, and replacement of the original bulkhead with a concrete seawall will allow these impacts to continue.

The original wooden seawall was not designed or constructed to withstand recent severe storm events. Evidence of this is the fact that the original bulkhead failed during the 1997/98 El Niño event. The proposed seawall has been designed to withstand severe storm events, such as the 1997/98 El Niño, and, according to the applicant's engineer, "with proper maintenance, the structure could last indefinitely. Little or no maintenance is required." The proposed seawall will have a wider, more substantial foundation than the original bulkhead. In addition, the new seawall will be higher than the wooden bulkhead. These design changes have been recommended to prevent the new septic system from being damaged by a future storm event. This will provide the proposed new seawall with a greater anticipated longevity than the earlier wooden bulkhead. It's indefinite life expectancy means that the impacts from this wall could continue for an indefinite period,

In the case of the proposed project, the proposed concrete seawall will lengthen the life expectancy of the shoreline protective device indefinitely, which will result in the continued potential for permanent loss of sandy beach and adverse impacts on public beach use. The purpose of the shoreline protective device authorized by this permit is solely to protect the septic system. If the new septic system approved under this permit were to be replaced or abandoned, however, the seawall may be relocated further landward or may no longer be necessary to protect development at the site. As such, adverse impacts on the beach and public access associated with the seawall could be reduced or eliminated by locating the shoreline protective device further landward or through complete removal of the seawall. Therefore, **Special Condition 6** requires the applicant to obtain a new coastal development permit for the shoreline protective device authorized by this permit if the proposed septic system is replaced or abandoned for any reason (including future installation of a new sewer system along Malibu Road), or if a coastal development permit is not obtained, the shoreline protective device authorized by this permit shall be removed. Implementation of Special Condition 6 will ensure that any possible change in the design, location, or necessity of the proposed seawall in the future, which may accompany a change in the proposed septic system, will be reviewed by the Commission for potential impacts on the subject beach, and/or that impacts on the beach are potentially eliminated through complete removal of the seawall.

6. Past Commission Actions on Shoreline Development

Many portions of the Malibu coastline are intensely developed with single family residences. The eastern portion of the Malibu coastline, including Las Tunas, Big Rock, La Costa and Carbon beaches, form an almost solid wall of residential development along a five mile stretch of the shoreline. This residential development extends over the sandy and rocky beach in many areas and most of the residences have shoreline protective devices such as rock revetments and concrete or timber seawalls. This residential development and their associated protective devices prevent access to the coast, obscure views to the beach and water from Pacific Coast Highway, 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 and the 1976 Coastal Act. As previously stated, Section 30235 of the Coastal Act allows for the construction of protective devices only if the device serves to protect coastal dependent uses, or to protect existing structures or 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 in order to be developed. Therefore, 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, (such as use of caissons or landward setbacks to eliminate the need for shoreline protection), than it is today.

When beachfront communities are constructed on the sandy beach, as is common in the Malibu area, the development requires some form of shoreline protective device to avoid wave damage. In Malibu, all beachfront homes utilize septic systems which, when determined to be subject to wave uprush by a coastal engineer, are required to have a shoreline protective device to protect the system. This requirement applies to all new development, extensive remodels, and/or reconstruction, as well as any changes to an existing septic system or when a new septic system is required or proposed.

Pursuant to Section 30235 of the Coastal Act, the Commission has found in past permit actions in Malibu that seawalls, revetments, or other types of shoreline protective devices can be permitted to protect existing structures or new structures which constitute infill development only when designed and engineered to eliminate or mitigate adverse impacts on the shoreline. In some cases the Commission has determined that in beach areas largely committed to residential development having shoreline protective devices, in may be appropriate to allow construction of new shoreline protective devices that tie into adjacent existing seawalls. In the case of the proposed development, a new seawall and upgraded septic system will be constructed

at the site. The proposed development is infill development on Puerco Beach, will be located as far landward as possible, will tie into an existing bulkhead located on the parcel directly west of the project site, and will include a return wall at the east property boundary adjacent to a vacant lot (Exhibits 3,5).

a. **Seaward Encroachment**

In 1981 the Commission adopted the "District Interpretive Guidelines" for Malibu/Santa Monica Mountains area of the coastal zone. These guidelines established specific standards and criteria for shoreline development along the Malibu Coast. The guidelines included the "stringline" policy for the siting of infill development:

> ***In a developed area where new construction is generally infilling and is otherwise consistent with Coastal Act policies, no part of a proposed new structure, including decks and bulkheads, should be built further onto a beach than a line drawn between the nearest adjacent corner of the adjacent structures. Enclosed living space in the new unit should not extend farther seaward than a second line drawn between the most seaward portions of the nearest corner of the enclosed living space of the adjacent structure.***

In 1986 the Commission certified the Los Angeles County Malibu/Santa Monica Mountains Land Use Plan which also contains specific policies often relied by the Commission for guidance in addressing infill shoreline development. These policies include:

> ***Policy 153 ...In a developed area where new construction is generally considered infilling and is otherwise consistent with LCP policies the proposed new structure may extend to the stringline of the existing structures on each side.***
>
> ***Policy 166 ...Revetments and seawalls shall be permitted when required to serve coastal dependent uses or to protect existing structures or new structures which constitute infill development.***

The stringline policy limits infill development to only existing developed shoreline areas and limits seaward encroachment of new structures on the beach. In the case of the proposed project, no changes are proposed to the existing residential structure therefore, the proposed project does not invoke the stringline policy. In addition, construction of the new seawall will not result in a seaward extension beyond the extent of the previously existing wood bulkhead. Though the overall mass of the proposed concrete seawall will be greater than the previously existing wood bulkhead, the increased footing will occur entirely landward of the original bulkhead footprint. The proposed project will not result in seaward encroachment of any development at the site, therefore, the Commission finds that the proposed development, relative to seaward encroachment, is located as landward as feasible and is consistent with existing adjacent development along Puerco Beach.

7. Conclusion

In past permit actions, the Commission has approved the construction of shoreline protective devices only when: (1) (for new development) such development is consistent with the Commission's treatment of "infill development," and (2) the shoreline protective device is required to protect a septic system (no feasible alternatives exist), and (3) the shoreline protective device is located as landward as possible in order to minimize any adverse effects to shoreline sand supply and public access.

The Commission finds that a shoreline protective device is required to protect the proposed septic system and the proposed alternative septic system has been designed to minimize both the size and seaward extent of the system. However, the seaward extent of the septic system will still be located within the wave uprush limit and will require a shoreline protective device to ensure the stability of the system. Further, because only 15 ft. of the subject site will be located landward of the maximum wave uprush limit, it is therefore not possible to construct any type of septic system that would not be subject to periodic wave action without the construction of some form of shoreline protection. Therefore, the proposed seawall is necessary to protect the proposed septic system from wave uprush and erosion.

The Commission finds that the new seawall and septic system will not result in seaward encroachment and will be located as landward as possible. However, the Commission further finds that any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protective device would result in increased adverse effects to shoreline sand supply and public access. Therefore, to ensure that the proposed project does not result in new future adverse effects on the beach and to public access, **Special Condition 5** requires the applicant to record a deed restriction that would prohibit any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved if the activity extends the seaward footprint of the subject shoreline protective device. In addition, the Commission finds that to ensure that the proposed project does not result in new future adverse effects to shoreline sand supply and public access and that future impacts may be reduced or eliminated, **Special Condition 6** requires the applicant to obtain a new coastal development permit for the shoreline protective device authorized by this permit if the proposed septic system is replaced or abandoned for any reason (including the installation of a new sewer system along Malibu Road), and that if a new coastal development permit for the shoreline protective device is not obtained in the event of replacement or abandonment of the septic system, then the shoreline protective device authorized by this permit shall be removed.

Finally, in past permit actions, the Commission has required that new development on a beach, including the construction of shoreline protection devices, provide for lateral public access along the beach in order to mitigate adverse effects on public access from increased beach erosion and loss of beach area available for public use. The Commission finds that construction of the seawall will result in adverse impacts on

beach availability and public beach access for the reasons set forth above, and the proposed project will be consistent with the public access policies of the Coastal Act only if conditioned to mitigate the adverse impacts of the seawall on public beach use. As such, **Special Condition 3** requires the applicant to dedicate a lateral public access easement along the entire southern portion of the lot, as measured from the dripline of the existing deck seaward to the ambulatory mean high tideline, prior to the issuance of the coastal development permit. The lateral public access easement accurately describes the ambulatory nature of the easement's width in relation to the mean high tide line and will be consistent with other lateral access easements which have been recorded on properties along Puerco Beach and the Malibu area.

For the reasons set forth above, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30235, 30250, and 30253 of the Coastal Act.

C. Hazards and Geologic Stability

Section **30253** of the Coastal Act states in pertinent part that 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.***

The proposed development would be located in the Santa Monica Mountains/Malibu area, an area that is generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to the Santa Monica Mountains/Malibu area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Even beachfront properties have been subject to wildfires. Finally, beachfront sites are subject to flooding and erosion from storm waves.

The proposed project includes the construction of a new concrete seawall and alternative septic to replace a previously existing wood bulkhead and septic system washed out from under the existing residential structure in 1998.

The applicant has submitted a Coastal Engineering Report dated 4/6/98 and Response to Coastal Engineering Issues dated 12/6/99 by David Weiss Structural Engineer & Associates; a Geotechnical Engineering Update Report dated 1/05/00, and Geotechnical Engineering Investigation Report date 8/11/98 by Coastline Geotechnical Consultants; and an Update Report of Limited Engineering Geologic Investigation dated 1/04/00, and Report of Limited Engineering Geologic Investigation dated 7/31/98 by Pacific Geology Consultants which indicate that the proposed development will serve to

ensure geologic and structural stability on the subject site. The Geotechnical Engineering Investigation Report, date 8/11/98 by Coastline Geotechnical Consultants concludes that:

> *Based on the findings summarized in this report, and provided the recommendations of this report are followed, and the designs, grading and construction are properly and adequately executed, it is our opinion that construction within the building site, including grading, would not be subject to geotechnical hazards from landslides, slippage, or excessive settlement. Further, it is our opinion that the proposed building and anticipated site grading would not adversely effect the stability of the site, or adjacent properties, with the same provisos listed above.*

Furthermore, the Report of Limited Engineering Geologic Investigation, dated 7/31/98 by Pacific Geology Consultants states:

> *Providing the recommendations contained in this report, in addition to those of the Geotechnical Engineer are followed, the bulkhead will be safe from landslide hazard, settlement and slippage. In addition, the proposed construction will not adversely affect off-site properties from a geological standpoint. All specific elements of the City of Malibu Building Code shall be followed in conjunction with design and future construction work.*

The Coastal Engineering Report dated 4/6/98 and Response to Coastal Engineering Issues 12/6/99 by David Weiss Structural Engineer & Associates; Geotechnical Engineering Update Report, dated 1/05/00, and Geotechnical Engineering Investigation Report, dated 8/11/98 by Coastline Geotechnical Consultants; and the Update Report of Limited Engineering Geologic Investigation, dated 1/04/00, and Report of Limited Engineering Geologic Investigation, dated 7/31/98 by Pacific Geology Consultants include a number of geotechnical and engineering recommendations to ensure the stability and geotechnical safety of the site. To ensure that the recommendations of the geotechnical, geologic, and coastal engineering consultants are incorporated into all proposed development, **Special Condition 1** requires the applicant to submit project plans certified by the consultants as conforming to all recommendations to ensure structural and site stability. The final plans approved by the consultants shall be in substantial conformance with the plans approved by the Commission. Any substantial changes to the proposed development approved by the Commission which may be recommended by the consultants shall require an amendment to the permit or a new coastal permit.

As discussed above, the applicant's engineering consultants have indicated that the proposed development will serve to ensure relative geologic and structural stability on the subject site. However, the Commission also notes that the Coastal Engineering Report dated 4/6/98 by David C. Weiss Structural Engineer & Associates states:

> *The owner should realize that there would always be certain risks associated with living on the beach. The results and recommendations set forth in this report meet current County of Los Angeles and City of Malibu Building Department standards. Because of the unpredictability of the ocean environment, these results are meant to minimize storm wave damage and not to eliminate them.*

As indicated by the applicant's coastal engineering consultant in the above statement, the proposed development is located on a beachfront lot in the City of Malibu and will be subject to some inherent potential hazards. The Malibu coast has historically been subject to substantial damage as the result of storm and flood occurrences--most recently, and perhaps most dramatically, during the 1998 severe El Nino winter storm season. As is evident by the damage caused to the previously existing bulkhead and septic system, the subject site is clearly susceptible to flooding and/or wave damage from storm waves, storm surges and high tides. Past occurrences have caused property damage resulting in public costs through emergency responses and low-interest, publicly-subsidized reconstruction loans in the millions of dollars in Malibu area alone from last year's storms.

In the winter of 1977-1978, storm-triggered mudslides and landslides caused extensive damage along the Malibu coast. According to the National Research Council, damage to Malibu beaches, seawalls, and other structures during that season caused damages of as much as almost $5 million to private property alone.

The El Nino storms recorded in 1982-1983 combined high tides of over 7 feet, with storm waves of up to 15 feet. These storms caused over $12.8 million to structures in Los Angeles County, many located in Malibu. The severity of the 1982-1983 El Nino storm events are often used to illustrate the extreme storm event potential of the California, and in particular, Malibu coast. The 1998 El Nino storms also resulted in widespread damage to residences, public facilities and infrastructure along the Malibu Coast.

Thus, ample evidence exists that all beachfront development in the Malibu area is subject to an unusually high degree of risk due to storm waves and surges, high surf conditions, erosion, and flooding. The proposed development will continue to be subject to the high degree of risk posed by the hazards of oceanfront development in the future. The Coastal Act recognizes that development, even as designed and constructed to incorporate all recommendations of the consulting geology and coastal engineers, may still involve the taking of some 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 the subject property.

The Commission finds that due to the possibility of liquefaction, storm waves, surges, erosion, landslide, flooding, and wildfire, the applicant shall assume these risks as conditions of approval. Because this risk of harm cannot be completely eliminated, the Commission requires 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 5,** 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 that may adversely affect the stability or safety of the proposed development.

The Commission further notes that construction activity on a sandy beach, such as the proposed project, will result in the potential generation of debris and or presence of equipment and materials that could be subject to tidal action. The presence of construction equipment, building materials, and excavated materials on the subject site could pose hazards to beachgoers or swimmers if construction site materials were discharged into the marine environment or left inappropriately/unsafely exposed on the project site. In addition, such discharge to the marine environment would result in adverse effects to offshore habitat from increased turbidity caused by erosion and siltation of coastal waters. Further, any excavated materials that are placed in stockpiles are subject to increased erosion. Therefore, **Special Condition 2** requires the applicant to ensure that stockpiling of dirt or materials shall not occur on the beach, that no machinery will be allowed in the intertidal zone at any time, all debris resulting from the construction period is promptly removed from the sandy beach area, all grading shall be properly covered, and that sand bags and/or ditches shall be used to prevent runoff and siltation.

The Commission finds, for the reasons set forth above, that the proposed development, as conditioned, is consistent with Section 30253 of the Coastal Act.

D. 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:

> ***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, public access from the nearest public roadway 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.***

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

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

Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided, including use of dry sand and rocky coastal beaches, 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 except where it would be inconsistent with public safety, military security needs, protection of fragile coastal resources and agriculture, or where adequate access exists nearby.

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 and has required design changes in other projects on the coast to reduce interference with access to and along the shoreline.

The major access issue in this permit application is the potential adverse impacts of the proposed shoreline protection device on coastal processes, shoreline sand supply, and public access in contradiction of Coastal Act policies 30210, 30211 and 30212. The proposed project is located on Puerco Beach, approximately 774 ft. west (upcoast) of a vertical public coastal accessway (Exhibit 6). Further, there are several lateral public access easements located up and down the coast on beachfront parcels along Malibu Road (Exhibit 6).

The State owns tidelands, which are those lands located seaward of 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 relative 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 in which the profile changes as a result of wave action, the location at which the elevation of the 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.

The Commission must consider a project's direct and indirect effect 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. In the case of the proposed project, the State Lands Commission presently does not assert a claim that the project intrudes onto sovereign lands (Exhibit 7). However, structures currently located above the mean high tide line may have an adverse effect 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 the project will have indirect effects on public ownership and public use of shorelands. As discussed in detail in Section B. Shoreline Protective Devices, there is substantial evidence indicating that the proposed seawall will be subject to wave action which will result in adverse impacts on the shoreline processes and sand supply that maintain the beach at the subject site. Therefore the proposed seawall will have both an individual and, combined with the numerous existing shoreline protective devices, cumulative adverse impact on public use of tidelands.

Public use rights of the beach 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 shoreline structures are of concern.

The proposed project involves construction of a 50 ft. long concrete seawall that will have a number of adverse effects on the dynamic shoreline and the public's beach ownership interests. As described in detail above, the proposed shoreline protective device will individually and cumulatively affect public access by causing accelerated and increased erosion on the adjacent public beach. Adverse impacts resulting from shoreline protective devices may not become clear until such devices are constructed individually along a shoreline and they eventually affect the profile of an entire beach. Changes in the shoreline profile, particularly changes in the slope of the profile, caused by increased beach scour, erosion and a reduced beach width, alters usable beach 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 physical area of public property available for public beach use. Additionally, through the progressive loss of sand caused by increased scour and erosion, shore material is no longer available to nourish the beach and seasonal beach accretion occurs at a much slower rate. As the natural process of beach accretion slows the beach fails to establish a sufficient beach width, which normally functions as a buffer area absorbing wave energy. The lack of an effective beach width can allow such high wave energy on the shoreline that beach material may be further eroded by wave action and lost far offshore where it is no longer available to nourish the beach. The effect of this on public access along the beach is again a loss of beach area between the mean high water line and the actual water. Furthermore, if not sited landward in a location that insures that the seawall is only acted upon during severe storm events, the seawall will experience frequent wave interaction and cause accelerated beach scour during the winter season when there is less beach area to dissipate wave energy.

Shoreline protection devices also directly interfere with public access to tidelands by impeding the ambulatory nature of the mean high tide line (the boundary between public and private lands) during high tide and severe storm events, and potentially throughout the entire winter season. The impact of a shoreline protective device on public access is most evident on a narrow and eroding beach where wave run-up and the mean high tide line are more frequently observed in an extreme landward position during storm events and the winter season. As the shoreline retreats landward due to the natural process of erosion, the boundary between public and private land also retreats landward. Construction of rock revetments and seawalls to protect private property fixes a boundary on the beach and prevents any current or future migration of the shoreline and mean high tide line landward, thus eliminating the distance between the high water mark and low water mark. As the distance between the high water mark and low water mark becomes obsolete the seawall effectively eliminates lateral access opportunities along the beach as the entire area below the fixed high tideline is

inundated. The ultimate result of a fixed tideline boundary which would normally migrate and retreat landward, while maintaining a passable distance between the high water mark and low water mark overtime, is a reallocation of tideland ownership from the public to the private property owner.

The Commission must also consider whether a project affects any public right to use shorelands that exist independently of the public's ownership of tidelands. In addition to a new development's effects 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, (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 the case of the proposed project, the State Lands Commission presently does not assert claims that the project would extend into an area that is subject to the public trust easement in navigable waters. Additionally, the extent of historic public use of the subject beach has not been established, therefore, staff currently has no substantiating evidence that the public has use rights acquired under the doctrine of implied dedication. It should be noted, however, that Puerco Beach has some degree of historic public use by both members of the public who do not live along Malibu Road, as well as local residents. The public readily has access to this section of beach via a dedicated vertical public accessway located 774 ft. east of the subject site, in addition to approximately five other vertical access easements providing access from Malibu Road to Puerco Beach and the adjacent downcoast Amarillo Beach (Exhibit 6). Numerous lateral access easements also exist along the shoreline of Puerco Beach and Amarillo Beach (Exhibit 6). Observations by Commission Staff over the past two decades, in addition to the presence of signs posted on many of the beachfront residences indicating that the beach is a "private" beach, provide evidence of substantial public use of the public trust lands along Puerco Beach. Thus, the Commission finds that the public's ability to achieve continued access on the subject beach must be protected consistent with the requirements of applicable policies of the Coastal Act.

The beaches of Malibu are extensively used by both local and non-local visitors. Most planning and demographic studies indicate that attendance of recreational sites in Southern California 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 public access rights by assuring that any proposed shoreline development does not interfere with those rights. In the case of the proposed project, there is a potential for the permanent loss of sandy beach used by the public as a result of a change in the beach profile, or

steepening of the beach, from scour effects and erosion caused by construction of the seawall at the site.

In past permit actions, the Commission has required that new shoreline protection devices be located as landward as possible to reduce the identified adverse impacts to shoreline processes, sand supply and public access described above. In the case of this project, the new seawall and septic system will be located as far landward as possible thus reducing the impacts of the wall. However, Puerco Beach is a narrow, eroding beach and the seawall will be subject to inevitable seasonal wave action. Therefore, despite the most landward feasible setback of the proposed project, adverse impacts on coastal resources and public access along the subject beach will nevertheless be caused by the proposed seawall.

In addition to the adverse impacts of the proposed seawall which can not be totally avoided given it's location in an area subject to wave action, any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protection device, thereby subjecting the wall to increased wave action, would result in increased adverse effects to coastal processes, shoreline sand supply and public beach access. Therefore, to ensure that the proposed project does not result in new future adverse effects on public access, **Special Condition 5** requires the applicant to record a deed restriction that would prohibit any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device if such activity extends the seaward footprint of the subject shoreline protective device.

The Commission finds that to ensure that the proposed project does not result in new unnecessary future adverse effects to shoreline sand supply and public access and that future impacts are reduced or eliminated, **Special Condition 6** is necessary. This condition requires the applicant to obtain a new coastal development permit for the shoreline protective device if the proposed septic system is replaced or abandoned for any reason (including the installation of a new sewer system along Malibu Road), and that if a new coastal development permit for the shoreline protective device is not obtained the shoreline protective device will be removed. The Commission finds that implementation of Special Condition 6 will ensure that the Commission will have the ability to review any proposed changes to the septic system which might allow the seawall authorized by this permit to be located further landward or to be completely removed from the site, for consistency with the public access policies of the Coastal Act.

Finally, in past permit actions, the Commission has required that development on a beach, including the construction of shoreline protection devices, provide for lateral public access along the beach in order to mitigate the adverse effects of the protective device resulting in loss of beach area available for public use. The Commission finds that construction of the seawall will result in adverse impacts on public beach access for the reasons discussed above, and the proposed project will be consistent with the

public access policies of the Coastal Act only if the project is conditioned to mitigate the unavoidable adverse impacts of the seawall on beach area available for public use. As such, **Special Condition 3** requires the applicant to provide a lateral public access easement along the entire southern portion of the lot, as measured from the dripline of the proposed deck seaward to the ambulatory mean high tideline, prior to the issuance of the coastal development permit. The lateral public access easement accurately describes the ambulatory nature of the easement's width in relation to the mean high tide line and will be consistent with other lateral access easements which have been recorded on properties along Puerco Beach and the Malibu area.

As mentioned previously, many homes along this section of beach post signage which indicates that at least a portion of the beach is "private". A majority of the signs indicate that the subject beach is private property up to the mean high tide line, which the signs then define a certain distance from the structure to the sea. No legal verification of the accuracy of the signs is available. Chronic unauthorized postings of signs illegally attempting to limit, or erroneously noticing restrictions on, public access have occurred on many beachfront private properties in the Malibu area. These signs have an adverse effect on the ability of the public to access public trust lands as well as existing lateral access easements. The Commission has determined, therefore, that to ensure that applicants clearly understand that such postings are not permitted without a separate coastal development permit, it is necessary to impose **Special Condition 4** to ensure that similar signs are not posted on or near the proposed project site. The Commission finds that when implemented, Special Condition 4 will protect the public's right of access to the sandy beach below the mean high tise line, as well as access to several lateral access easements recorded along the beach.

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

E. <u>Visual Resources</u>

Section 30251 of the Coastal Act requires public views to and along the ocean and scenic coastal areas to be considered and protected.

> ***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.***

The proposed project involves replacement of a previously existing septic system and wood bulkhead that were washed out in 1998 with a new alternative septic system and concrete seawall. Though the proposed seawall will be a larger structure than the wood bulkhead originally constructed at the site, all proposed development will be located under the existing residential structure at the site. Therefore, the proposed project will not result in the seaward encroachment of development on the beach which could potentially obstruct public views along the shoreline. Therefore, the proposed project will not result in adverse impacts on public scenic views to and along the beach. As such, the Commission finds that the project, as conditioned, has no significant impact on public views and is consistent with Section 30251 of the Coastal Act.

F. Water Quality

The Commission recognizes that new development in the Santa Monica Mountains and Malibu has the potential to adversely impact coastal water quality through the removal of native vegetation, increase of impervious surfaces, increase of runoff, erosion, and sedimentation, and introduction of pollutants such as petroleum, cleaning products, pesticides, and other pollutant sources, as well as effluent from septic systems. **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 buffer areas that protect riparian habitats, minimizing alteration of natural streams.***

As described, the proposed project includes the installation of a new alternative sewage treatment and disposal system and construction of new concrete seawall to protect the septic system from wave damage and washout.

The proposed development does not include the construction of new structures that would result in an increase in impervious surface at the site. As such, the proposed project will not affect the infiltrative function and capacity of existing permeable land and beach on site. Therefore the Commission finds that the proposed project will not result in increased run-off into the marine environment associated with residential use.

The proposed alternative method of sewage disposal is an upgraded septic system with secondary treatment that will be installed consistent with the Uniform Plumbing Code and with the approval of the City of Malibu Environmental Health Specialist 2/09/01. The Commission has found in past permit actions that use of alternative methods of sewage disposal utilizing a secondary treatment method and specifically designed for beachfront development is protective of marine resources and water quality. The Commission also notes that the proposed septic system's compliance with the health

and safety codes will minimize any potential for wastewater discharge that could adversely impact coastal waters. Therefore, the Commission finds that, as conditioned, the proposed development will be designed to minimize adverse impacts to coastal resources in a manner consistent with coastal water quality protection, and the project is therefore consistent with Section 30231 of the Coastal Act.

G. Local Coastal Program

Section 30604 of the Coastal Act states:

> ***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 development 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 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 of Malibu'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).

H. 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 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 effect that 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 proposed project, as conditioned, has been adequately mitigated and is determined to be consistent with CEQA and the policies of the Coastal Act.

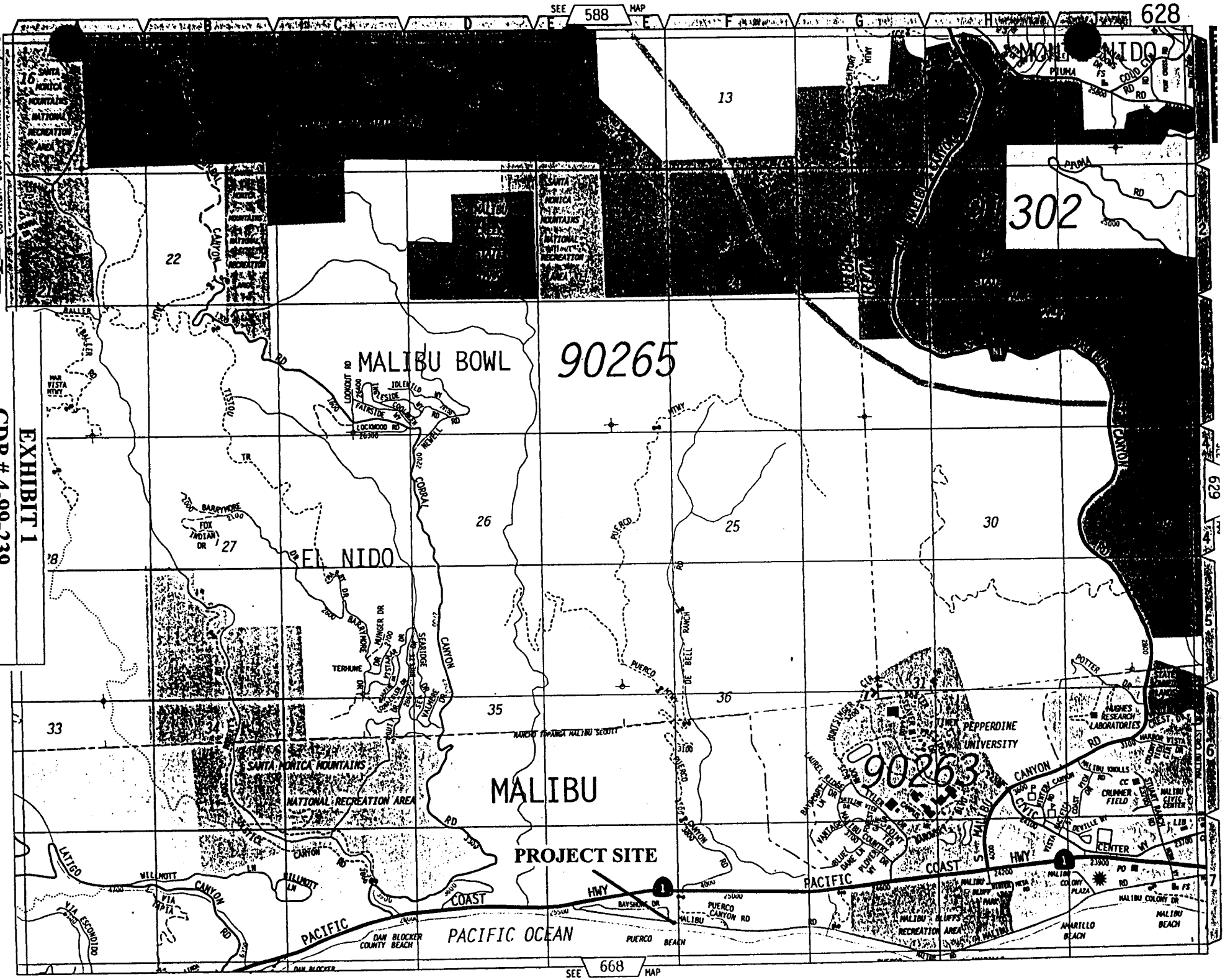

EXHIBIT 1
CDP # 4-99-239
Vicinity Map

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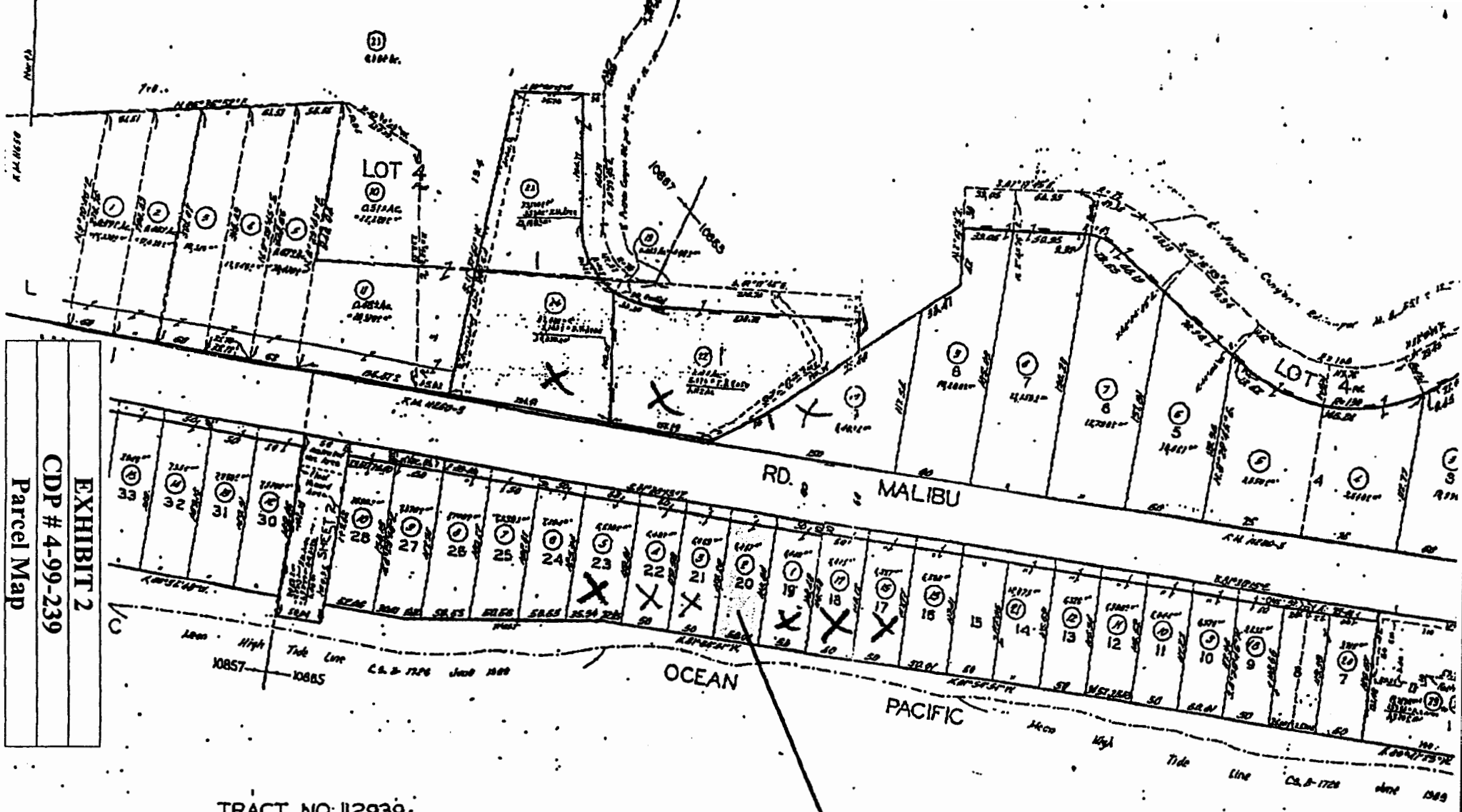


EXHIBIT 2
CDP # 4-99-239
Parcel Map

TRACT NO. 12939
M. B. 253-39-40
CONDOMINIUM
PARCEL MAP
P.M. 189-48-49

SEE: 482-253 & 254

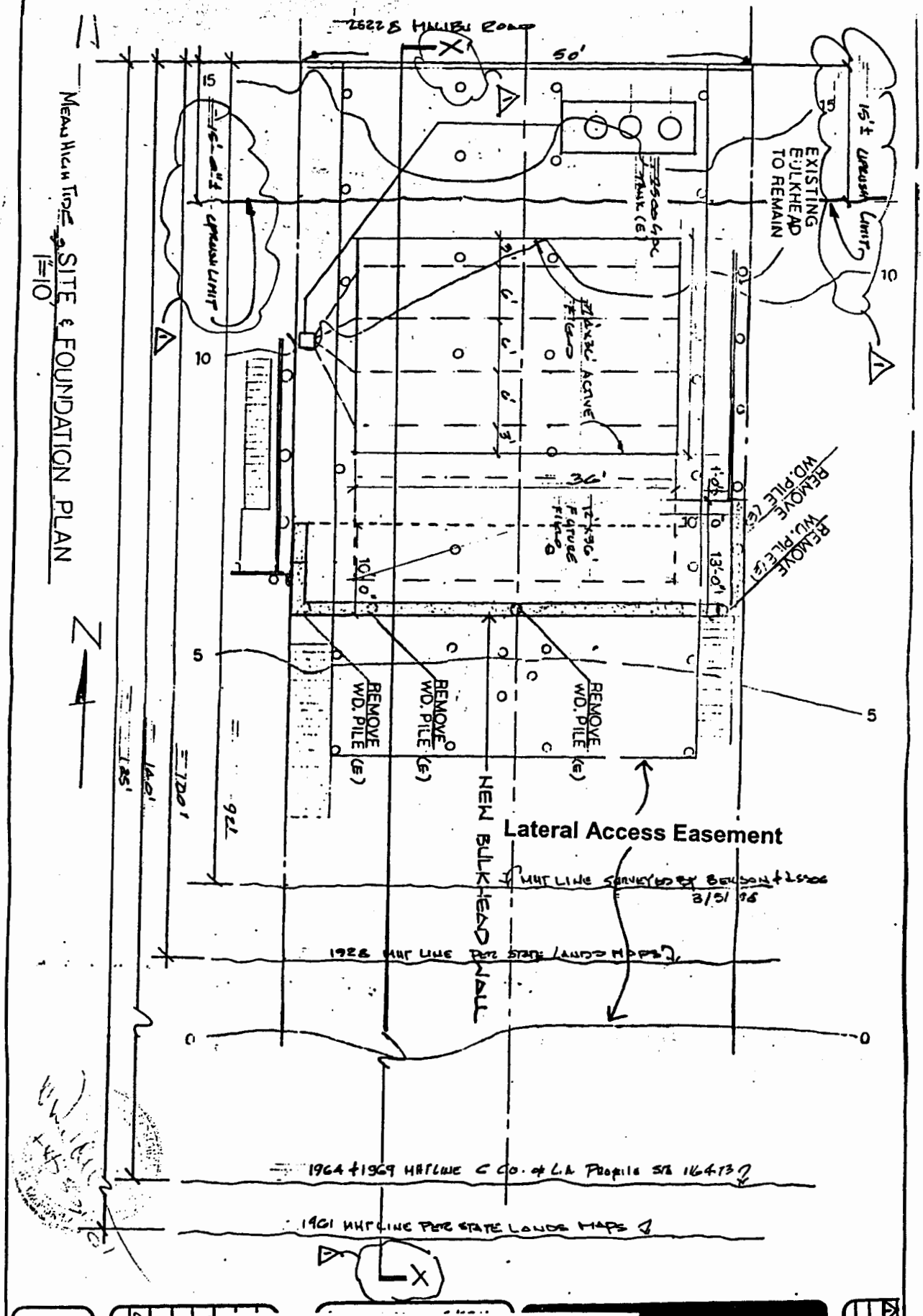
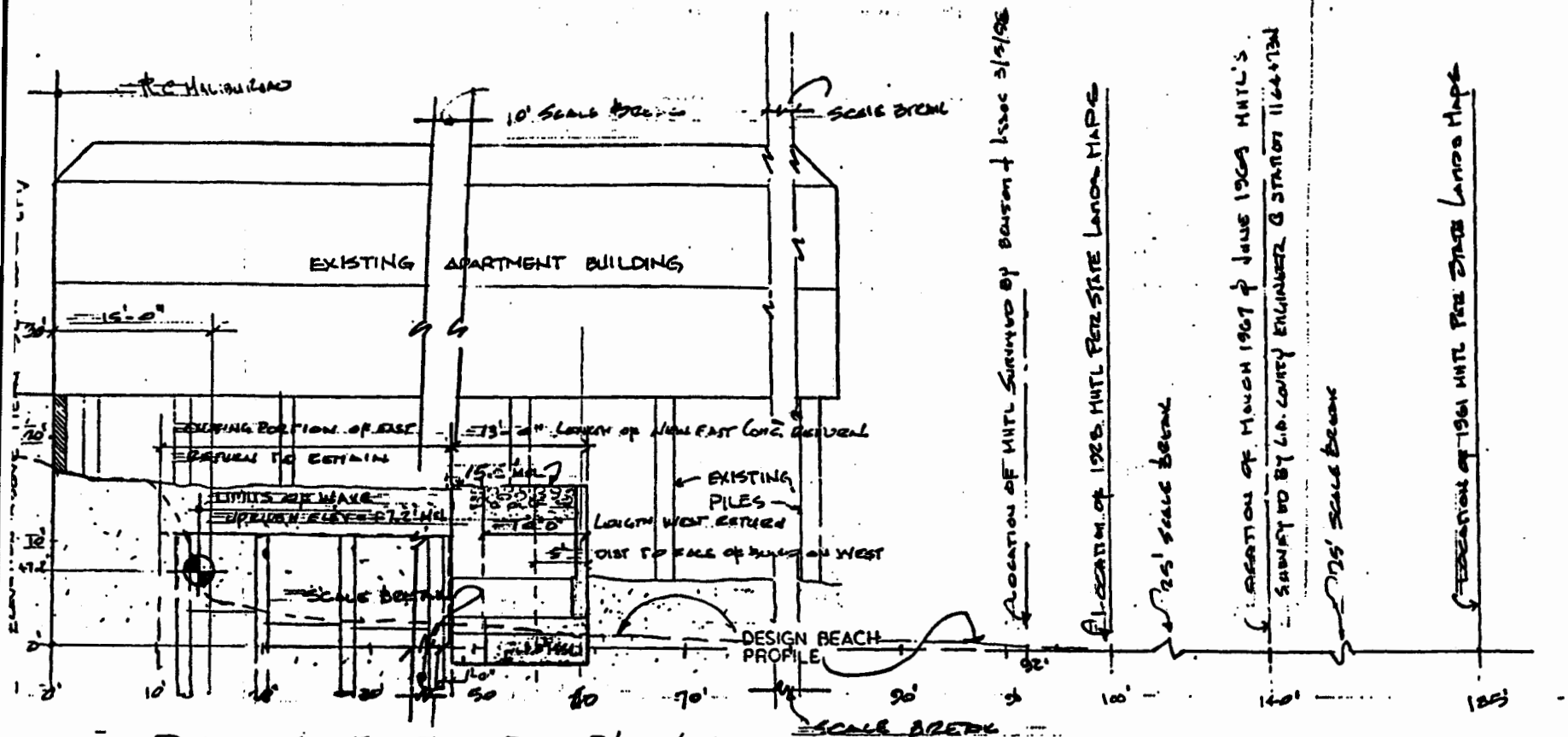


EXHIBIT 3

CDP # 4-99-239

Site Plan



DISTANCE IN FEET FROM MALIBU ROAD R/W LINE

SCALE: H & V 1" = 10'

SECTION (PROFILE) X - X

EXHIBIT 4

CDP # 4-99-239

Section

DCW

2/18/00

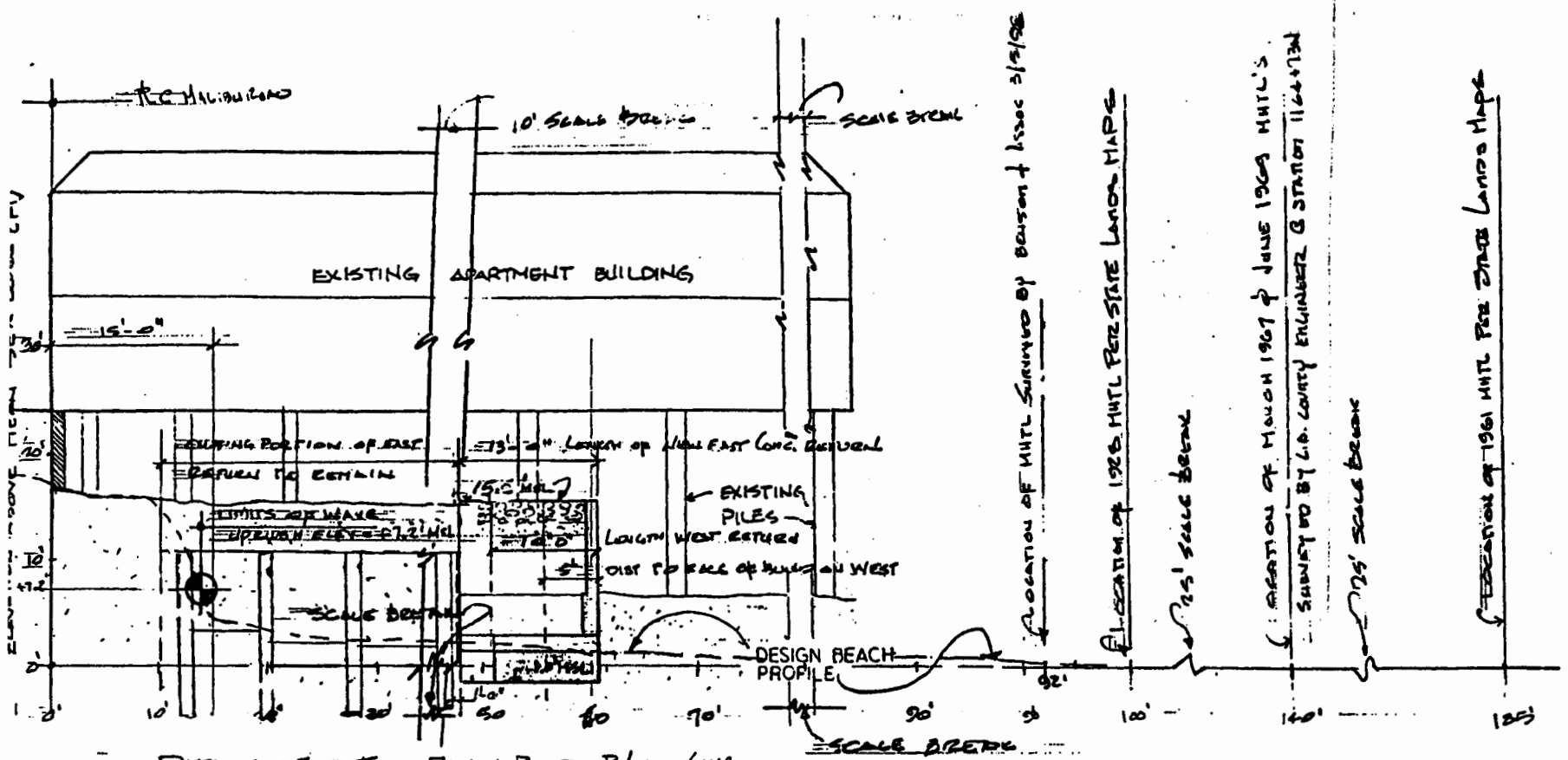
GORIO.198

GORIO

SHEET NO.

2

2



DISTANCE IN FEET FROM MALIBU ROAD R/W LINE

SCALE: H & V 1" = 10'

SECTION (PROFILE) X - X

EXHIBIT 4

CDP # 4-99-239

Section

DCW

2/18/00

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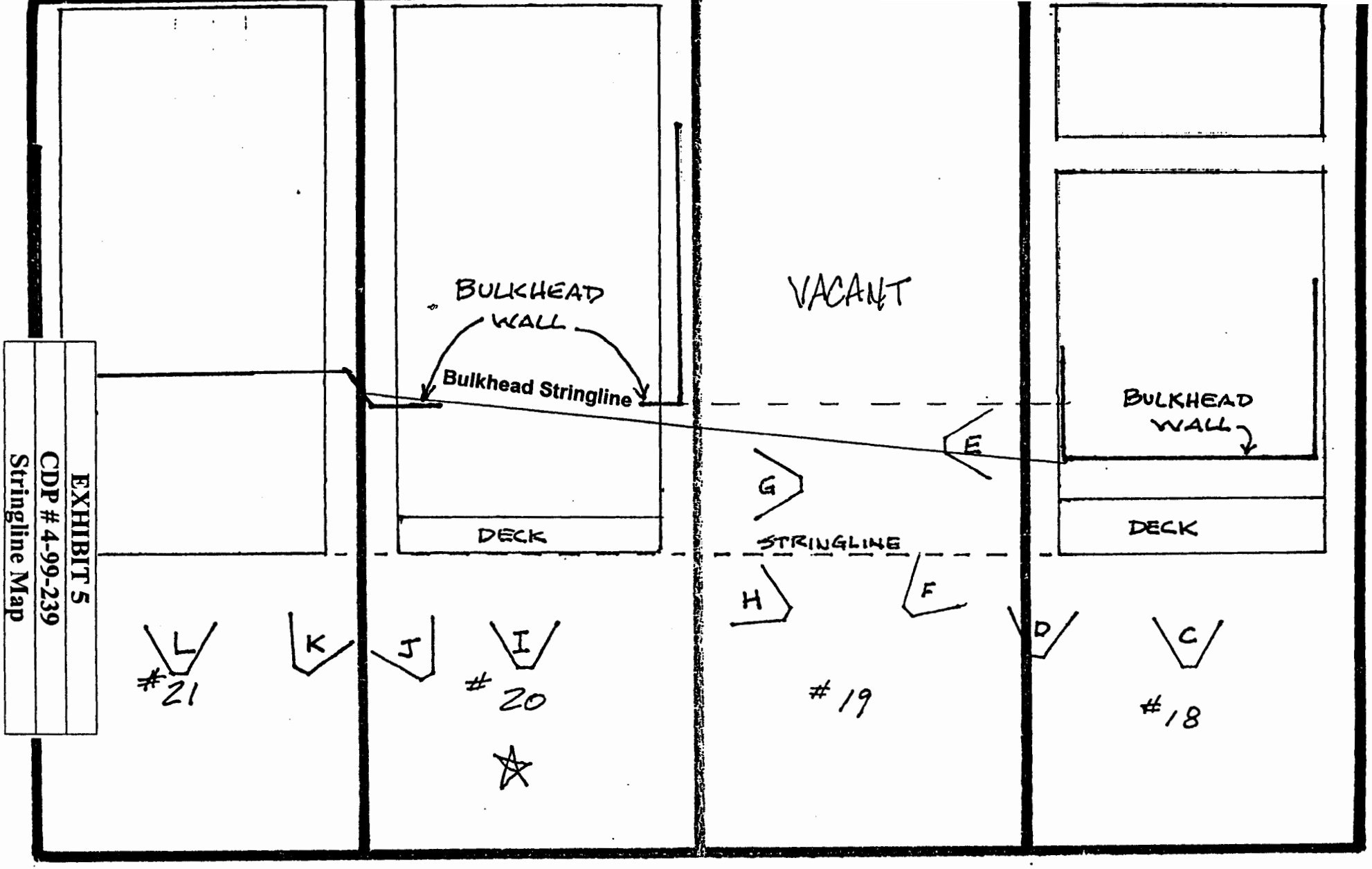
SHEET NO.: 2 OF 2



STRINGLINE MAP
for
25228 Malibu Road

Regional Cumulative Assessment Project:
Santa Monica Mountains/Malibu Area
1998

Public Access to and along the Shore
Los Angeles County

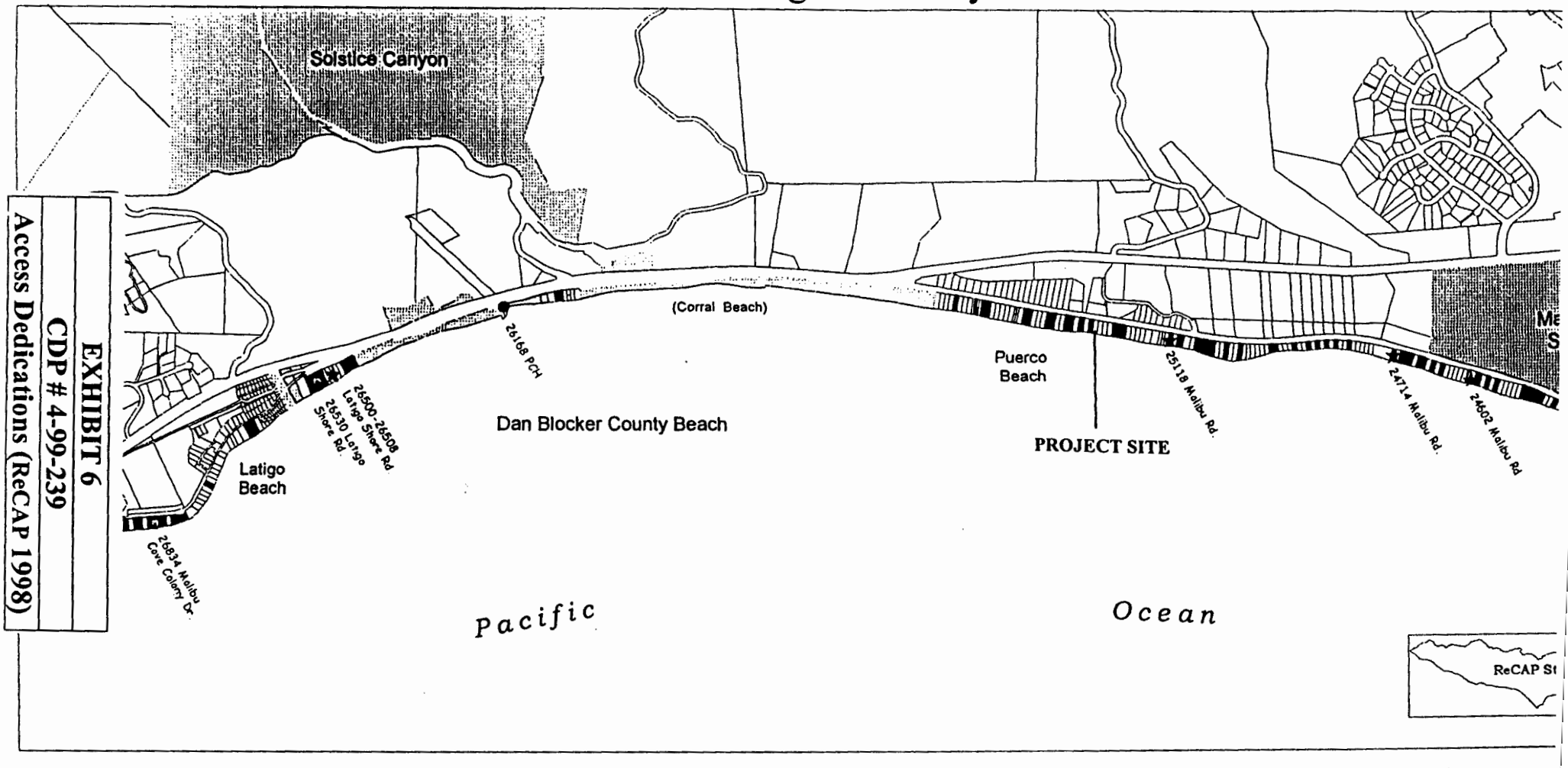


EXHIBIT 6
CDP # 4-99-239
Access Dedications (ReCAP 1998)

● Potential Vertical Accessways
★ Existing Vertical Accessways
Parcels with Lateral Access Dedications
Public Lands (1996)
Private Parcels (1996)

While entire parcels are shaded for illustrative purposes, the OTD easements shown on individual parcels do not extend over the entire parcel.

N W E S

0 2000 4000 Feet

Map Note: The inform
is subject to revision. A
approximate and data h
Attempts have been m
of the data, neverthele

Sources: CCC Access
California Coastal Acc
TRW Experian databa

California Coastal Commission
ReCAP & Technical Services Division

STATE OF CALIFORNIA GRAY DAVIS, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1892
Contact FAX: (916) 574-1925

February 22, 2000 File Ref: SD 00-01-21.7

RECEIVED
MAR 0 - 2000
CALIFORNIA
COASTAL COMMISSION
SOUTH CENTRAL COAST DISTRICT

G. E. Leach
Sol Brothers Investments
10850 Wilshire Blvd., #600
Los Angeles CA 90024

Dear Mr. Leach:

SUBJECT: Coastal Development Project Review for Proposed Bulkhead Replacement at 25228 Malibu Road, Malibu

This is in response to your request 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 project, as we understand them, are these:

You propose to replace an existing timber bulkhead that protects an existing apartment building at 25228 Malibu Road in the Puerco Beach area of Malibu. The existing timber bulkhead, located underneath the building, was partially destroyed during the 1998 winter storms. You propose to remove what is left of the timber bulkhead and replace it with a poured in place concrete bulkhead with return walls in the same location. A rock blanket is proposed to be located behind and along the entire length of the new bulkhead. This is a well-developed stretch of beach with numerous residences both up and down coast, although the immediately adjacent lot to the east is vacant.

We do not at this time have sufficient information to determine whether this project will intrude upon state sovereign lands or interfere with other public rights. Development of information sufficient to make such a determination would be expensive and time-consuming. We do not think such an expenditure of time, effort and money is warranted in this situation, given the limited resources of this agency and the circumstances set forth above. This conclusion is based on the location of the property, the character and history of the adjacent development, and the minimal potential benefit to the public, even if such an inquiry were to reveal the basis for the assertion of public

EXHIBIT 7
CDP # 4-99-239
State Lands Commission Letter

claims and those claims were to be pursued to an ultimate resolution in the state's favor through litigation or otherwise.

Accordingly, the CSLC presently asserts no claims that the project intrudes onto sovereign lands or that it would lie in an area that is subject to the public easement in navigable waters. This conclusion is without prejudice to any future assertion of state ownership or public rights, should circumstances change, or should additional information come to our attention.

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

Sincerely,

Robert L. Lynch, Chief
Division of Land Management

cc: Craig Ewing, City of Malibu