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CALIFORNIA COASTAL COMMISSION

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Staff Report: 1/16/02
Hearing Date: 2/5/02
Commission Action:



APPLICATION NO.: 4-01-144

APPLICANT: Jose Liberman

AGENTS: Don Schmitz, Steve Montoya

PROJECT LOCATION: 31630 Sea Level Drive, Malibu, Los Angeles County.

PROJECT DESCRIPTION: Repair walkway to existing residence and construct a concrete bulkhead wall with 144 cubic yards of grading.

Lot Area:	5,760 sq. ft.
Building Coverage:	3,200 sq. ft.
Paved Area:	400 sq. ft.
Wall Height Above Mean Sea Level:	23 ft.
Wall Height Above Beach Profile:	17 ft.

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends **approval** of the proposed project with Five Special Conditions regarding: 1) provisional term for shoreline protective structure, 2) assumption of risk/shoreline protection, 3) construction responsibilities and debris removal, 4) color deed restriction, and 5) sign restriction.

The applicant proposes to construct a concrete bulkhead at the base of an existing bluff to protect an existing septic system, concrete walkway, driveway and access road to an existing single family residence. The applicants are also proposing to repair the existing walkway to this residence's front door. These developments are located on the landward portion of the subject lot which consists of two lots effectively joined together to create a sixty foot wide lot located immediately seaward of Sea Level Drive. The proposed bulkhead will be attached to the applicant's residence on the west and the residence located to the east across the eastern half of a twenty-foot wide vacant lot now effectively joined to the western half of this lot (lot 125) where the existing residence is located. The existing residence includes a basement/garage constructed on concrete caissons with a below grade retaining wall below the basement/garage level located at the landward portion of the residence where the driveway leads to the garage from the top of this bluff. The subject lot (west and east half) includes a 1989 recorded offer to dedicate lateral public access along the beach. The project, as conditioned below, is consistent with all applicable Chapter Three Policies of the Coastal Act.

LOCAL APPROVALS RECEIVED: City of Malibu, Planning Department, Approval in Concept, May 23, 2001; City of Malibu, Environmental Health Department, Approval in Concept, August 31, 1998.

SUBSTANTIVE FILE DOCUMENTS: Coastal Engineering Report, Updated Coastal Engineering Report, Response to California Coastal Commission Inquires for Proposed Seawall, Proposed Seawall, Lieberman Residence by David C. Weiss Structural Engineer & Associates, dated February 1, 1988, March 18, 1988, December 22, 1998, April 4, 2001, September 11, 2001 and January 4, 2002; Coastal Engineering Report for the Proposed Home at 31630 Sea Level Drive by John Hale, Coastal Engineering, Inc. dated May 6, 1988; Coastal Engineering / Wave Study Report and Letter to Norm Haynie, subject Lieberman Residence, by David Weiss, dated May 21, 1986 and February 1, 1988; California State Lands Commission letter dated March 27, 2001; Certified Malibu Santa Monica Mountains Land Use Plan, Coastal Development Permit No. 5-89-012 and 012-A (Lieberman); Coastal Permit No. 4-00-177, (Sosa); Coastal Permit No. 4-00-134 (Scharps); Application No. 4-99-112 (Malibu Encinal HOA & Wilsons); United States Army Corps of Engineers 1994 Reconnaissance Report for Malibu/Los Angeles County coastline.

I. STAFF RECOMMENDATION

MOTION: *I move that the Commission approve Coastal Development Permit No. 4-01-144 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. **Provisional Term for Shoreline Protective Structure**

- A. Coastal Development Permit No. 4-01-144, in full or in part, authorizes the construction of a shoreline protective device generally depicted in Exhibit Four. By acceptance of this permit, the applicant acknowledges that the purpose of the subject shoreline protective device is solely to protect the existing septic system, walkway, driveway and Sea Level Drive located on the site or adjacent to it, in their present condition and locations. If any of the activities listed below are undertaken, a new coastal permit for the shoreline protective device authorized by Coastal Development Permit 4-01-144 shall be required unless the Executive Director determines that a new permit is unnecessary because such activities are minor in nature or otherwise do not affect the need for the shoreline protective device.
 1. Changes to the foundation of any structure on the subject site located landward of the subject shoreline protective structure authorized herein, such as repairs or replacement of the residence foundation, driveway and walkway to the residence front door;
 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 or residence or garage on the subject parcel;
5. Relocation and/or complete or partial 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

2. Assumption of Risk/Shoreline Protection

- 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 and flooding.
 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 4-01-144 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.

3. Construction Responsibilities and Debris Removal

The applicant shall, by accepting this permit, agree: a) that no stockpiling of dirt 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.

4. Color Deed Restriction

- A. Prior to the issuance of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a color palette and material specifications for the outer surface of the concrete bulkhead and wall, authorized by the approval of coastal development permit number 4-01-144. The palette sample shall be presented in a format not to exceed 8½" X 11" X ½" in size. The palette shall include the colors proposed for the exterior surfaces of the concrete bulkhead and wall as authorized by this permit. Acceptable colors shall be limited to colors compatible with the surrounding environment (earthen bluff tones) including shades of brown with no white or light shades.

The approved structures shall be colored with only the color authorized pursuant to this special condition. Alternative colors or materials for future repainting or resurfacing may only be applied to the bulkhead and wall authorized by coastal

development permit number 4-01-144 if such changes are specifically authorized by the Executive Director as complying with this special condition.

- 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, which reflects the restrictions stated above on the proposed development. The document shall run with the land for the life of the structure approved in this permit, binding all successors and assigns, and shall be recorded free of prior liens and encumbrances 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.

5. **Sign Restriction**

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.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. **Project Description and Background**

The applicant proposes to construct a concrete bulkhead at the base of an existing low bluff to protect an existing septic system, concrete walkway and driveway to an existing single family residence (Exhibits 3 – 7). The applicant is also proposing to repair the existing walkway to this residence's front door. These developments are located on the landward portion of the subject lot (Lot # 125) which consists of two lots, one western the other eastern lot, in effect, joined together to create a sixty foot wide lot located immediately seaward of Sea Level Drive. The proposed bulkhead will be attached to the applicant's residence on the west and the adjoining property owners on the east across the eastern twenty-five foot wide vacant lot adjoining the western lot adjoining lot.

The project site is located on a beachfront parcel of land approximately 5,760 sq. ft. in size seaward of Sea Level Drive (Exhibits 1 & 2), west of Lechuza Point within a private locked gate community. The existing residence includes a basement constructed on concrete caissons with a below grade retaining wall located below the basement/garage level and at the landward portion of the residence where the driveway leads to the garage/basement on the top of this seventeen (17) foot high bluff. The garage and basement are a split level design. The subject lot includes a 1989 recorded offer to dedicate lateral public access along the beach width of this property from the mean high tide to the seaward edge of the residence and decks. The proposed bulkhead will not result in the seaward encroachment of development as it is located near the landward portion of the residence.

The Commission notes that the subject site has been subject to past Commission actions. The Commission denied a proposed residence on this site in 1976 under the California Coastal Zone and Conservation Act (Proposition 20) (Application No. P-75-5160, Ehringer) due to concerns over wave hazards and public acquisition of the site. The Commission denied an application to construct a residence with a leachfield under the residence with a protective bulkhead on the subject site in 1986 (Application No. 5-86-412). In 1986, the Commission found that the project site was "located on a beach in an extremely hazardous area subject to wave damage and erosion" and that proposed bulkhead would adversely impact the beach profile and adjacent properties. The Commission's staff report also noted that waves had previously damaged other structures nearby as well as Sea Level Drive west of the subject site. The applicants acquired the adjoining vacant lot, (now part of the subject lot) and in 1988 proposed to install seepage pits and a septic tank adjacent to Sea Level Drive. No shoreline protective device was proposed in that application (Application No. 5-87-1028); this application was denied by the Commission in 1988. The applicant submitted a third application to construct the residence in 1989. This application (No. 5-89-012) was approved in 1989 for the construction of the residence, with the septic tank and pits located along Sea Level Drive protected by a stabilizing wall located within the bluff on the vacant lot located immediately east of the lot with the residence. The applicant subsequently submitted an amendment to this approved coastal permit (No. 5-89-012-A) to relocate the septic system to the western lot beneath the driveway to the residence and delete the approved stabilizing wall from the project plans. This amendment was approved in 1990 by the Commission and the residence and septic system subsequently constructed. A review of this amendment file indicates there was a dispute between the subject property owner and the recreational easement or covenant holder regarding the potential to develop the eastern half or the vacant portion of the subject lot. Staff requested the applicant to clarify this issue. In response, the applicant provided a letter received January 8, 2002. This letter confirms that the covenant does not prohibit the construction of any above ground structure such as the bulkhead (Exhibit 8).

The applicant initially submitted an application (No. 4-00-113) in May 2000 for a similar bulkhead across the vacant portion of the subject lot in the same location but also included extending this bulkhead to surround the residence's basement on the west, south and east side. This application was determined to be incomplete and eventually returned in December 2000 as requested information was not provided in a timely manner. In addition, staff suggested in late 2000 that the applicant consider an alternative that did not include a bulkhead surrounding the basement, since the basement and the remainder of the residence is constructed on concrete caissons and a grade beam foundation. The applicant submitted this subject application in July 2001 for a scaled down alternative proposing only the subject concrete bulkhead and a repair of the existing walkway to the front door of the residence.

In addition, the applicants have submitted two separate applications for emergency coastal permits, both of which have been denied by the Executive Director as they did not qualify for an emergency permit. The first application (No. 4-99-021-G) submitted in

February 1999) proposed the same bulkhead wall surrounding the basement and located at the base of the bluff as proposed in the application (No. 4-00-113) submitted in May 2000. This emergency permit application was denied in February 1999 by the Executive Director. The applicants also submitted on November 16, 2001 an application (No. 4-01-212-G) for an emergency coastal permit for the scaled down bulkhead which is the same project as the proposed in this application. After the receipt and review of staff requested supplemental material, this second application for an emergency permit was denied by the Executive Director on January 16, 2002, as there are alternative feasible temporary measures exist to temporarily protect the bluff from erosion.

The applicant has submitted evidence of review of the proposed project by the California State Lands Commission (CSLC), which indicates that the CSLC determined that it does not appear that the project will intrude into an area that is subject to the public easement in navigable waters. The CSLC' conclusion was made without prejudice to any future assertion of state ownership or public rights, should circumstances change, or should additional information come to their attention.

B. Hazards and Shoreline Processes

Section 30235 of the Coastal Act states:

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

Finally, Section 30253 of the Coastal Act states in 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 project site is located on a beachfront parcel in Malibu, an area that is generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to the Malibu/Santa Monica Mountains 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, shoreline areas, such as the project site, are subject to flooding and erosion from storm waves.

The applicant proposes to construct a concrete bulkhead at the base of an existing seventeen (17) foot high bluff to protect an existing septic system, concrete walkway

and driveway to a single family residence. The applicants are also proposing to repair the existing walkway to this residence's front door. These developments are located on the landward portion of the subject lot which consists of two adjacent lots effectively joined together as a sixty-foot wide lot located immediately seaward of Sea Level Drive. The proposed bulkhead will be attached to the applicant's residence on the west and the existing residence located to the east across a twenty-foot wide vacant lot.

A review of the Coastal Permit Nos. 5-89-012 and 012A indicates that no seawall or bulkhead was required to protect either the then proposed residence or the sewage disposal system. The Coastal Engineering Report (Exhibit 9) for the Proposed Home at 31360 Sea Level Drive, Malibu, CA dated May 6, 1988 by John Hale, Coastal Engineering, Inc. concludes that:

The building or the sewage disposal system to be constructed will not wash away during the life of the building.

Further, a review of this Coastal Engineering Report (Exhibit 10) dated February 1, 1988 by David Weiss, Structural Engineer & Associates, Inc. concludes that:

Based on the dimensions shown on this plan, the proposed system appears to be within seventeen ft. (17') of the right-of-way line and under these conditions, no bulkhead is required for the protection of the sewage disposal system.

The proposed structure shall be supported by a caisson/pile type foundation (see recommendations section of the referenced coastal engineering report), with a minimum finished floor elevation of +22.4 ft. M.S.L. datum. Caissons or piles shall be designed for the wave forces calculated on sheet 3 of 3 of the referenced coastal engineering report in addition to any anticipated structural loads. If these recommendations are complied with, then no seawall/bulkhead will be required for protecting the proposed structure.

A review of a letter regarding the Liberman Residence (Exhibit 11) dated March 18, 1988 by David Weiss, Structural Engineer & Associates, Inc. observes that:

The site visit revealed that the beach had scoured fairly consistent with that which was predicted in the Coastal Engineering/Wave Uprush report of reference number one (1) above. The firmer clayey embankment between the road and the sandy beach appeared to have resisted the scour reasonable well. The plan of development shows the proposed seepage pit for the project to be adjacent to the north property line on Sea Level Drive and therefore, well past the ten foot uprush buffer required by the County of Los Angeles Health Department in order to forgive the requirement of a protective bulkhead. ...

Staff requested that the applicant provide a response to their statements from the consulting coastal engineer for this proposed bulkhead. In response, a letter (Exhibit 12) was received on January 8, 2002 addressing the reasons that a protective device was now needed from David Weiss, Structural Engineer & Associates. This letter states:

- 1. A portion of Sea Level Drive just east of this site washed out in the storms of 1998.***
- 2. A survey of the site made in 1985 places the top of the embankment, on the west side of the subject lot to be approximately forty feet from Sea Level Drive right of way line and approximately twenty-four feet from the right of way line at the center of the empty***

lot on the east side of the subject site. A survey was made in November of 2000 shows the top of the embankment approximately twenty feet from the right of way line at the west side of the subject lot and center of the empty lot to the east to be approximately sixteen feet from the right of way line.

3. *The bar has been raised on us. The standard for wave uprush studies in 1986 was to superimpose the design waves on a Stillwater Line of +6.0' M.L.L.W. The standard for wave uprush studies is now to use a +7.5' M.L.L.W Stillwater line to account for a design tide of 6.0', .5' of storm surge and approximately 1' of sea level rise in the next 100 years due to Polar Ice Cap meltdown. This increase of 1.5' in elevation of the Stillwater line drives the scour profile back approximately thirty-five feet. Therefore, a projective structure is now required.*

In the prior application submitted in May 2000 (No. 4-00-113, which was returned to the applicant in December 2000) proposing a more extensive concrete bulkhead surrounding the basement and vacant portion of the lot, the applicant submitted a Coastal Engineering Report by Dave Weiss Structural Engineer & Associates dated December 22, 1998. In this report for the more extensive concrete bulkhead, Mr. Weiss recommends that:

In the storms of January/February 1998, the embankment between the street right of way line and the beach was scoured back to a point approximately 18' from the edge of the pavement. In order to prevent the onsite sewage disposal system and the roadway from washing away in a future storm of design magnitude, it is proposed to build a vertical wall at the face of the existing vertical scarp. The wall shall extend from the east property line to the east side of the house; thence south along the east side of the house to the south side of the lower level equipment room; thence west along the south side of the equipment room to the west side of the house; then north along the west side of the house to the line of the vertical scarp on the adjacent property to the west.

In this report the applicant's engineer has determined that a shoreline protective device is necessary to prevent further scour of the embankment or bluff in order to protect the existing sewage disposal system and roadway, Sea Level Drive, from washing away in a future storm of design magnitude. Although this Report recommends a bulkhead wall be constructed to surround the basement and go across the vacant portion of the subject lot east of the residence, the applicant has revised the current proposed project to only include a bulkhead wall across the vacant portion of the lot.

The applicant submitted an updated Coastal Engineering Report with the subject application. This Report dated April 4, 2001 addresses the revised project proposing only a concrete bulkhead across the vacant portion of the lot. In this updated Report, Mr. Weiss states:

The problem is scour. The purpose of the proposed wall is to protect the street and the sewage disposal system located in the driveway of the subject site. With each severe ocean storm, wave action eats away at the bottom of the embankment on the south side of Sea Level Drive. As the waves undercut the base of the slope it collapses, and the vertical scarp retreats toward the street. That portion of the east end of Sea Level Drive, as it makes its turn westward just south of the intersection with Point Lechuza Drive washed out in the storms of 1998. This site is only one or two lots west. After a storm, the beach builds up to its normal elevation, but the slope remains in its unstable, vertical retreated position, until the next event drives the slope further toward the street.

A question has been asked, "Where are the return walls?" The proposed wall will abut the walls on the site to the east and extends westward to the eastside of the house on the subject site. Originally, the proposal was to continue the wall south, west and again north around the perimeter of the lower level storage room under the house; however, it is my understanding that the Coastal Commission would not allow that proposal. To date, we have not been able to obtain plans of the house. We are hoping that the north wall of the storage room under the north (garage) end of the house is deep enough to furnish protection for the west flank of the proposed wall. We are very reluctant to propose a return north at the west end of the wall. To construct a return at the west end (i.e., the west terminus of the proposed wall) would require excavating a trench north to the street. It is my concern that once the return is built, all we would have is backfill between the west face of the return wall and the west face of the excavation. If the north wall of the storage room below the garage is not deep enough to protect the embankment, no matter how much one re-compacts the trench backfill, the exposed trench area west of the return would erode much faster under the force of the waves than the natural embankment. This seems to be the best we can do!

In this updated Report, the coastal engineer further identifies that scour is the problem that will erode away the embankment on an episodic basis during severe ocean storms. In addition, the coastal engineer states that he is hoping that the north wall of the storage room is deep enough to furnish protection for the west flank of the proposed wall, as the coastal engineer is reluctant to proposed a return wall at the west end of the proposed wall as a return wall may not be effective.

A review of the approved foundation plans for the construction of the existing residence in Coastal Permit file No. 5-90-012A) indicates that there is a concrete block wall on top of a grade beam located about eleven feet in front of the north wall of the garage (Exhibit 7). This wall and grade beam is located within the bluff to a depth of about the bedrock level of the beach located in 1990 as close as about seven feet from the base of the bluff. In the event the bluff embankment beneath the basement erodes over time, the retaining wall and grade beams may become unsupported and the stability of the basement may become questionable. A future protective device located beneath or seaward of the basement may be needed in the future.

Section 30235 of the Coastal Act allows for the construction of a shoreline protective device when necessary to protect existing development or to protect a coastal dependent use. As mentioned, the proposed project includes the construction of a concrete bulkhead connected to adjoining residential structures, which serves to protect development at the site from wave run-up and scour. The Commission notes that shoreline protective devices constructed on beachfront lots have the potential to individually and cumulatively cause adverse effects to coastal processes, shoreline sand supply, and public access. Shoreline protective devices, 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.

Interference by shoreline protective devices can result in a number of adverse effects on the dynamic shoreline system and the public's beach ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile which results from a reduced beach berm width, alter the usable area under public ownership. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions will have less horizontal distance between the mean low water and mean high water lines. This reduces the actual area in which the public can pass on their own property. The second effect on access is through a progressive loss of sand as shore material is not available to nourish the bar. The lack of an effective bar can allow such high wave energy on the shoreline that materials may be lost far offshore where it is no longer available to nourish the beach. This affects public access again through a loss of area between the mean high water line and the actual water. Third, shoreline protective devices such as revetments and bulkheads cumulatively affect shoreline sand supply and public access by causing accelerated and increased erosion on adjacent public beaches. This effect may not become clear until such devices are constructed individually along a shoreline and they reach a public beach. In addition, if a seasonal eroded beach condition occurs with greater frequency due to the placement of a shoreline protective device on the subject site, then the subject beach would also accrete at a slower rate. Fourth, if not sited landward in a location that ensures that the seawall is only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave's energy.

Section 30235 of the Coastal Act allows for the construction of a shoreline protective device only when necessary to protect existing development or to protect a coastal dependent use and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. In this case, the bulkhead is necessary in order to protect both the existing septic system as well and the access road to the site, Sea Level Drive which are located immediately landward and to the west of the proposed bulkhead. As such, the Commission notes that in this case, a shoreline protective device, as well as proper maintenance of the support and protective devices supporting the residence to ensure its stability, is necessary in order to protect existing development consistent with Section 30235.

However, Section 30235 of the Coastal Act also requires that shoreline protective devices be designed to eliminate or mitigate adverse impacts on local shoreline sand supply. The Commission notes that adverse effects to shoreline processes from shoreline protective devices are greater the more frequently that they are subject to wave action. As such, in past permit actions, the Commission has required that all new development on a beach, including shoreline protection devices, be located as landward as possible in order to reduce adverse impacts to the sand supply and public access resulting from the development. In the case of the proposed project, the Commission notes that the applicant is proposing to locate the bulkhead as far landward as possible.

The Commission further notes that the residential structure that the proposed bulkhead is connected to and the septic system the proposed bulkhead is designed to protect

may be modified in the future. The septic disposal system itself may be banned in the future or become obsolete altogether should a sewer system become available for the Malibu area in the future. In addition, future changes to the foundation of the residence on the subject site located landward of the subject shoreline protective structure authorized herein, repairs or replacement of the driveway and walkway to the residence front door, upgrade, relocation or abandonment of the septic disposal system, remodel of the residence and garage on the subject site involving the demolition of more than 50 percent of exterior walls or an addition to the residence and garage resulting in an increase of more than 10 percent of structural size, or construction of a new structure or residence on the subject parcel, relocation and/or complete or partial removal of any or all of the structures existing on site shown on the exhibit required pursuant to paragraph (B) in Special Condition Number One (1), above. As such, the Commission notes that the proposed bulkhead, in its current location, may not be necessary to protect the existing development if it is significantly remodeled, or its septic system abandoned in the future. Therefore, the Commission finds it necessary to impose **Special Condition No. One** in order to ensure that future development or changes to the existing structures on the subject site would require the applicant to seek a new permit from the Commission for the bulkhead that is the subject of the present coastal development permit application. In addition, **Special Condition No. One** requires that if an application for a new coastal development permit is required pursuant to this special 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

In addition, Section 30253 of the Coastal Act requires that new development minimize risks to life and property in areas of high geologic, flood, and fire hazard as well as ensure stability and structural integrity. In this case, the applicant's coastal engineering consultant has determined that the proposed bulkhead will improve the stability of the bluff and that it will be adequate to protect the existing septic system, walkway to the residence and Sea Level Drive on the subject site or adjacent to it.

As discussed above, the Commission notes that the applicant's engineering consultant has indicated that the proposed development will serve to improve the stability of the septic system, walkway and Sea Level Drive on the subject site or adjacent to it. However, the Commission also notes that the applicant's coastal engineer that the north wall of the basement/garage is not deep enough to furnish protection for the west flank of the proposed bulkhead wall. Further, the proposed bulkhead wall is located on a beachfront lot in the City of Malibu and will be subject to some inherent potential hazards. The Malibu/Los Angeles County Coastline Reconnaissance Study by the United States Army Corp of Engineers dated April 1994 concludes that Lechuza Beach experiences a long term shoreline retreat and is generally forecasted as "stable to slow erosion", averaging one (1) foot per year.¹

¹ This is based on estimated average vertical and horizontal scour prepared with the assistance of the numerical computer program model "SBEACH".

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. The subject site is clearly susceptible to flooding and/or wave damage from storm waves, storm surges and high tides. As identified by the coastal engineer, a portion of Sea Level Drive located about 100 feet to the east washed out in the storms of 1998. This portion of Sea Level Drive has been reconstructed and a rock revetment has been constructed in 1998 based on a now expired emergency coastal permit (No. 4-98-034-G). Further, 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 caused high tides of over 7 feet, which were combined 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 and specifically in the vicinity of the project site 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 coastal engineer, 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, and flooding, 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 No. Two**, 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.

In addition, the Commission notes that the proposed construction activity on a sandy beach, such as the proposed project site, 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. To ensure that adverse effects to the marine environment are minimized, **Special Condition No. Three**, 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, and that sand bags and/or ditches shall be used to prevent runoff and siltation.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Coastal Act Sections 30235 and 30253.

C. Seaward Encroachment, Public Access, and Visual Resources

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, access to the shoreline and along the coast shall be provided except in specified circumstances, where:

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

(2) adequate access exists nearby, or,

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

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.

Section 30251 of the Coastal Act states that:

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 subordinated to the character of its setting.

The beaches of Malibu are extensively used by visitors of both local and regional origin and most planning studies indicate that attendance of recreational sites will continue to increase significantly over the coming years. Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, section 30212 of the Coastal Act requires that adequate public access to the sea be provided to allow use of dry sand and rocky coastal beaches. Further, Section 30251 of the Coastal Act requires that visual qualities of coastal areas shall be considered and protected and where feasible, degraded areas shall be enhanced and restored.

Seaward Encroachment of Development

As a means of controlling seaward encroachment of residential structures on a beach to ensure maximum public access and to protect public views as required by Coastal Act Sections 30210, 30211, 30251, the Commission has, in past permit actions, developed the "stringline" analysis to control seaward development. As applied to beachfront development, the stringline analysis limits the seaward extension of a structure to a line drawn between the nearest corners of adjacent structures and limits decks to a similar line drawn between the nearest corners of the adjacent decks.

The Commission has applied this policy to numerous past permits on sandy beaches and has found it to be an effective policy tool in preventing further encroachments onto sandy beaches. In addition, the Commission has found that restricting new development to building and deck stringlines is an effective means of controlling seaward encroachment to ensure maximum public access as required by Sections 30210 and 30211, to protect public views and the scenic quality of the shoreline as required by Section 30251, as well as to minimize hazards associated with beachfront development as required by Section 30253 of the Coastal Act.

The Commission notes that the subject site has been the subject of past Commission action which approved a single family residence at the site (Coastal Permit No. 5-89-012 and 012A). In approving the development at the site a seaward limit of beachfront development has been established at the site, and pursuant to Commission policies for controlling seaward development, any proposed additions to the development must be consistent with the seaward limit of development previously approved, as well as the

designated building and deck stringlines. The proposed concrete bulkhead is located at the base of the bluff or embankment near the landward portion of the residence (Exhibit 4 and 6). As proposed, the bulkhead wall will not result in the seaward encroachment of development on the project site.

Visual Resources

Section 30251 of the Coastal Act requires public views to and along the ocean and scenic coastal areas to be considered and protected. The proposed bulkhead and walkway repair are located at the back of the beach at the base of the bluff or embankment and will be visible to the public from the sandy beach and ocean waters. Commission notes that proposed project, as conditioned to by **Special Conditions No. Four** will require that the concrete bulkhead be colored a bluff color to match the color of the earthen bluff or embankment to minimize its visual intrusion along the beach. The bulkhead will not be visible from any public road in the area; Sea Level Drive is a private road. Therefore, the proposed project will not result in adverse impacts to and along the beach and is consistent with the character of neighboring development. Therefore, the Commission finds that the project, as conditioned, has no significant impact on public views to or along the beach and is consistent with Section 30251 of the Coastal Act.

Public Access and Shoreline Development

The Commission has established a policy that all beachfront projects requiring a coastal development permit be reviewed for compliance with the public access provisions of Chapter 3 of the Coastal Act. In past permit actions, the Commission has required public access to and along the shoreline in new development projects and has required design changes in other projects to reduce interference with access to and along the shoreline. The major access issue in this permit application is the potential for adverse effects from a shoreline protective device on shoreline sand supply and public access in contradiction of Coastal Act policies 30211 and 30221.

The State owns tidelands, which are those lands located seaward 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. In this case, the proposed development is located on the sandy beach and requires review by the California State Lands Commission (CSLC). The applicant has submitted evidence of review of the proposed project by the California State Lands Commission (CSLC), which indicates that the CSLC determined that it does not appear that the project will intrude into an area that is subject to the public easement in navigable

waters. The CSLC' conclusion was made without prejudice to any future assertion of state ownership or public rights, should circumstances change, or should additional information come to their attention.

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

In the case of the proposed project, the proposed concrete bulkhead wall will lengthen the life expectancy of the septic system. The bulkhead wall will fix the boundary between the sandy beach and the upland bluff are which provides a supply of sand as the bluff erodes over time. The construction of the bulkhead will result in the potential for permanent loss of sandy beach as a result of the loss of future sand contributions, the change in the beach profile or steepening from potential scour effects by the bulkhead. In past permit actions, the Commission has required that development on a beach, including shoreline protective devices, provide for lateral public access along the beach in order to minimize any adverse effects to public access. In the case of the proposed project, the Commission notes that the applicant has recorded in 1989 an Irrevocable Offer to Dedicate Public Lateral Access Easement as a result of Coastal Permit No. 5-89-012. Therefore, a public access dedication exists on the project site from the mean high tide to the dripline of the residence and deck on the seaward side. The proposed bulkhead is not located within this dedication area.

In addition, the Commission notes that chronic unauthorized postings of signs illegally attempting to limit, or erroneously noticing restrictions on, public access have occurred on beachfront private properties in the Malibu area. These signs have an adverse effect on the ability of the public to access public trust lands. 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 No. Five** to ensure that similar signs are not posted on or near the proposed project site. The Commission finds that if implemented, Special Condition 5 will protect the public's right of access to the sandy beach below the MHTL.

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

D. Local Coastal Program

Section 30604 of the Coastal Act states:

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).

E. CEQA

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a coastal development permit application to be supported by a finding showing the application, as conditioned 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.

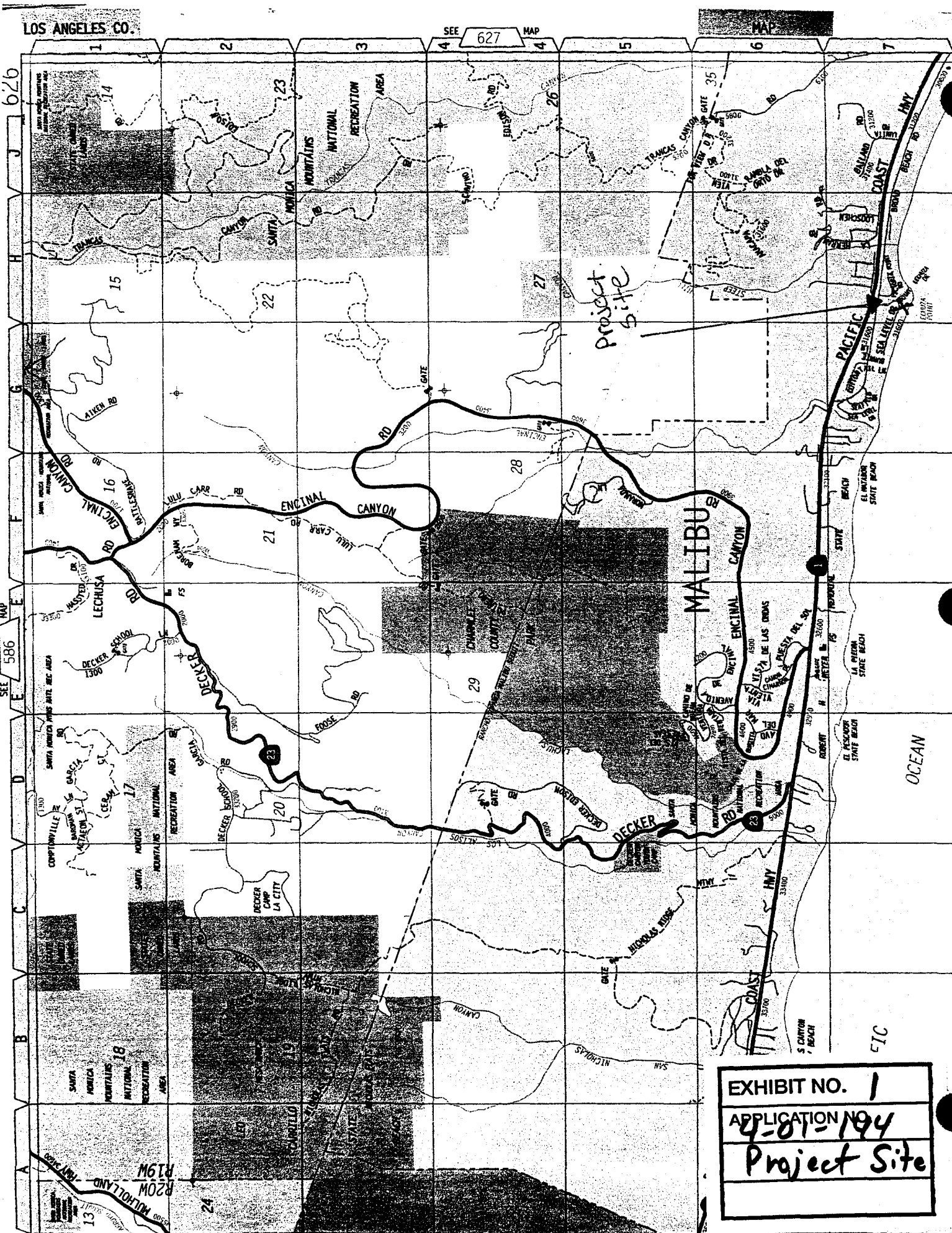


EXHIBIT NO. 1
APPLICATION NO. 4-81-194
Project Site

4470

17

SCALE 1" = 100'

PACIFIC COAST
HWY.

18

N'y. prop. E. In. Tr. No. 10630

County
0.13± Ac.

O. R. 15228-342
R=4050

16 0.13± Ac.
Per. = 4,660±

BROAD
BEACH ROAD

DR. 8

5,630±"
520±" Prt. St. of Dr. East.
5,170±"

3,900±"
3,410±" Prt. St. of Dr. East.
6,490±"

8,550±"
1,270±" Prt. St. of Dr. East.
7,280±"
7,180±"
1,310±" Prt. St. of Dr. East.
5,870±"

8,020±"
1,800±" Prt. St. of Dr. East.
6,220±"

12,310±"
1,580±" Prt. St. of Dr. East.
7,730±"
2,200±"
300±" Prt. St. of Dr. East.
1,300±"

DR.

SEALEVEL

OCEAN

PACIFIC

EXHIBIT NO. 2
APPLICATION NO. 4-01-144
Subject lot

Subject lot

N

DR.

DR.

DR.

DR.

DR.

DR.

DR.

DR.

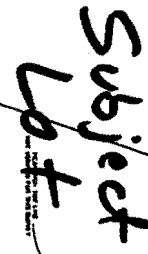
DR.

DR.

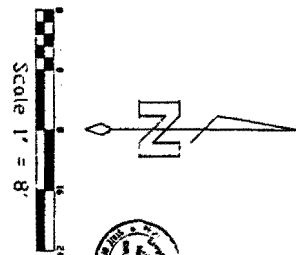
DR.

DR.

DR.

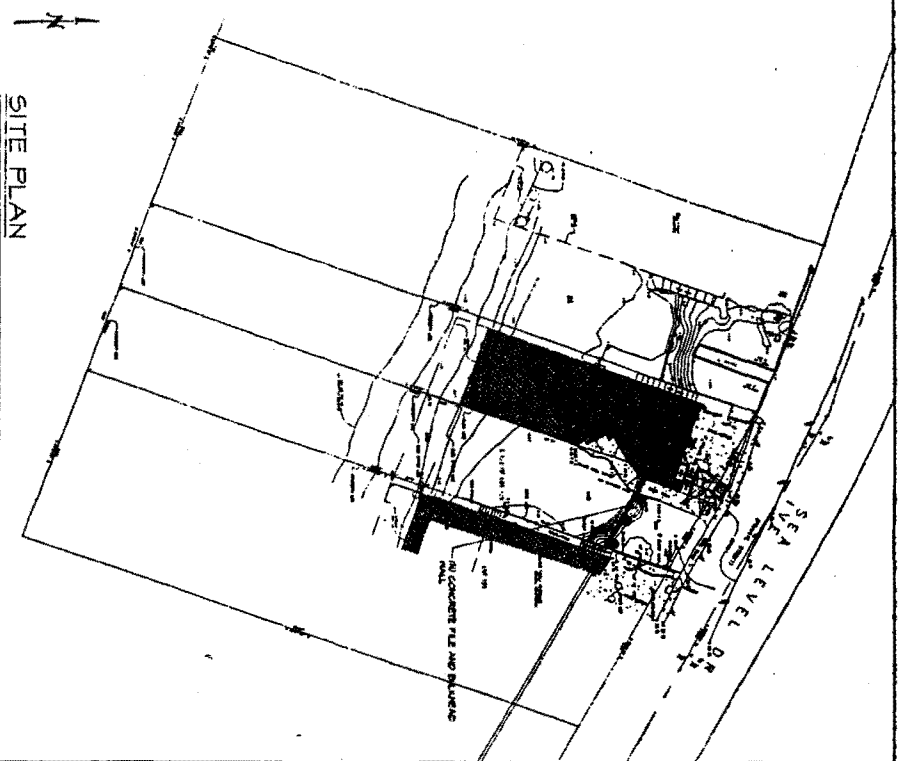


Topographic Survey



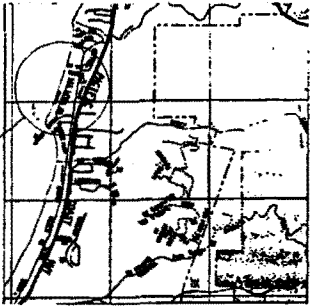
PREPARED BY:

 **Chris Nelson**
& Associates
PROFESSIONAL LAND SURVEYORS
29225 Le Sage Drive, Suite 103, Woodside Village, CA 91362
Voice: 818.991.1040 Fax: 818.991.0810



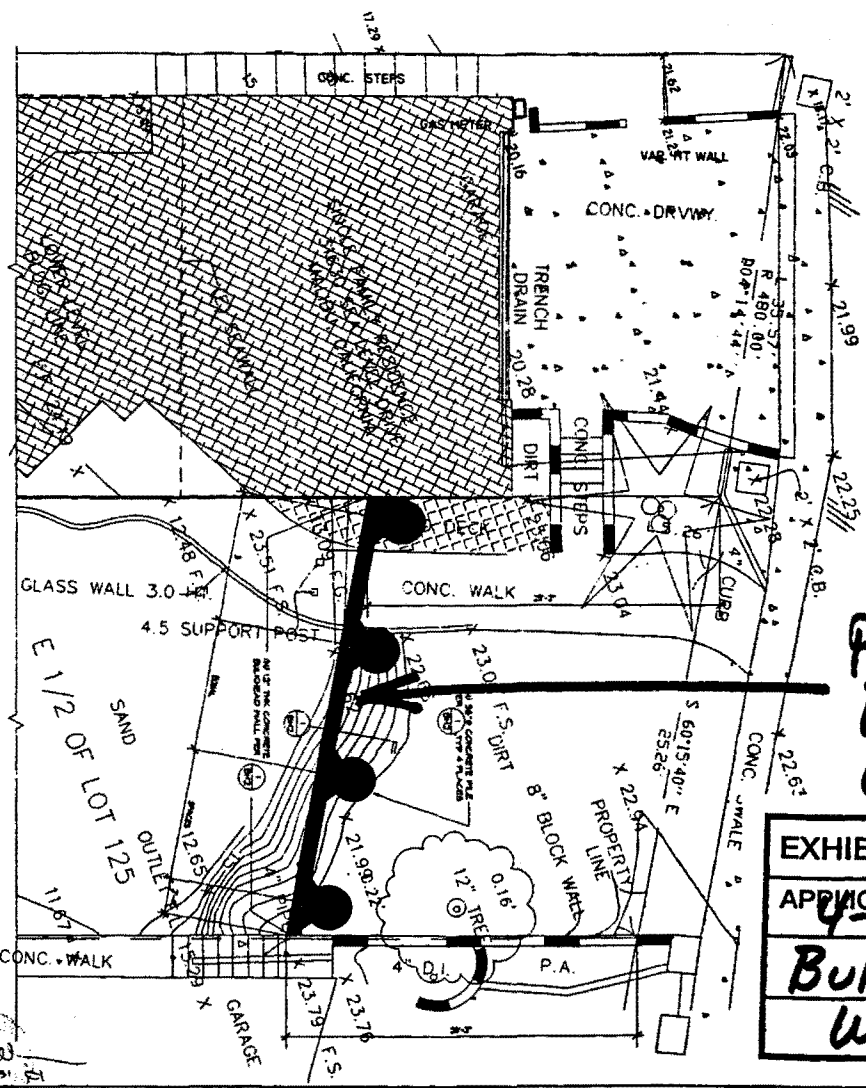
SITE PLAN

SCALE: 1" = 30'



VICINITY MAP

SCALE: 1" = 30'



CONCRETE BULKHEAD WALL PLAN

NOTES:

1. SEE SHEET TWO FOR THE ELEVATION.
2. ALL BULKHEAD WALLS SHALL BE CONCRETE, DESIGN FOR EARTH LOAD TO ADJACENT LOTTING DUE TO SLOPESIDE.
3. SEE BULKHEAD PLAN FOR CONCRETE WALLS AND FOUNDATION.
4. REFER TO ARCHITECTURAL PLAN FOR ALL OTHER DIMENSIONS AND LOCATIONS.

Proposed Bulkhead Wall

EXHIBIT NO. 4
APPLICATION NO. 4-01-144
Bulkhead Wall

FEB-2 2001

<p>PROJECT TITLE</p> <p>CONCRETE BULKHEAD WALL PLAN AND GENERAL NOTES</p>	<p>PROJECT CLIENT</p> <p>CONCRETE BULKHEAD WALL</p> <p>31650 SEA LEVEL DR</p> <p>MALIBU, CA</p>	<p>DESIGNER</p> <p>JOSE LIEBERMAN</p> <p>5724 HOLLYWOOD BLVD.</p> <p>HOLLYWOOD, CA 90028</p> <p>(310) 826-4656</p>	<p>ENGINEER</p> <p>DAVID C. WEISS</p> <p>STRUCTURAL ENGINEER & ASSOCIATES, INC.</p> <p>22440 CLARENDON STREET, SUITE 308</p> <p>WOODLAND HILLS, CA 91367</p> <p>PHONE (818) 224-9475 FAX (818) 224-9422</p>	<p>DATE</p> <p>2/2/01</p> <p>BY</p> <p>BHI</p>
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GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES. ANY OBSTRUCTIONS TO ACCESS SHALL BE REMOVED PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AND EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PROCESS.
4. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SAFETY MEASURES THROUGHOUT THE CONSTRUCTION PROCESS.
5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDING OF ALL CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL MAINTAIN ADEQUATE COMMUNICATIONS WITH ALL STAKEHOLDERS.
7. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDING OF ALL CONSTRUCTION ACTIVITIES.
8. THE CONTRACTOR SHALL MAINTAIN ADEQUATE COMMUNICATIONS WITH ALL STAKEHOLDERS.
9. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDING OF ALL CONSTRUCTION ACTIVITIES.
10. THE CONTRACTOR SHALL MAINTAIN ADEQUATE COMMUNICATIONS WITH ALL STAKEHOLDERS.

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19. THE CONTRACTOR SHALL MAINTAIN ADEQUATE RECORDING OF ALL CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL MAINTAIN ADEQUATE COMMUNICATIONS WITH ALL STAKEHOLDERS.

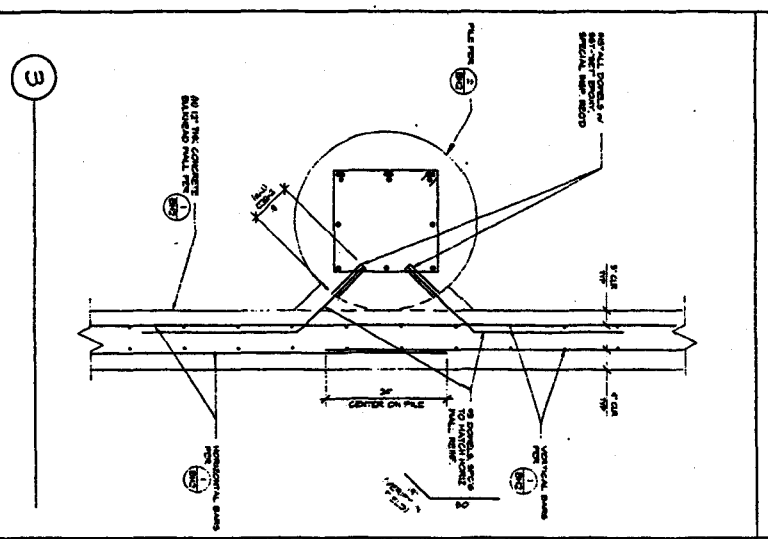
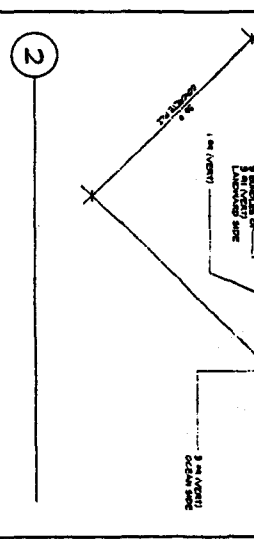
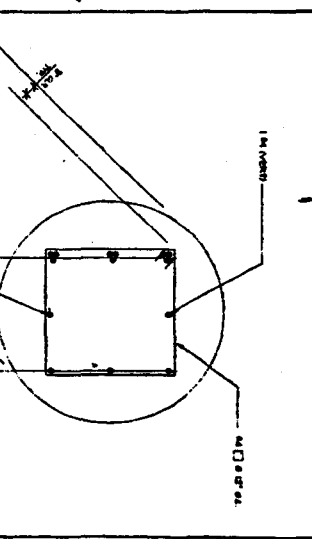
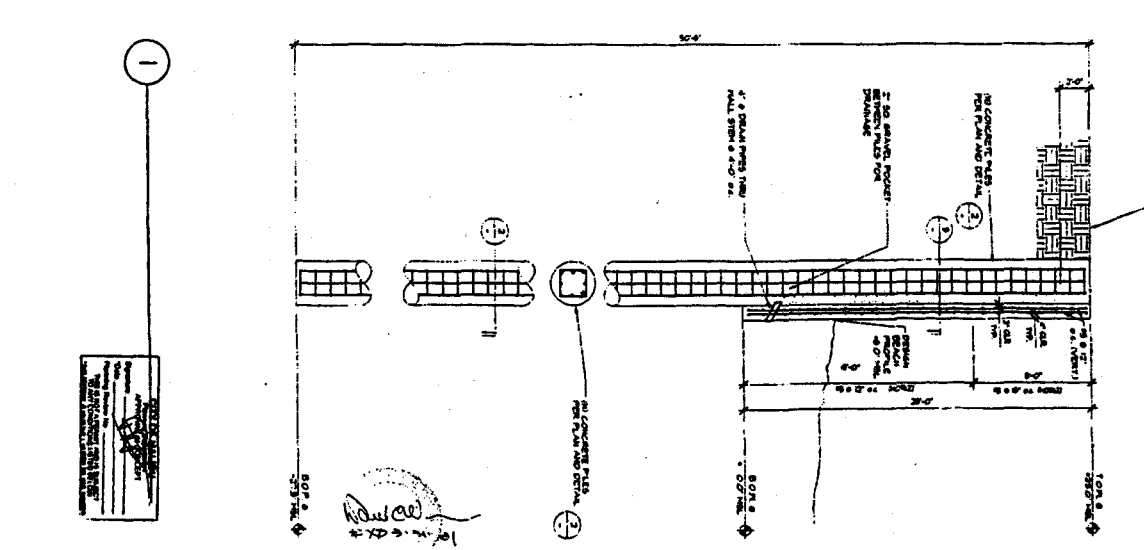


EXHIBIT NO. 5
APPLICATION NO. 4-01-194
Wall Plan



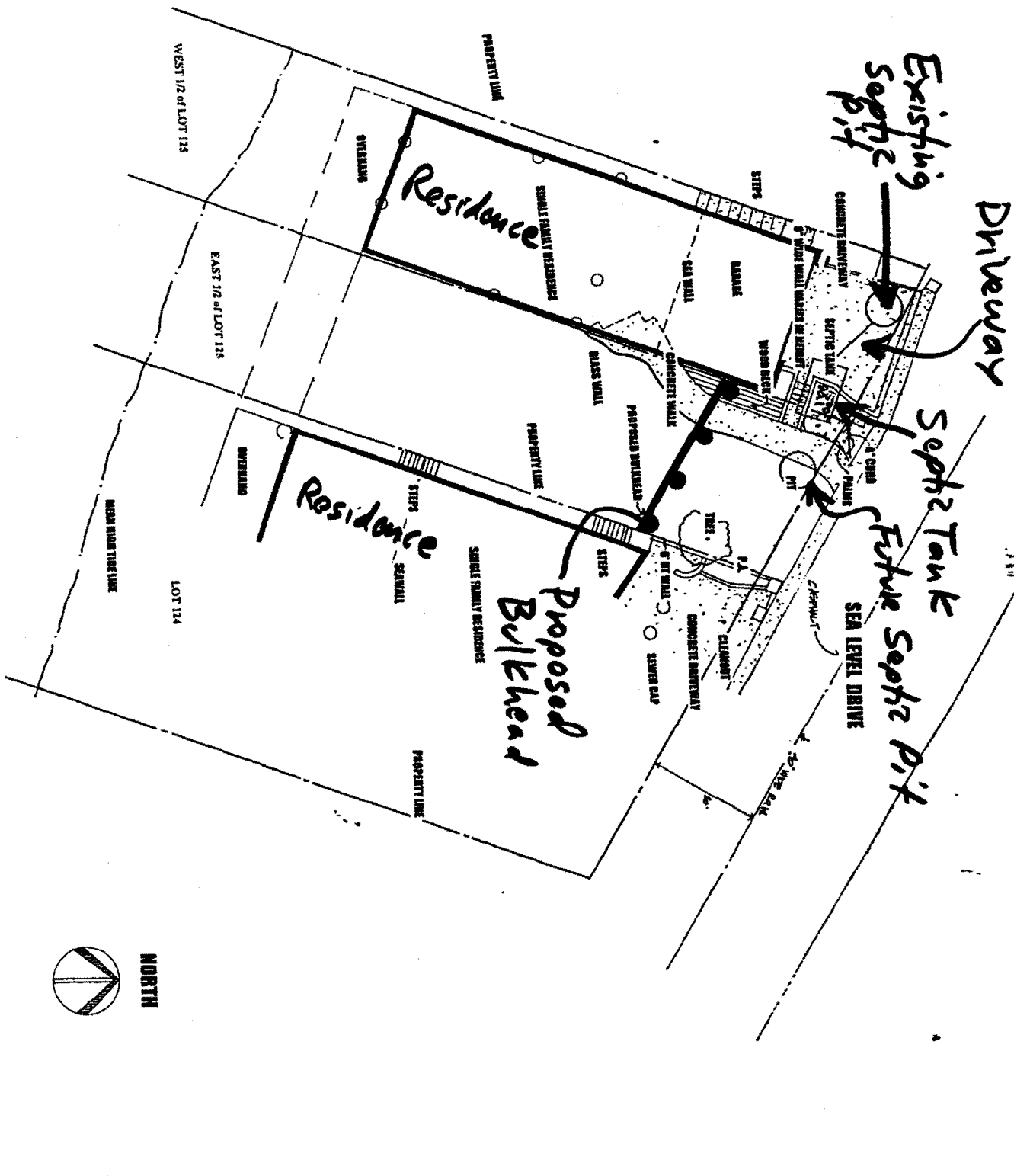


EXHIBIT NO. 6
APPLICATION NO. 4-01-744
Site Plan

SCHMITZ AND ASSOCIATES
 29350 PCH SUITE #12
 MALIBU, CA 90265
 Tel: (310) 451-1111
 Fax: (310) 451-1112
 www.schmitzandassociates.com

EXHIBIT NO. 7
 APPLICATION NO. 4-81-144
 Residence Section
 CDP 5-89-012

LIBER

SECTIONS

50% Reduced

DATE 9/20/90

SCALE 1/4" = 1'-0"

DRAWN

CHECKER

REVISION

SHEET

AVG

OCT 18 1990

RECEIVED

OCT 19 1990

CALIFORNIA
 COASTAL COMMISSION
 SOUTH COAST DISTRICT

SOUTH COAST DISTRICT OFFICE

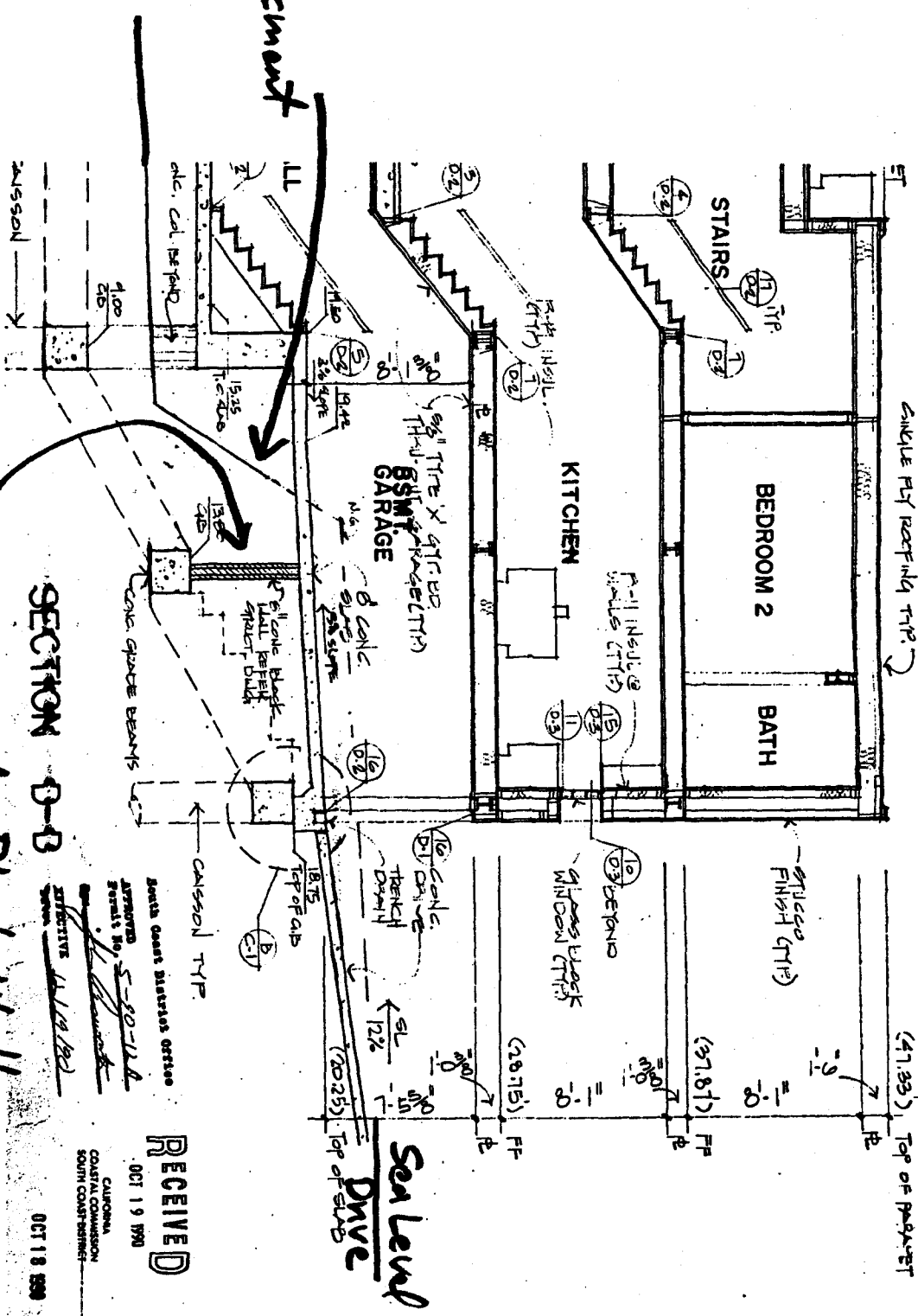
APPROVED 5-89-114

PERMIT NO. 5-89-114

DATE 11/19/90

SECTION B-B

Concrete Block Wall on
 Grade Beam





RECEIVED

JAN 08 2001

January 4, 2002

California Coastal Commission
89 South California Street, Suite 200
Ventura, Ca 93001

CALIFORNIA
COASTAL COMMISSION
SOUTH CENTRAL COAST DISTRICT

Attention: James Johnson

RE: COASTAL DEVELOPMENT PERMIT APPLICATION NO. 4-01-144 AND
EMERGENCY PERMIT REQUEST 4-01-212 TO REPAIR A SIDEWALK AND
STAIRWAY, AND CONSTRUCTION OF A NEW SEAWALL TO PROTECT A
SEPTIC SYSTEM AND DRIVEWAY FROM BLUFF EROSION LOCATED AT 31630
SEALEVEL DRIVE, MALIBU. (*LIBERMAN*)

Dear James,

We are responding to your letter dated December 10, 2001, regarding the applicant's legal right to construct the proposed bulkhead wall due to an existing recreational easement, or covenant, located on the eastern half of lot 125.

The purposes for which the easement was granted are not affected by the application. The easement reserved pursuant to Grant Deed is for "bathing, recreational purposes, and pedestrian travel, and all other purposes incidental thereto, and not for the purposes of camping, erecting tents or buildings, maintaining concessions, or lighting fires." The proposed seawall will not impede or hinder individuals from bathing, conducting recreational activities or travel.

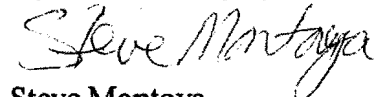
The Grant Deed also provides for "an easement for ingress and egress along Sea Level Drive, appurtenant to the property, and legal described in that certain Declaration of Establishment of Easements and Restrictions, dated July 31, 1951." The March 30, 1988 correspondence from Frye & Spencer provides that the restrictive covenant provides: "No building, residence or structure of any kind, except fences, shall be erected or permitted to remain on any part of Parcel 1, and said Parcel 1 and every part thereof shall be used solely for private and noncommercial beach and recreational purposes." The aforementioned covenant does not prohibit the construction of any above ground structure. The bulkhead, not unlike a fence, will not provide an impediment to or hinder views or access.

EXHIBIT NO. 8
APPLICATION NO. 4-01-144
Legal Right
to Construct

Please be advised that the applicant, Mr. Jose Liberman, is currently on vacation until next week and this all the information we can provide at this time. Further information will be forthcoming.

Thank you for your time and consideration regarding this matter and please do not hesitate to contact us should you require additional materials or have any questions or comments.

Sincerely,
SCHMITZ & ASSOCIATES



Steve Montoya
Associate Planner

XC: Jose Liberman

5-89-012

Coastal Engineering, Inc.

JOHN S. HALE, Coastal Engineer

15138 Chetney Drive • Baldwin Park, California 91706

(818) 338-1465

COASTAL ENGINEERING REPORT FOR THE PROPOSED HOME AT
31630 SEA LEVEL DRIVE, MALIBU, CA

RECEIVED
JAN 6 1989
CALIFORNIA
COASTAL COMMISSION
SOUTH COAST DISTRICT

May 6, 1988

By John S. Hale

EXHIBIT NO. 9
APPLICATION NO. 4-89-144
Coastal Eng
Report 1988

page 1 of 10

EXECUTIVE SUMMARY

The area in question is not a sandy beach that is continuously eroding, but in fact, is just oscillating. Surveys going back to the early part of this century do not show this area to be continuously eroding, but rather oscillating during times of high tide, storm surges with storm waves superimposed. When these conditions occur during times when the beach has oscillated to a low profile, waves over 8 feet high can break close to shore but do not uprush to the position of the proposed sewage system.

In this area, bedrock is very high in elevation and it is made up of a very hard rock material. The plan for support for the building in this area is huge concrete caissons (2½ to 3 feet in diameter) embedded deeply in this bedrock, and the bottom elevation of the home (over 20 feet above mean sea level datum) will be far above any type of ocean storm even under the most extreme wave conditions.

It should also be remembered that during the winter of 1982-83 the westerly end of this beach did, in fact, wash out as far landward as Sea Level Drive, however, the planned building site is along the easterly end of Sea Level Drive, and is protected by a huge rock promitory called Lechuza Point. Please note exhibit No. 4 in your Staff's report and the enclosed photograph.

If the reader will look at said photograph of the area, he will see a huge amount of rock projecting a long distance seaward at Lechuza Point and just westerly of Lechuza Point.

The rock is only a short distance easterly of the area in question. This rock provides a natural large groin system for the property in question. Therefore, it offers a tremendous amount of protection and creates a wide natural beach on the lot in question. It is for this reason that shoreline oscillation of the beach is such that the mean high tide line will never reach or even come close to the seaward end of the building that is proposed. Even under extreme minimum shoreline conditions, the mean high tide line will be a considerable distance seaward of the proposed structure. See the enclosed reports from David Weiss, Structural Engineer, and the report recently written by me.

The reports that your Staff uses to argue that this structure should not be built are not reports that refer specifically to the exact site in question and are therefore, only generalities. Even the quotes from the California Department of Navigation and Ocean Development in their 1977 report does not apply specifically to the lot in question, but to an area over 1/2 mile in length. Admittedly parts of

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For the Proposed Home at 31630 Sea Level Dr.
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the area oscillates over a long distance under wave attack,
but not the site we are discussing.

I feel the staff has given the commission a lot of misinfor-
mation on the site in question simply because they tried
to apply reports covering broad sections of the earth rather
than acquiring specific information for the study site.

The building or the sewage system to be constructed will
not wash away during the life of the building.

REPORT

RE: PROPOSED HOME AT 31630 SEA LEVEL DR., MALIBU

This report is written in rebuttal to your Staff's recommended denial which is based on arguments and information that has been used in past years on every single site where they were opposed to construction. The arguments are not specifically identified with the aforementioned site, but are generalities that have been applied to every site in which they wanted to deny construction. For example, on page 6, paragraph 2 in the second sentence, they state that the proposed development is located on a sandy beach in an extremely hazardous area subject to wave damage and beach erosion. This area in question is no more subject to wave damage than many of the homes along the Malibu coastline that have recently been approved by your Commission. I will forego the listing of the actual addresses, but I have at my disposal a number of sites on Broad Beach Road and along the Malibu coastline easterly of the Malibu pier that have been recently approved.

Myself and other engineers have demonstrated over and over again that these areas are not continuously eroding, but that the beach is just oscillating. There is no question in our minds that over geological time of thousands of years that the shoreline is eroding, but from the standpoint of surveys that have been made and documented since the early part of this century along the Malibu coastline in the County of Los Angeles the bottom line is that the beaches are not continually eroding or accreting, but are oscillating during storm wave conditions.

It should be further noted that the structural design on the aforementioned site that has been given to you is not one that will simply exceed the magnitude of the winter storm of February and March 1983, or the recent January 1988 storm but will in fact, resist all of the storms that have been estimated will occur within the next hundred years.

Your Staff quotes a Los Angeles Times editorial of January 20, 1988 by Douglas Inman that the latest ocean storms were so destructive because of development so close to the water and the continuous erosion of the beaches. In the first place, few counties in the State of California have the plan checking requirements that the County of Los Angeles has. Admittedly, there is more of a danger of building close to the shoreline than building on solid rock some place in the upland areas, but the record in Los Angeles County of failures under the present regime of Coastal Engineering plan checking that started in 1965 has been documented over and over and the record states

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that of the thousands of structures that have been placed on the beaches, we have had only one failure. This was a seawall that the contractor failed to build in accord with the engineer's design. The wood sheeting was not placed deep enough.

Now these are structures that were processed by the County Building and Safety Office. We are not talking about structures that were bootlegged.

Another example of the "boilermaker-type" presentation your Staff is using is a quote from a recent report entitled, "National Strategy for Beach Preservation." The report states that factors such as storm frequency, seasonal changes and diminishing supply of sand present is important as the accelerating rise of the ocean in determining the erosion rates. I would like to point out to the Commission that the system the Los Angeles County uses is based on statistical analysis that involves the chance happening of high tides, storm surges superimposed, storm waves and low beach profiles all occurring at the same time. We have considered the statistical chance of this happening as well as the rising water surface. We have considered the chance of all these factors occurring simultaneously and what design factors should be considered if they do combine simultaneously. It's the use of this knowledge that has prevented damage. In other words, the factors mentioned in this report were considered by the County of Los Angeles and are incorporated in the plan checking process, a system they have used for twenty three years.

It should also be mentioned that this idea of the accelerated rate of sea level rise does not apply to every single foot of California shoreline. As a matter of fact, I suspect that the National Strategy for Beach Preservation report was a result of the report that Stacy Hicks of NOAA did several years ago. In that report, Hicks indicated that the sea level was rising something like 2 to 3 inches in 50 to 100 years. I am not certain of the exact figures, but it was a very small amount and it has been considered by me as a part of the statistical analysis the County uses. Stacy's report does not say that all of the water along the westerly coastline is rising, in fact, it emphasizes that the waters are receding in places and furthermore, in discussing the matter with Mr. Hicks, he admitted that there were real inaccuracies in this report. For example, the tide gauges along the California coastline are often placed in places where their location causes water flows,

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other than tidal flows that influence their readings. Survey systems have become extremely accurate, but the weakness in the system is the location of the tide gauges. Now, for example, we can survey from Los Angeles Outer Harbor to Channel Islands Harbor with only three millimeter error in height.

We admit that with building of houses, roads, storm drains and other things that block the natural erosion and the deposits of material on the beaches that occurred during early California times, that over thousands of years the beaches will erode. However, surveys throughout this century in Los Angeles County have not indicated that there was a measurable amount of erosion along the Malibu shoreline. More specifically, along the site of the proposed development. It is also probable that few organizations have surveyed the beach in the area in question as often as the County of Los Angeles County has. As a matter of fact, there are places along this beach where the beach has been surveyed over 240 times in recent years with no indication of continuous erosion.

Another example of this type of presentation which does not address the issue of the site in question is the Storm Insurance Rate Map that the Federal Emergency Management Agency has made. Your staff states that this area is designated a "v" zone and states that this area is subject to high velocity waters. A good share of the California coastline where buildings have existed for 50 years is designed as "v" zone for coastal hazard areas. There are hundreds of buildings along the Los Angeles County Coastline that are in this zone and have existed for years.

Reports by the Corps of Engineers Research Center indicate that in this specific area there are studies that project tsunamis over 100 and 500 year periods and do not show tsunamis waves as being statistically the most dangerous waves but instead statistics show that the wind waves that reach this coast are in fact, the most dangerous waves. The earthquake in Alaska in the 60's caused wave damage in northern California, damage to the Union 76 pier in Marina del Rey, and some damage in Long Beach, but there was no damage recorded in the area in question. Furthermore, the wave uprush from these tsunamis have been estimated by the Corps of Engineers Research Center to be much lower than the uprush used as a basis of design on the building on the site in question.


It should also be mentioned that in the eighty eight years since 1900 only two hurricanes have come as far north as

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For the Proposed Home at 31630 Sea Level Dr.
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the area in question and those did no damage because they went out to sea. Hurricanes along our coastline lose their wind velocity and become just storms.

Another example of this generalizing approach is the quote from the Atlas Erosion published in 1977 by the California Department of Navigation and Ocean Development. The staff interprets the classification of this area as evidence that there is extraordinary hazard from beach erosion. In the first place a man named John Habel did the aforementioned report for said Department and he did the entire California coastline in approximately three months. Most of this work was done by photographs and was not actually the result of measuring the shoreline movement. He observed bluff erosion that he saw on the photographs and came to the conclusion that the beach is eroding. It should be noted that because the bluffs are eroding is not an indication that the beach is eroding. Waves will even erode bluffs when the beach is stable. Furthermore, the area classified by John is over 1/2 mile in length and is not uniform in nature. At the westerly end of this beach during the 82-83 storms the sand material washed out to Sea Level Drive, an access road in the area. However, at the easterly end of this small area there is a huge promontory that we call Lechuza Point. This point forms virtually a natural groin-type system that dams up the sand along the easterly end and provides a tremendous amount of protection to the very site in question.

I feel that this area is as safe as many other areas in Malibu for coastal structures.



John S. Hale
Consulting Coastal Engineer
RCE 16539

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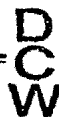
BIBLIOGRAPHY

1. Modeling the Ocean Shoreline, by John S. Hale, Vol. 43, published in the October 1975 issue of the Shore and Beach Magazine, which is a journal of the American Shore and Beach Preservation Association.
2. Wave Statistics for Surf Zone Structures, by John S. Hale, presented in the International Symposium on Oceanwave Measurements and Analysis, printed by the American Society of Civil Engineers, September 1974.
3. Coastal Sediments of Los Angeles County, presented in Coastal Sediments 1977, Conference in Charleston, South Carolina, by John S. Hale, published by the American Society of Civil Engineers.
4. Coastal and Ocean Management, presented at the Coastal Zone '83 Conference in San Diego, by John S. Hale and published by the American Society of Civil Engineers.
5. Deep Water Wave Study for the California Coast, prepared by Meterology International, Inc., and published by the California Department of Waterways and Boating Facilities.
6. 7 Deep Water Stations Along the California Shoreline, published by Marine Advisors, results from step resistor wave gauge studies 1940-1956. Material obtained from Dr. D. L. Harris study in Southern California waters by 1961.
7. Experimental Statistics, Handbook 91, published by United States Department of Commerce, National Bureau of Standards.
8. Calculated Sand Fills and Groin Systems, by John S. Hale, published in the Thirteenth Coastal Engineering Conference proceeding of Vancouver, British Columbia, July 1972, and published by the American Society of Civil Engineers.
9. Tidal Datum Planes, special publication, No. 135, by H. A. Morner, published by the U. S. Government Printing Office.
10. A Statistical Survey of Oceanwave Characteristics in Southern California Waters by Marine Advisors, January, 1961.
11. Volumes I, II and III, Shore Protection Manual, by U.S. Army Coastal Engineering Research Center, 1977 edition published by the Government Printing Office.
12. County of Los Angeles, Surveys Along the Los Angeles County Shoreline, C.S.B. Maps No. 1726, filed in the County Engineers Office.

13. Notes on Tidelands and Vertical Datum, by Survey Division of the County Engineer, County of Los Angeles, compiled by Survey Division, January 1956.
14. Pacific Coast Hindcast Phase II Wave Information, by Coastal Engineering Research Center, published May, 1987.

PICTURE OF STUDY SITE





DAVID C. WEISS

Structural Engineer & Associates, Inc.

February 1, 1988

RECEIVED
JAN 13 1989

CALIFORNIA
COASTAL COMMISSION
SOUTH COAST DISTRICT

Mr. Norm Haynie
22761 Pacific Coast Highway
Malibu, Ca 90265

SUBJECT: Liberman Residence
31630 Sea Level Drive
Malibu, Ca

REFERENCE: Coastal Engineering/Wave Study Report
31630 Sea Level Dr.
Malibu, Ca
By David C. Weiss, Structural Engineer
& Associates, Inc.
Dated May 21, 1986

JOB#: 9486

Dear Mr. Haynie,

* At your request, I have reviewed the referenced Coastal Engineering/Wave Study Report in view of revising the location of the proposed sewage disposal system. As stated in the report, the maximum expected wave uprush will be to thirty-four feet (34') of the Sea Level Drive right-of-way line. Review of a Sanitary Septic System as approved by the Los Angeles County Health Department on December 1, 1987 shows the revised sewage disposal system located between the garage and the Sea Level Drive right-of-way line. Based on dimensions shown on this plan, the proposed system appears to be within seventeen ft. (17') of the right-of-way line and under these conditions, no bulkhead is required for the protection of the sewage disposal system.

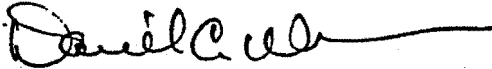
* The proposed structure shall be supported by a cassion/pile type foundation (see recommendations section of the referenced coastal engineering report), with a minimum finished floor elevation of +22.4 ft. M.S.L. datum. Cassions or piles shall be designed for the wave forces calculated on sheet 3 of 3 of the referenced coastal engineering report in addition to any anticipated structural loads. If these recommendations are complied with, then no seawall/bulkhead will be required for protecting the proposed structure.

EXHIBIT NO. 10
APPLICATION NO. 4-81-194
Coastal Report
Feb 1988

* Furthermore, the size and number of cassions anticipated for the support of such a structure, will not effectively impede the existing natural littoral process for this section of beach.

If you have any questions, please feel free to contact me at my office.

Very truly yours, .



David C. Weiss
President
S.E. 1867

5-89-012

March 18, 1988

California Coastal Commission
245 West Broadway, #380
Long Beach, California 90802

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JAN 9 1989

CALIFORNIA
COASTAL COMMISSION
SOUTH COAST DISTRICT

SUBJECT: Liberman Residence
31630 Sea Level Drive
Malibu, California

REFERENCES: 1. Coastal Engineering/Wave Uprush Report
for 31630 Sea Level Drive
Malibu, California
By David C. Weiss, Structural Engineer
& Associates, Inc.
Dated May 21, 1986
2. Letter to Mr. Norm Haynie
From David C. Weiss, Structural Engineer
Regarding 31630 Sea Level Drive
Dated February 1, 1988

OUR JOB#: 9486

Dear Commissioners & Staff,

It has been brought to my attention thsat there are questions in the minds of some of the staff or Commission members as to the structural and/or economic feasibility of constructing a residence on the subject site. Therefore, at the request of Mr. & Mrs. Elias Liberman, Mr. Reg Browne of this office, and myself, met with Mr. Norm Haynie at the subject property on March 15, 1988. The purpose of the visit was to observe the site, and review the preliminary plans for developmenmt in order to comment on the feasibility of developing the site for a single family dwelling.

The statements made in this letter are professional opinions based on the data obtained during the above mentioned visit as well as information gathered during the preparation of the reports and letters listed in the reference section at the beginning of this letter. The statements are further based on my experience through involvement in the preparation of more than two-hundred plans and/or reports regarding coastal construction from Topanga Canyon to the Ventura County line since 1976 and Mr. Browne's involvement with proportionally the same number of

EXHIBIT NO. 11

APPLICATION NO.

4-01-144

Liberman

Residence

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projects since 1982.

The site visit revealed that the beach had scoured fairly consistant with that which was predicted in the Coastal Engineering/Wave Uprush report of reference number one (1) above. The former claying embankment between the road and the sandy beach appeared to have resisted the scour reasonably well. The plan of development shows the proposed seepage pit for the project to be adjacent to the north property line on Sea Level Drive and therefore, well past the ten foot uprush buffer required by the County of Los Angeles Health Department in order to forgive the requirement of a protective bulkhead. As discussed with Mr. Norm Haynie, the entire structure is to be founded on a reinforced concrete beam and caisson system.

The caissons are to be socketed into bedrock and shall be designed for the wave forces specified in the reference number one (1) wave uprush study. With the embedment into bedrock and designed to resist the apparent wave forces, the structure is safe from scour and wave attack. The house would be able to resist wave forces of the magnitude of those of March, 1983 and January 18, 1988 ocean storms. If under storm conditions in excess of the magnitude of the standards of design for this area, the entire site to, and including, the road were to scour to bedrock, the house structure would still be structurally sound. The concrete beam and caisson foundation system for this type of building is normally designed to resist forces well in excess of those prescribed in our wave uprush study. It is non-coastal considerations, such as seismic or lateral forces due to earth pressures which usually govern the design.

The size of caissons, if cast in place on the job, are usually 2'-6" to 3'-0" in diameter. If precast piles are used, they can be as small as fourteen inches in diameter, but more piles are required. In either case, the caissons/piles are small enough so as not to effect the cyclical movement of sand along the coast.

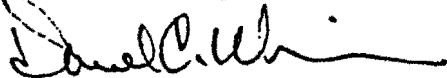
The type of construction described above is common for single family residences, built in the surf zone along the Malibu coast. There is nothing unusual about the technology, and the economics of the project are consistant with that of all other structures of similar type constructed in the Malibu area in the last few years.

As a final comment, I wish to state, that I have had twenty-five years of experiences in this type of construction, first as a plan checker for the County of Los Angeles Department of Building

& Safety and than as a private consultant. I have no knowledge of a failure of this type of structure which was properly constructed to the standards which have been required by the County of Los Angeles since the middle of the 1970's. The very few "failures" noted, or damage sustained, to buildings built in the surf zone since the mid '70's has been due to either improper design or construction (i.e. not following the perscribed standards) or conditions beyond mans control such as impact of excessively large pieces of debris. The "spectacular" damage published or shown on television and the not so spectacular damage that most people never hear about has been mainly to structures designed and constructed before the requirements of the mid 1970's came into effect.

If you have any questions, please feel free to contact me at my office.

Very truly yours,



David C. Weiss
President
S.E. 1867

January 4, 2002

Mr. James Johnson
Coastal Project Analyst
California Coastal Commission
89 South California Street, Suite 200
Ventura, CA 93001

Subject: Proposed Seawall at
31630 Sea Level Drive
Malibu, CA

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JAN 08 2002

CALIFORNIA
COASTAL COMMISSION
SOUTH CENTRAL COAST DISTRICT

References: Number One

Letter

From: California Coastal Commission

To: Schmitz & Associates

Dated: December 10, 2001

Number Two

Letter

From: David C. Weiss, Structural Engineer & Associates, Inc.

To: California Coastal Commission

Dated: March 18, 1988

Re: Liberman Residence
31360 Sea Level Drive
Malibu, CA

Number Three

Coastal Engineering/Wave Uprush Study

31360 Sea level Drive

Malibu, CA

By: David C. Weiss, Structural Engineer & Associates, Inc.

Dated: May 21, 1986

Job Number: LIE3.198.1

Dear Mr. Johnson,

In the referenced letter, you asked what changed my opinion for the need for a protective device from that stated in the documents of references Number

EXHIBIT NO. 12
APPLICATION NO. 4-01-194
Proposed Seawall
Jan 2002

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Two and Three above and whether or not I now think the beach is an eroding beach rather than an oscillating beach. The answer(s) are:

1. A portion of Sea Level Drive just east of this site washed out in the storms of 1998.
2. A survey of the site made in 1985 places the top of the embankment, on the west side of the subject lot to be approximately forty feet from the Sea Level Drive right of way line and approximately twenty-four feet from the right of way line at the center of the empty lot on the east side of the subject site. A survey made in November of 2000 shows the top of the embankment approximately twenty feet from the right of way line at the west side of the subject lot and the center of the empty lot to the east to be approximately sixteen feet from the right of way line.
3. The bar has been raised on us. The standard for wave uprush studies in 1986 was to superimpose the design waves on a Stillwater Line of +6.0' M.L.L.W. The standard for wave uprush studies is now to use a +7.5' M.L.L.W Stillwater line to account for a design tide of 6.0', .5' of storm surge and approximately 1' of sea level rise in the next 100 years due to Polar Ice Cap meltdown. This increase of 1.5' in the elevation of the Stillwater line drives the scour profile back approximately thirty-five feet. Therefore, a protective structure is now required.

The report of Reference Number Three (May 1986) recommended a protective seawall. In December of 1987, the configuration of the sewage disposal system was changed to eliminate the use of a drain field and use a seepage pit located at the Sea Level Drive right of way line. The sewage disposal system was now located landward of the buffer zone required between the uprush limit as modeled in the uprush study and a sewage disposal system, eliminating the requirement for a protective structure. Since that report (almost sixteen years) the embankment has scoured to a distances of between sixteen and twenty feet of the right of way line.

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2002 JAN 15
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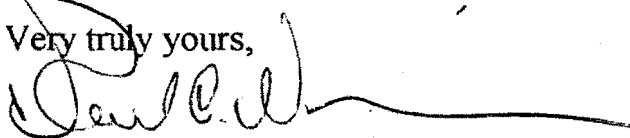
Mr. James Johnson
Coastal Program Analyst
Re: 31630 Sea Level Drive
Malibu, CA
January 4, 2002
Page 3 of 3

It is still my opinion that this is an oscillating beach. I have compared photographs taken from February 1998 and the September 2000 and find that the beach is relatively unchanged. As a matter of fact, the elevation of the beach at the most seaward piles is shown as +11.0' M.S.L. in the survey of November 2000 and at 11.5' M.S.L. at that same location on the survey of 1985. What has changed is the face of the road embankment. As stated in my recent reports, the problem is that once the toe of the embankment is undercut, the entire face of the embankment comes tumbling down. While the beach will recover with time, the embankment will not. During severe coastal storms, when the beach is at its lowest profile, the exposed toe of the slope is exposed to wave under cutting.

In 1986, the time span of estimates for performance over the life of a structure was understood to mean thirty to fifty years. Now it means one hundred years, and with a higher Stillwater Line. Under those conditions, the mathematical models from which we must make recommendations become more conservative.

Thank you for your consideration of this matter. If you have any questions, please contact me.

Very truly yours,



David C. Weiss
President
S.E. 1867