

CALIFORNIA COASTAL COMMISSION

SOUTH CENTRAL COAST AREA
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Hearing Date: 8/11/98
Commission Action:

STAFF REPORT: REGULAR CALENDAR 15.c.**APPLICATION NO.: 4-97-191****APPLICANT: Dr. John K. Kim AGENT: Richard Dodson, Architect****PROJECT LOCATION: 24300 Malibu Road, City of Malibu, Los Angeles County**

PROJECT DESCRIPTION: Demolish existing residence and garage. Construct a new 4,275 sq. ft., two story, single family residence with attached 440 sq. ft. two car garage, 246 sq. ft. storage loft; 1,366 sq. ft. of exterior decks, and new sewage disposal system. Construct new garden walls about 60 foot long, 3 1/2 foot high, along street, new driveway, new steps and landing platform to beach. Install 15 concrete caissons to support residence. Construct new wood bulkhead, 37 feet long with end wall, seaward of existing bulkhead, on western portion of parcel. Install base rock and overtopping rock blanket along 62 foot long existing wood bulkhead on eastern portion of parcel. Proposed grading includes 45 cubic yards of cut and 45 cubic yards of fill on site.

Lot area:	6,490 sq. ft.
Building coverage:	3,293 sq. ft.
Pavement coverage:	1,309 sq. ft.
Landscape coverage:	300 sq. ft.
Parking spaces:	2 spaces
Ht abv fin grade:	27 ft.

SUMMARY OF STAFF RECOMMENDATION:

Staff is recommending approval, subject to conditions, the proposed demolition of an existing residence and the construction of a new two story single family home, garage, and decks. The first and second floor and decks of the residence will be located within the stringline of adjoining properties. The project site, located on Amarillo Beach, was initially developed with single family homes between 1924 and the late 1940's. The subject site includes a one story residence and a bulkhead constructed in 1965, prior to the adoption of the Coastal Act in 1976 and the Coastal Zone Conservation Act of 1972.

Staff is recommending approval of the proposed project subject to the following special conditions which would bring the project into conformance with the Coastal Act: 1) revised plans for a new relocated bulkhead and redesigned septic system; 2) applicant's assumption of risk; 3) plans conforming to geology and engineering report recommendations; and 4) construction responsibilities and debris removal. The proposed project, as conditioned, minimizes any adverse impacts on lateral public access.

The existing bulkhead protects the septic system located within the front yard, pilings supporting the house, and Malibu Road from wave erosion hazards. The existing bulkhead is a single continuous structure, constructed in two sections; the eastern 62 foot long section is about seven (7) feet further seaward than the 37 foot long western section. The applicant proposes to construct a new 37 foot long wooden bulkhead seven (7) feet seaward of the existing western portion of the bulkhead to be located in line with the existing eastern portion of the bulkhead (*Exhibit 10*). A return wall, eighteen (18) feet long, is proposed along the western property line. The applicant also proposes to place a row of large rock, each rock about five feet wide, at the base of the eastern portion of the bulkhead to protect against wave scour. The applicant's proposed bulkhead overhaul would directly affect the entire existing structure fronting the beach through new construction and placement of rocks. In order to minimize encroachment onto the beach, reduce adverse effects on sand supply, erosion, and public access at this eroding beach, staff recommends that the entire bulkhead be re-located approximately ten (10) feet landward of the location proposed by the applicant (*Exhibit 14*). This recommended location for the new wooden bulkhead will be landward of the bulkhead on adjoining property to the east, and located as far landward as is feasible. The new bulkhead, when revised as recommended, will not require any seaward encroachment of base rock. Since the existing bulkhead needs to be strengthened to prevent damage to the bulkhead and septic system from severe winter storm waves, the applicant is proposing to upgrade it with rocks at the base and overtopping rock behind the bulkhead. Special Condition Number One requires that the bulkhead be redesigned and relocated landward without the need for a seaward encroachment of rock. As a result, the proposed project, as conditioned with a more landward location of the replacement bulkhead reduces any adverse impacts to public access or shoreline processes to the greatest extent feasible.

STAFF NOTE:

This application must be acted on by the Commission at the August 11- 14, 1998 Commission meeting to meet the requirements of the Permit Streamlining Act. This time limit may be extended an additional 90 days, at the applicant's option, to allow additional time for the Commission to consider this application. Staff recommends that the Commission act on

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this application on at the August 11, 1998 meeting, by approving this application with conditions and adopting the findings in this report.

LOCAL APPROVALS RECEIVED: City of Malibu Planning Department Approval in Concept, dated 9/8/97; City of Malibu Environmental Health Department Approval in Concept, dated July 15, 1997; City of Malibu Geology and Geotechnical Engineering Review, Approved in Concept, dated 8/13/97.

SUBSTANTIVE FILE DOCUMENTS: Appendix A

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

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

II. Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All development must occur in strict compliance with the proposal as set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

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4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

1. Revised Plans for Relocated New Bulkhead and Redesigned Septic System

Prior to issuance of coastal development permit, the applicant shall submit for the review and approval of the Executive Director, revised project plans relocating and redesigning the new bulkhead and septic system. The revised plans shall be prepared and signed by a licensed engineer(s) with expertise in designing shoreline protective devices and sewage disposal systems. The revised plans shall locate the proposed wooden bulkhead across the entire width of the parcel as far landward as feasible (which is approximately ten (10) feet landward of the existing eastern bulkhead) to accommodate a redesigned and relocated sewage disposal system. The revised plans shall: delete all proposed base rock; remove the entire existing bulkhead; and remove the portion of the end walls necessary to join them to the relocated new bulkhead. The revised plans shall include an adequate design to construct a replacement wooden bulkhead of appropriate depth and height in this new location, with revised connecting end walls on the west and east ends as appropriate which is generally depicted on Exhibit 14. The proposed septic system shall also be adequately re-designed by size, location, and type, as necessary, to be constructed adequately landward of the redesigned and relocated wooden bulkhead. The applicant shall submit evidence, for the review and approval of the Executive Director prior to the issuance of the coastal development permit, that the revised plans have been reviewed and approved by the City of Malibu Environmental Health Department.

2. Applicant's Assumption of Risk.

Prior to the issuance of the coastal development permit, the applicant as landowner shall execute and record a deed restriction, in a form and content

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

3. Plans Conforming to Geology and Engineering Report Recommendations

All recommendations contained in the Wave Uprush Study and two Updates by Pacific Engineering Group dated April 30, 1997 through January 5, 1998 and in the Geotechnical Engineering Report and two updates, prepared by RJR Engineering Group, Inc., dated May 28, 1997 through October 31, 1997, shall be incorporated into all final design and construction plans including all recommendations concerning minimum finished floor elevation, concrete pile foundation, steel reinforcement and steel members, site preparation, pier excavations, foundations, lateral loading, additional recommendations, retaining walls, concrete slabs-on-grade, utility trenches, surface drainage, and private sewage disposal, consistent with Special Condition Number One (1) above, which must be reviewed and approved by the consultants prior to commencement of development. Prior to issuance of the coastal development permit, the applicant shall submit evidence to the Executive Director of the consultant's review and approval of all final design and construction plans.

The final plans approved by the consultant shall be in substantial conformance with the revised plans described above in Special Condition Number One (1) approved by the Commission relative to construction, grading and drainage. Any substantial changes in the proposed development approved by the Commission which may be required by the consultant shall require an amendment to the permit or a new coastal permit.

4. Construction Responsibilities and Debris Removal

The applicant shall, by accepting this permit, agree and ensure that the project contractor: a) not stockpile dirt on the beach; b) properly cover and sand-bag all stockpiling beyond the beach to prevent runoff and siltation; c) not store any construction materials or waste where it may be subject to wave erosion and dispersion; d) promptly remove any and all debris from the beach that results from construction or demolition materials to an appropriate disposal site; e)

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implement measures to control erosion at the end of each day's work; and f) not allow any mechanized equipment in the intertidal zone at any time.

IV. Findings and Declarations.

A. Project Description and Location

The project site is located at 24300 Malibu Road, Malibu on a 6,490 sq. ft. lot along Amarillo Beach seaward of Malibu Road. (*Exhibits 1 and 2.1*) The applicant proposes to demolish the residence and garage. A new 4,275 sq. ft., two story, single family residence with attached 440 sq. ft. two car garage is proposed to be constructed that includes a 246 sq. ft. storage loft; 1,366 sq. ft. of exterior decks, and new sewage disposal system. In the front yard, the applicant proposes to construct new garden walls about 60 foot long, 3 1/2 foot high, along the street and a new driveway. Below the residence, new steps and a landing platform to the beach are proposed. To support the residence, 15 new concrete caissons will be installed; some of the caissons will be landward of the bulkhead. To protect the new septic system, some caissons, the garden wall, and Malibu Road, a new wooden bulkhead, 37 feet long with end wall, seaward of the existing western portion of the bulkhead is proposed to be constructed to connect with the existing eastern portion of the bulkhead. Because the existing 62 foot long wood eastern portion of the bulkhead is inadequate to prevent damage to the bulkhead and the septic system from storm conditions similar to those conditions existing during the 1982 - 1983 storm events, the applicant proposes to install one row of rock about five (5) feet seaward of the base of the bulkhead supported by one and one half (1 1/2) foot thick layer of filter rock. An overtopping rock blanket will also be installed along the 62 foot long existing bulkhead. Proposed grading includes 45 cubic yards of cut and 45 cubic yards of fill balanced on site. (*Exhibits 2.2-11*)

Vertical public access to Armarillo Beach is located within about 100 ft. west of the subject site between 24314 and 24320 Malibu Road and again about 1000 feet west at 24500 Malibu Road. These public accessways have been operated and maintained by Los Angeles County since the late 1960's. To the north of the subject site is Malibu Lagoon State Recreation Area, also known as Bluffs Park, which overlooks the site.

The Los Angeles County Malibu Land Use Plan has designated the site as Residential III B, which allows 4 - 6 dwelling units per acre. The existing parcel and residence is, therefore, considered non-conforming regarding parcel size according to the Land Use Plan.

B. Shoreline Protective Devices

Along with the existing residence and septic system, a 99 foot long wooden bulkhead exists constructed in two non-continuous sections joined by a seven

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(7) foot long perpendicular wall all located beneath the existing residence. As noted above, the applicant proposes to modify the bulkhead in two ways. First, a new 37 foot long wooden bulkhead with an eighteen (18) foot long end wall, on the western portion of the property is proposed to be constructed. This new bulkhead is proposed to be located seven (7) feet seaward of the existing bulkhead located on western portion of parcel. Second, because the existing wood bulkhead on the eastern portion of the parcel is not adequate to prevent damage to the bulkhead and septic system during significant storm events, the applicant proposes to install one row of rock supported by filter rock extending about five (5) feet seaward of the base of the 62 foot long existing eastern portion of the wood bulkhead and install an overtopping rock blanket along embankment above (*Exhibits 8 - 11*). The seaward extent of this proposed modified bulkhead with base rock will be about 37 feet seaward from the Malibu Road right-of-way. The existing bulkhead on the eastern portion of the property is located about 32 feet seaward from the Malibu Road right-of-way, while the existing western bulkhead is located about 25 feet seaward of the Malibu Road right-of-way. It is important to point out that an additional five foot seaward encroachment is proposed along the eastern section where a single row of base rock will be placed at the base of the bulkhead. On the western section a new bulkhead will encroach an additional seven feet seaward (without base rock). Therefore the maximum seaward encroachment proposed by the applicant is about 37 feet seaward of the Malibu Road right-of-way (*Exhibits 8 - 11*). It is also important to point out that the bulkhead is located beneath and about ten (10) feet landward of the building stringline and about seventeen (17) feet landward of the deck stringline. The bulkhead is necessary to protect the proposed septic system and Malibu Road according to Pacific Engineering Group, the applicant's consulting engineer. The bulkhead will also protect the garden walls and a number of caissons supporting the new residence.

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

As described in the discussion below, there is evidence that this development along this section of Amarillo Beach will require a shoreline protective device which has the potential to impact the natural shoreline processes. Therefore, it is necessary to review the proposed project for its consistency with Sections 30235, 30250(a), and 30253 of the Coastal Act and with past Commission action.

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

Section 30235 of the Coastal Act states:

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

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

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

Coastal Act Section 30253 states (in part):

New development shall:

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

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

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

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

The subject property is currently developed with a residence, septic system and bulkhead wall protecting the septic system and supporting the embankment of Malibu Road. The project involves the complete demolition of an existing single family residence, garage, septic system, and wood pile foundation. The applicant proposes to construct a new residence and garage which will, in effect, double the size of residential development on the subject parcel. The applicant proposes to retain the existing eastern portion of the bulkhead and strengthen it with rock, while a new bulkhead will be constructed seaward of the portion of the existing bulkhead on the western portion of the parcel (*Exhibits 8 -11*). The bulkhead is a single structure with two disjointed sections connected by a seven (7) foot perpendicular wall located across the back of the beach beneath the residence. The new bulkhead will protect an existing structure, Malibu Road. The applicant proposes to replace the septic system with a new septic tank, leachfield and future leachfield in the same embankment area beneath the residence. The proposed replacement bulkhead is needed to protect the embankment area where the existing and proposed septic tank and seepage pits will be located as well as Malibu Road (*Exhibit 7*). It will also protect the new garden walls, the new septic system, and offer some protection to a number of caissons supporting the new residence.

The project does not fall into two of the three categories in which a shoreline protective device must be permitted by the Commission under Section 30235. The existing and new bulkhead does not protect a public beach nor would it serve a coastal-dependent use. Residential structures, roads, and septic systems are not coastal dependent developments or uses pursuant to Section 30101 of the Coastal Act. The proposed improvement for the new bulkhead does not protect an existing residential structure because the project includes the demolition of an existing residence and the removal of the existing septic system. A new residence, about twice as large in size, is proposed to be constructed. However, the proposed bulkhead does protect an existing structure, Malibu Road.

The Commission has interpreted Section 30235, however, to allow shoreline protective devices to protect new development in danger of erosion where the new development constitutes 'infill' and where the shoreline protective device is designed to not have significant adverse impacts on the local shoreline sand supply. The issue of infill development (first test) is discussed further in Section IV.B.5., Past Coastal Commission Action, below. Most of this section of the report is focuses on the issue of whether or not the proposed overhaul of the bulkhead has been designed to eliminate or mitigate significant adverse effects on shoreline sand supply (second test).

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In addition, to assist in the determination of whether a project is consistent with Sections 30235, 30250(a), and 30253 of the Coastal Act, the Commission has, in past Malibu coastal development permit actions, looked to the certified Malibu/Santa Monica Mountains Land Use Plan (LUP) for guidance. The Malibu LUP has been found to be consistent with the Coastal Act and provides specific standards for development along the Malibu coast. For example, policies P166 and P167 provide, together with Coastal Act Section 30235, that revetments, seawalls, cliff retaining walls and other shoreline protective devices be permitted only when required to serve coastal-dependent uses, to protect existing structures or new structures which constitute infill development² and only when such structures are designed and engineered to eliminate or mitigate significant adverse impacts on the shoreline and sand supply.

Because Malibu Road is considered an existing structure, and the proposed replacement residence and septic system are considered in-fill development, as noted in Section IV.B.5. below, a shoreline protective device may be permitted. Therefore, the Commission finds that the proposed project meets the first test of Coastal Act Section 30235. The second test of Section 30235 will be discussed below.

Regarding Section 30250, the new development proposed in this project consists of the new residence, garage, and related developments noted above, and includes fifteen (15) new caissons, a new wooden bulkhead and end wall, four new bulkhead pilings, base rock and overtopping rock. Because an existing residence already exists on site with adequate public services, (i.e. public road access, water, electricity, and telephone) and surrounding properties are already developed with residential development, the Commission finds that the new development proposed in this application will be located within an existing developed area able to accommodate it. Thus, the Commission finds that the proposed project meets Section 30250 of the Coastal Act.

1. Proposed Project and Site Shoreline

The City of Malibu includes a 27 mile long narrow strip of coast that is backed by the steep Santa Monica Mountains. Unlike most of the California coast, the shoreline in Malibu runs from east to west and forms south-facing beaches. Amarillo Beach is located approximately two (2) miles west of Malibu Creek and is backed by coastal bluffs on the landward side of Malibu Road below the Bluffs Park. Amarillo Beach is developed with single family and multifamily residences. The majority of the residences are constructed on piles with retaining or bulkhead walls to stabilize the road fill and protect septic systems located beneath the residences. Generally, where shoreline protective devices are located adjacent to others on adjoining lots, they are contiguous or connected with one another. Along Malibu Road in the vicinity of the project site, a slope

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

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descends about 15 feet to existing wood bulkheads, and below that a sandy beach. The sandy beach is about 20 feet below the grade of Malibu Road.

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

The main sources of sediment for bluff backed beaches are the bluffs themselves, as well as the material that has eroded from inland sources and is carried to the beach by small coastal streams. While beaches seaward of coastal bluffs follow similar seasonal and semi-annual changes as other sandy beaches, they differ from a wide beach in that a narrow bluff backed beach does not have enough material to maintain a dry sandy beach during periods of high wave energy. Thus, unlike a wide sandy beach, a narrow, bluff backed beach may be scoured down to bedrock during the winter months. In the case of Amarillo Beach, a road was constructed at the base of the bluff area in the 1920's, and has thus, altered the natural process of shoreline nourishment which beaches such as Amarillo would expose the back of the bluff to frequent wave attack as the beach erodes. In a natural setting, this wave attack leads to eventual erosion and retreat of the lower portions of the bluff. The dynamic of bluff erosion and retreat results in landward movement of the beach's location and, in turn, eroded bluff material provides beach nourishment material to establish a new beach area. In the case of Amarillo Beach, the back of the beach has been fixed in part by Malibu Road and in part by shoreline protective devices that have been constructed on the beach to protect residential development.

a. Amarillo Beach is an Eroding Beach

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

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

Two studies regarding long-term trends in shoreline processes were reviewed. First, a U. S. Army Corps of Engineers 1994 Reconnaissance Report regarding the Malibu/Los Angeles County coastline concludes that Amarillo Beach is a narrow beach backed by a high bluff and frontage road. The Army Corps report forecasts long term shoreline retreat averaging a little less than one foot per year for Amarillo Beach.⁴ Second, a report prepared for the City of Malibu by Moffatt and Nichol, Engineers, dated June 30, 1992, was reviewed. This report concludes that this specific section of Amarillo Beach is retreating over the 1938 - 1988 time period; while, here the erosion rate is estimated at between 0.25 and 0.5 feet per year.

The applicant provided a report with two update letters that discussed the proposed project relative to wave uprush and shoreline processes. Wave Uprush Study by Pacific Engineering Group, dated April 30, 1997; Proposed Timber Bulkhead Repair and Re-Alignment, dated December 1, 1997; and Engineering Response to Coastal Commission Staff, dated January 5, 1998; all address the proposed project. Pacific Engineering Group identified wave uprush calculations, design waves, analyzed possible storm wave damage to the proposed structure, and provided recommendations for protection along Amarillo Beach. Pacific Engineering Group provides no conclusion regarding shoreline retreat or advancement along Amarillo Beach. The report does include the results of the Moffatt and Nichol Engineers 1992 report that Puerco Beach (sic, the subject site is actually located on Amarillo Beach) has experienced an average shoreline retreat of approximately 0.5 feet per year. The report does note that it is unknown at this time whether the retreat in the shoreline has since stopped or still continues. The Pacific Engineering Group report identifies the average mean high tide line location as surveyed July 14, 1945 on the subject site. This location is between 63 feet and 68 feet seaward from the landward property line along Malibu Road. A more recent survey of the mean high tide was not provided by the applicant.

Staff reviewed the proposed project against the above cited shoreline data. The data presented indicates that this section of Amarillo Beach is an eroding beach. The applicant's consultant has provided no significant analysis to the contrary. Studies performed by the U. S. Army Corp of Engineers indicate that Amarillo Beach is an eroding beach. More specifically, the Moffatt & Nichol report identifies this subject beach location as eroding between about 0.25 to 0.5 feet per year. Therefore, the Commission finds that Amarillo Beach is an eroding beach.

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

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

The other key factor in determining the impact of the bulkhead on the shoreline is the location of the proposed protective device in relationship to the expected wave runup. The existing 99 foot long vertical non-continuous bulkhead extends along the seaward side of the existing embankment area. As noted above, the proposed project will improve the entire bulkhead.

The existing eastern portion of the bulkhead beneath the residence is connected to the adjacent bulkhead on the adjoining property to the east. The adjoining bulkhead is located about five (5) feet landward of the subject bulkhead; an approximate six (6) foot long return wall angled at about 45 degrees connects these two bulkheads along the adjoining property boundaries. The applicant proposes to install a single row of rock at the base of this section of bulkhead, extending about five (5) feet further seaward. On the adjoining property to the east, rock extends about thirteen (13) feet seaward of the adjoining bulkhead and about eight (8) feet seaward of the subject bulkhead. While this adjoining rock is further seaward than the rock proposed to be installed on the subject property, this rock has a temporary nature as there are no records of a valid coastal development permit for this rock on the adjoining property. The new bulkhead on the western half of the subject property is proposed by the applicant to be located about seven (7) feet further seaward than the existing bulkhead it will replace. Installing a new bulkhead in this location would bring this section of the bulkhead in line with the existing bulkhead on the eastern half of the subject property. A return wall, 18 feet long, is proposed along the western property line to connect the new bulkhead to an existing concrete block wall along the adjoining property line. A concrete stairway on the adjacent property to the west is located between the subject return wall and a wooden bulkhead on the adjacent property to the west (*Exhibits 2.1 and 10*).

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

a. Mean High Tide Line

The data submitted by the applicant shows that the bulkhead is not located near or seaward of the documented positions of the Mean High Tide Line (MHTL). The MHTL is an ambulatory line that can vary greatly from summer to winter. In the Wave Uprush Report prepared by Pacific Engineering Group, the surveyed MHTL position on July 14, 1945 is illustrated. The report also states that the wave uprush study shows four additional mean high tide lines (1961, 1967, 1969, and 1997), however, a site plan providing this information was not provided. Further, the applicant has submitted two letters (dated September 16, 1987 and January 26, 1998) from the State Lands Commission which state that they do not presently assert any claims that the project intrudes onto sovereign

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lands or that it would lie in an area that is subject to the public easement in navigable waters (*Exhibits 12 and 13*).

In order to confirm this information, staff independently reviewed a surveyed mean high tide line done in the summer of 1990 performed by Dulin & Boynton, Licensed Surveyors. A review of this survey indicates that the mean high tide line is seaward of the existing and proposed residence by about 30 feet and seaward of the proposed new western bulkhead and rock at the base of the existing eastern bulkhead by about 41 feet and 36 feet, respectively. Staff also reviewed the mean high tide line provided in the Wave Uprush Report by Pacific Engineering Group. The existing and proposed building is located between about 19 feet and 27 feet landward of the MHTL surveyed in 1945. The proposed seaward extension of the deck is located between 14 and 20 feet landward from the MHTL surveyed in 1945. The proposed new rock located at the base of the existing bulkhead and below the building will be about 25 feet and 30 feet landward of the 1945 MHTL. Therefore, the entire proposed project based upon the evidence available to date, appears to be some distance landward of the mean high tide line.

b. Wave Uprush

With respect to inundation of the beach fronting the sections of new bulkhead and base rock during high tide and low beach profile conditions in the winter, the data provided by Pacific Engineering Group, cited below, indicates that such inundation will occur. What remains unclear is the frequency at which the inundation will occur.

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

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

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

While natural sand beaches respond to wave forces by changing their configuration into a form that dissipates the energy of the waves forming them, seawalls are rigid and fixed, and at best can only be designed for a single wave condition. Thus, seawalls introduce a disequilibrium that usually results in the reflection of wave energy and the increased erosion seaward of the wall. The degree of erosion caused by the seawall is

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mostly a function of its reflectivity, which depends upon its design and location.⁵

Pacific Engineering Group, the applicant's consultant state in their April 30, 1997 report, that they "performed an investigation of historical shoreline conditions as surveyed by the County of Los Angeles Engineer between 1961 and 1974, and by the California State Lands Commission during 1961 to establish the design beach profile for the subject site." This investigation was used to assess the potential shoreline profile during normal and extreme storm conditions and make bulkhead design recommendations. As noted in the Wave Uprush Report, prepared by the Pacific Engineering Group, two wave designs were used on the design beach profile to determine the location of where these waves would break and the location of the most landward extent of the wave uprush. According to both wave design scenarios, the waves would break seaward of the design shoreline, however, wave uprush would extend five (5) seaward and five (5) feet landward of the Malibu Road right-of-way, if the property were not protected with a bulkhead. These wave break locations are about 37 and 27 feet landward of the existing eastern and western portions of the proposed bulkhead, which is located about 32 feet seaward of the Malibu Road right-of-way.

Given that there is strong evidence that Amarillo Beach is subject to long-term erosional trends, the frequency of wave exposure on the new bulkhead and base rock will increase as the beach width decreases with time. Furthermore, the new bulkhead, proposed to be located seven (7) feet seaward and the proposed base rock proposed to be located five (5) feet seaward to protect the existing bulkhead, will over time be subject to wave action during a typical storm event. This condition will only be exacerbated in the future given the documented long term erosional trends.

The Commission finds that the following are basic premises for siting coastal structures on sandy beaches:

- 1) The most important factor affecting the potential impact of a bulkhead on the beach is whether there is long-term shoreline retreat. (Note: The site specific survey data from Moffatt & Nichol, Engineers spanning the 1938 -1988 time frame indicates that the subject site on Amarillo Beach is suffering long-term shoreline retreat which averages about 0.25 to 0.5 feet per year). Such retreat is a function of sediment supply and/or relative sea level change. Where long-term retreat is taking place, and this process cannot be mitigated, then the beaches in front of bulkheads in these locations will eventually disappear.⁶

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

⁶ Tait, J.F. and G.B. Griggs, "Beach Response to the Presence of a Seawall: A Comparison of Field Observations," Shore and Beach, 1990, Vol. 58, No. 2, pp 11-28.

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2) One of the most critical factors controlling the impact of a bulkhead on the beach is its position on the beach profile relative to the surf zone. All other things being equal, the further seaward the bulkhead is located, the more often and more vigorously waves interact with it. The best place for a bulkhead, if one is necessary, is at the back of the beach where it provides protection against the largest of storms. By contrast, a bulkhead built out to or close to the mean high water line may constantly create problems related to frontal and end scour, as well as upcoast sand impoundment.

Based on the above discussion and facts concerning Amarillo Beach, the Commission finds that the proposed wooden bulkhead at its proposed location is not at the back of the beach and is not located as far landward as feasible. The applicant's proposed new bulkhead will be located seaward to create a continuous bulkhead across the subject property. The new bulkhead is proposed to be located about seven (7) feet further seaward in line with the existing bulkhead on the applicant's property. The result of the applicant's proposed location for the bulkhead is that it will be about seven (7) feet landward of the adjoining bulkhead on the adjoining property to the west and about five (5) feet seaward of the adjoining bulkhead on the adjoining property to the east. The applicant's proposed location for the new bulkhead on the western portion of the subject property will not minimize encroachment on the beach. Further, the base rock proposed for the eastern section of the existing bulkhead encroaches seaward another five (5) feet to protect the base of the existing bulkhead. Therefore, the bulkhead with base rock will encroach about ten (10) feet further seaward of the bulkhead on the adjoining property to the east. With the current septic system and leachfield design, the entire bulkhead could be located at least three and one half feet landward, or with a redesigned septic system and leach field, at least five feet landward. If the septic system were redesigned using a bottomless sand filter, less land area landward of the bulkhead is needed, thereby allowing the bulkhead to be located even further landward to further reduce seaward encroachment on the beach. Therefore, the proposed bulkhead could be located further landward than now proposed by the applicant. Alternatives to this seaward encroachment will be further discussed below in Section 4.

Based on the above discussion, the Commission finds that the proposed new wooden bulkhead and new base rock at the proposed location encroaches into an area of the beach that will be subject to an erosional trend. Furthermore, the Commission finds that Amarillo Beach is a narrow beach subject to an erosional trend. Therefore, the following discussion is intended to evaluate the impacts of the proposed bulkhead and the proposed base rock on the beach based on the above information which identified the specific structure design, the location of the structure, and the shoreline geomorphology.

3. Effects of the Shoreline Protective Device on the Beach

The proposed new 37 foot long wooden bulkhead and the 62 foot length of base rock along the existing bulkhead will be constructed on the sandy beach about 32 feet and 37 feet seaward of Malibu Road, respectively. An engineered bulkhead is typically built along straight sand beaches or low coastal bluffs where fill can be placed landward of the bulkhead to support roadways and other developments that are constructed on fill land. Therefore, the bulkhead structure functions as both a retaining structure and as protection from wave attack and wave runup.

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

a. Encroachment on the Beach

Shoreline protective devices, such as seawalls, bulkheads, revetments, groins, etc., all are physical structures which occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used for other beach purposes, such as recreation. If the underlying beach area is public beach, the public will not be able to use the beach area in the way it had prior to the placement of the device. This area will be altered from the time the protective device is constructed and the extent or area occupied by the device will remain the same over time, until the device is removed or is moved from its initial location. The beach area located beneath a shoreline protective device, referred to as encroachment area, is the area of the structure's footprint. This impact may be quantified as follows:

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

$$Ae = W \times E$$

The new residence proposed by the applicant will not encroach any further seaward than the existing residence. The applicant proposes to construct a shoreline protective device that encroaches further seaward. On the western portion of the property, a new wooden bulkhead is proposed to be located about seven (7) feet seaward across a 37 foot width. The encroachment area is 259 square feet of beach. On the eastern portion of the property, a row of base rock is proposed to be installed seaward of the existing bulkhead. This base rock placed on smaller filter rock will encroach about five (5) feet seaward across a 62 foot width. The encroachment area is 310 square feet of beach. Thus, the direct seaward encroachment impact of the applicant's proposed project will be a total of 569 square feet of sandy beach area.

b. Beach Scour

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

Seawalls usually cause accelerated erosion of the beaches fronting them and an increase in the transport rate of sand along them.⁷

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

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

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

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they seriously degrade the environment and eventually help to destroy the areas they were designed to protect.⁸

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

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

While seawalls may protect the upland, they do not hold or protect the beach which is the greatest asset of shorefront property. In some cases, the seawall may be detrimental to the beach in that the downward forces of water, created by the waves striking the wall rapidly remove sand from the beach.⁹

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

Armoring can cause localized additional storm scour, both in front of and at the ends of the armoring ... Under normal wave and tide conditions, armoring can contribute to the downdrift deficit of sediment through decreasing the supply on an eroding coast and interruption of supply if the armoring projects into the active littoral zone.¹⁰

It is generally agreed that where a beach is eroding, the erection of a seawall will eventually define the boundary between the sea and the upland. This result can be explained as follows. On an eroding shoreline fronted by a beach, a beach will be present as long as some sand is supplied to the shoreline. As erosion proceeds, the entire profile of the beach also retreats. This process stops, however, when the retreating shoreline comes to a seawall. While the shoreline on either end of the seawall continues to retreat, shoreline retreat in front of the seawall stops. Eventually, the shoreline fronting the seawall

8 Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway

Institute of Oceanography), pg. 4.

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

10 Coastal Sediments '87.

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protrudes into the water, with the winter Mean High Tide Line (MHTL) fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the seawall.

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

Seawalls inhibit erosion that naturally occurs and sustains the beach. The two most important aspects of beach behavior are changes in width and changes in the position of the beach. On narrow, natural beaches, the retreat of the back beach, and hence the beach itself, is the most important element in sustaining the width of the beach over a long time period. Narrow beaches, typical of most of the California coast, do not provide enough sacrificial sand during storms to provide protection against scour caused by breaking waves at the back beach line. This is the reason the back boundary of our beaches retreats during storms.¹¹

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

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

The Commission has observed this phenomenon up and down California's coast, where a seawall has successfully halted the retreat of the shoreline, but only at the cost of usurping the beach. For example, at La Conchita Beach in Ventura County, placement of a rock revetment to protect an existing roadway has caused narrowing of the existing beach. Likewise, at City of Encinitas beaches in San Diego County, construction of vertical seawalls along the base of the bluffs to protect existing residential development above, has resulted in preventing the bluffs' contribution of sand to the beaches, resulting in narrowing. Although this may occur slowly, the Commission concludes that it is the inevitable effect of constructing a seawall on an eroding shoreline. In such areas, even as erosion proceeds, a beach would be present in the absence of a seawall. As set forth in earlier discussion, Amarillo Beach is eroding and, therefore, the seaward encroachment effects of the proposed new bulkhead and base rock could have potentially adverse impacts as the beach erodes further landward and as the protective device becomes a dominant component of the shoreline system.

¹¹ Letter Report dated March 14, 1994 to Coastal Commission staff engineer Lesley Ewing from Dr. Craig

Everts, Moffatt and Nichol Engineers.

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The above cited studies thus confirm that beach scour is a likely result of the placement of shoreline protective devices in an area subject to wave runup. In this case, the evidence has demonstrated that Amarillo is an eroding beach. Furthermore, there is information to suggest that the proposed base rock and new bulkhead will be routinely subject to wave action during the winter season, as the beach erodes over time.

The applicant's consultant, Pacific Engineering Group, has stated that wave uprush will reach between five (5) feet seaward and five (5) feet landward of the Malibu Road right-of-way. This estimate of wave runup does not take into account worst case severe storm events. If an eroded beach condition occurs with great frequency due to the placement of the base rock and new bulkhead, this site would also accrete at a slower rate. During periods of beach erosion, this site would erode more. Therefore, based on the report prepared by Noble Consultants which cites the Army Corp of Engineers 1994 Malibu study and the analysis of the Pacific Engineering Group, the Commission finds that over time, the new bulkhead and base rock would be acted upon more frequently during winter months.

The impacts of potential beach scour is important relative to beach use for two reasons. The first reason involves public access. As explained in the subsequent section relating to public access, Amarillo Beach has historically been used by the public. The subject property is located within 100 feet from an existing vertical public accessway that has been maintained and operated by Los Angeles County since approximately the 1960's. If the beach scours at the base of the bulkhead and base rock, even minimal scouring in front of the 99 foot long wall will translate into a loss of beach sand available (i. e. erosion) at a more accelerated rate than would otherwise occur under a normal winter season if the beach were unaltered. The second impact relates to the potential turbulent ocean condition. Scour at the face of the bulkhead and base rock will result in greater interaction with the wall, and thus, make the ocean along Amarillo beach more turbulent than it would along an unarmored beach area. Therefore, the Commission finds that the proposed bulkhead and base rock will cause greater erosion than under natural conditions and less rapid beach recovery through accretion.

c. End Effects

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

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constructed, and, thus, wave energy is also directed to the return walls causing end erosion effects.

The literature on coastal engineering repeatedly warns that unprotected properties adjacent to the seawall may experience increased erosion. Field observations have verified this concern.¹² Although it is difficult to quantify the exact loss of material due to end effects, in a paper written by Gerald G. Kuhn of the Scripps Institution of Oceanography, he concludes that erosion on properties adjacent to a rock seawall is intensified when wave runup is high.

An extensive literature search on the interaction of seawalls and beaches was performed by Nicholas Kraus in which he found that seawalls will have effects on narrow beaches or beaches eroded by storm activity, such as Amarillo. His research indicated that the form of the erosional response to storms that occurs on beaches without seawalls that are adjacent to beaches with seawalls is manifested as more localized toe scour and end effects of flanking and impoundment at the seawall.¹³ Dr. Kraus' key conclusions were that seawalls could be accountable for retention of sediment, increased local erosion and increased end erosion. Dr. Kraus states:

At the present time, three mechanisms can be firmly identified by which seawalls may contribute to erosion at the coast. The most obvious is retention of sediment behind the wall which would otherwise be released to the littoral system. The second mechanism, which could increase local erosion on downdrift beaches, is for the updrift side of the wall to act as a groin and impound sand. This effect appears to be primarily theoretical rather than actualized in the field, as a wall would probably fail if isolated in the surf zone. The third mechanism is flanking i.e. increased local erosion at the ends of walls.

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

Results to date indicate that erosion at the ends of seawalls increases as the structure length increases. It was observed in both the experimental results and the field data of Walton and Sensabaugh (1978) that the depth of excess erosion is approximately 10% of the seawall length. The laboratory data also revealed that the along-coast length of excess erosion at each end of the structure is approximately 70% of the structure length.¹⁴

¹² Paper by Gerald G. Kuhn of the Scripps Institute of Oceanography entitled "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California" (1981).

¹³ "Effects of Seawalls on the Beach", published in the Journal of Coastal Research, Special Issue #4, 1988.

¹⁴ "Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties" by W.G. McDougal, M.A. Sturtevant, and P.D. Komar in Coastal Sediments '87.

A more comprehensive study was performed over several years by Gary Griggs which concluded that beach profiles at the end of a seawall are further landward than natural profiles.¹⁵ This effect appears to extend for a distance of about 6/10 the length of the seawall and represents both a spatial and temporal loss of beach width directly attributable to seawall construction. In the case of this project the scour effects could be as great as 60 feet (6/10 of 99 feet = 60 feet). These end effects would be expected only when the seawall was exposed to wave attack and, under equilibrium or accreting beach conditions, this scour would disappear eventually during post-storm recovery. However, such cases of renourishment of end areas are rare for erosional beaches.

With respect to the subject site, the adjacent property downcoast has a retaining wall which appears to protect their septic system and Malibu Road which is located about five (5) feet landward of the existing bulkhead and about ten (10) feet landward of the seaward edge of the proposed base rock. The adjacent site upcoast is developed with a residence and has a bulkhead which also appears to protect their septic system and Malibu Road. This bulkhead is located about seven (7) feet seaward of the proposed new bulkhead on the western portion of the property. These two bulkheads are not connected as an existing concrete stairway separates them.

The applicant's consultant, Pacific Engineering Group, submitted information regarding the potential end effects of the proposed bulkhead and the base rock. The updated Wave Uprush Study dated December 1, 1997 states:

The properties on each side of the project both have timber bulkheads. The bulkhead on the neighbor's property to the west is located approximately 8 feet (actually 7 feet) seaward of the proposed extension. The bulkhead on the neighbor's property to the east is located 4 (actually 5) feet landward of the existing eastern section of bulkhead, and the location of the neighbor's bulkheads, end effects and additional scour caused by angled wave approach would be in-significant.

It is important to note that west end of the proposed bulkhead will include a return wall connected to a concrete block wall on the adjoining property. A concrete stairway separates the subject bulkhead from the adjoining bulkhead to the west. The existing bulkhead on the eastern portion of the subject parcel is connected to the adjoining property with an angled bulkhead. As a result, the end effects caused by angled wave approaching from the east will be insignificant.

d. Retention of Potential Beach Material

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

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

A common result of sea wall and bulkhead placement along the open coastline is the loss of the beach fronting the structure. This phenomenon, however, is not well understood. It appears that during a storm the volume of sand eroded at the base of a sea wall is nearly equivalent to the volume of upland erosion prevented by the sea wall. Thus, the offshore profile has a certain "demand" for sand and this is "satisfied" by erosion of the upland on a natural beach or as close as possible to the natural area of erosion on an armored shoreline...¹⁶

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

e. Interruption of Onshore and Longshore Processes

If a bulkhead or seawall is built on an eroding beach and the device eventually becomes a headland jutting into the ocean, the seawall can function like a groin. Thus, the revetment may modify or interrupt longshore transport and may cause the upcoast fillet of deposition and downcoast indenture of erosion which is typical of sand impoundment structures. Over the long run, the applicant's proposed project has the potential to produce such impacts on the coastline. However, it is difficult to precisely quantify these impacts.

The proposed project is located on Amarillo Beach, and as proposed, the seaward extent of the proposed bulkhead and base rock would range from approximately 32 feet to 37 feet from the Malibu Road right-of-way. As discussed above, there is evidence that the bulkhead and base rock will be subject to wave action due to its physical location on the beach and due to the beach's erosional trend overtime. In considering the proposed bulkhead and

¹⁶ National Academy of Sciences, Responding to Changes in Sea Level: Engineering Implications, National Academy Press, Washington D.C., 1987, page 74.

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seawall the Commission must review the current development of the beach. Amarillo Beach has been developed with single family homes that were built between 1924 and the late 1940's. The subject site was developed with the existing residence in the 1965. Thus, Amarillo is a built out stretch of the Malibu coast.¹⁷

As stated previously, staff has visited the site on several occasions, walked Amarillo Beach and reviewed aerial photographs taken at several different times. The homes located within the immediate vicinity have bulkheads and seawalls that encroach both more seaward and more landward in comparison to the applicant's proposed bulkhead. Thus, the seaward encroachment proposed by this project has the potential to interrupt sand movement as part of the onshore and longshore processes. Therefore, for all the reasons explained above, the Commission finds that the proposed project will create adverse impacts on shoreline sand supply and is inconsistent with the applicable policies of the Coastal Act referenced above. Thus, the proposed bulkhead replacement does not meet the second test of Coastal Act Section 30235.

4. Alternative Designs

It has been found that the further landward the bulkhead is located, the less beach scour will result. The alternative of re-siting of the proposed bulkhead to a more landward location will in reducing the effects on the beach caused by wave runup during winter storms that occurred during average and high tides. Lessening the wave energy when it reaches the relocated bulkhead will minimize the beach scour in front of the relocated bulkhead.

The applicant initially proposed to retain the existing wooden bulkhead along the eastern portion of the property, however, the applicant's consulting engineer, Pacific Engineering Group, believed the existing eastern bulkhead was of questionable structural integrity. In the Pacific Engineering Group report dated April 30, 1997, the engineer stated:

The existing timber bulkhead is located under the existing residence. It is a vertically sheathed timber bulkhead of questionable structural integrity.

The engineer recommended that a small engineered rock revetment be placed seaward of the bulkhead to reinforce the bulkhead and prevent damage to the septic system should the bulkhead fail in a storm. Staff requested the applicant to consider alternatives to retaining the existing bulkhead including, but not limited to, replacing the bulkhead with a similar one, and placing a small rock revetment seaward of the existing bulkhead, as recommended by the applicant's engineer. Because the alternative of retaining the bulkhead and adding a rock revetment would create a seaward encroachment, staff later again suggested

¹⁷ Built out beaches within the Malibu area are discussed in greater detail under Section IV. B5.

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the applicant consider a revision of the project to simply remove and replace the bulkhead in the same location, among other alternatives.

In response, Pacific Engineering Group stated in their Letter Update regarding the "Proposed Timber Bulkhead Repair and Re-Alignment", dated December 1, 1997 that:

The second section (west section) of the existing bulkhead is to be abandoned, and a new section constructed in line with the existing eastern section of bulkhead. This is desirable for the following reasons:

Constructing the new extension in-line with the existing eastern section of bulkhead will reduce the amount of reflected wave uprush and turbulence in this area and thus reduce the amount of isolated scour at the base.

Construction of this vertical bulkhead extension on the west side would protrude 7 feet seaward from the location of the existing sub-standard western section. A rock revetment would protrude approximately 25 feet seaward from this section, encroaching on access to the sandy beach area, thus the vertical bulkhead would permit approximately 18 more feet of lateral access on the beach.

The properties on each side of the project both have timber bulkheads. The bulkhead on the neighbor's property to the west is located approximately 8 (actually about 7) feet seaward of the proposed extension. The bulkhead on the neighbor's property to the east is located 4 (actually about 5) feet landward of the existing east section of the subject bulkhead. With the extension of the bulkhead in-line with the existing eastern section of bulkhead, and the location of the neighbor's bulkheads, end effects and additional scour caused by angled wave approach would be in-significant.

The amount of beach sand lost to littoral environment resulting from the installation of the extension of the bulkhead would be 24 cubic yards during summer conditions, and 51 cubic yards during winter storm conditions. This sand would have been provided by the sand behind the extension. The amounts listed above are considered insignificant compared to the 160,000 cubic yards available annually to the littoral drift.

Although, the applicant's consultant concluded that the extension in front of the abandoned sub-standard west section of bulkhead will have an insignificant effect on the littoral and scour processes on the adjacent properties, such impacts can be reduced further.

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There is an alternative to eliminate the seaward encroachment of the proposed base rock and reduce the seaward encroachment of the proposed western bulkhead. Replacing this eastern section of bulkhead with a new bulkhead in the same location, or further landward, which is deeper and higher will adequately protect the septic system and Malibu Road. Staff asked the applicant why this section of bulkhead was not proposed to be reconstructed rather than adding base rock and overtopping rock. The response provided in the Pacific Engineer Group update letter dated January 5, 1998, indicates the issue is one of economics.

Rebuilding the eastern 63 feet of the existing bulkhead would cost approximately \$ 80,000.00. Installing the rock toe and rock backfill blanket would cost approximately \$ 200.00 per linear foot of bulkhead length or approximately \$ 12,600.00. By installing the rock toe and blanket, the owner saves substantially for similar protection.

In addition, Pacific Engineering Group believes that the proposed base rock is the best and most appropriate protective device for this property. Their update letter goes on to state:

It is the opinion of this office that the best and most appropriate protective device for this property is repairing and heightening the eastern portion of the existing bulkhead, and installing a rock blanket at the base of the existing bulkhead to protect it from isolated base scour. Such a blanket is comprised of one layer of filter rock, and one layer of Cap Rock 5 feet wide. In-lieu of heightening the bulkhead a full 3 feet to elevation + 15.25 ft. MSL, a rock blanket can be installed behind the existing bulkhead to protect the backfill from overtopping of the bulkhead by wave uprush. The above will not increase wave reflective energy caused by the existing bulkhead. The addition of the cap rock blanket at the base will absorb a small percentage of the reflective wave energy in addition to protecting the bulkhead from being undermined.

As previously cited, the further seaward a shoreline protective device is located the greater the potential for scour and erosion of the beach fronting the structure. On an eroding beach, such as Amarillo, the scour and erosional effects of a seawall will only increase over time. In order to minimize the scour and erosional effects of a shoreline structure, it must be located as far landward on the beach as is feasible. In this case, an alternative design which relocates the wooden bulkhead as far landward as feasible will further reduce potential for scour and erosional effects on the beach. Therefore, Special Condition Number One (1), requires that the a new bulkhead be constructed as far landward as feasible with a redesigned septic system utilizing a bottomless sand filter. To connect the new bulkhead to the bulkhead on the adjoining property to the east, an end wall will be constructed seaward from the proposed bulkhead to join the existing bulkhead on the adjoining property to the east. The applicant proposes to construct an extension of the end wall on the west portion of the bulkhead;

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this end wall extension will now be shorter to connect it to a new bulkhead located further landward. This proposed location will be located further landward of the bulkhead located on the adjacent property to the east (*Exhibit 14*). The precise location of the most landward location of the proposed bulkhead and the length of the two end walls will be determined after the septic system is redesigned as noted above and approved in concept by the City of Malibu Department of Environmental Health. Another option is for the adjoining property owner to remove the connecting bulkhead and construct an approximate five (5) foot length of bulkhead to complete a connection to the subject bulkhead, with the necessary permits. Such a connection would eliminate the need for the short length of connecting bulkhead angled seaward at about 45 degrees as it would no longer be necessary.

The revised bulkhead, as required by Special Condition Number One (1), will result in a net reduction of existing beach encroachment. An estimate of the net reduction of beach encroachment will be made on the basis of a similar project. Application number 4-98-158, O'Conner, proposes to demolish an existing residence and construct a new 4,300 square foot residence and a new septic system using the bottomless sand filter design. According to the contractor for the O'Conner project, this type of septic system requires 50 % of the area necessary for a conventional leachfield septic system. On a conceptual basis, staff estimates that the new bulkhead could be relocated landward about ten (10) feet by replacing the proposed leachfield septic system with a bottomless sand filter system. (The proposed 1,125 square feet of leachfield with an expansion area is estimated to be reduced to 562 square feet with a width of about six feet necessary for a bottomless sand filter system.)

With the redesigned bottomless sand filter septic system, the new bulkhead on the western portion of the property will be located at least about one (1) foot further seaward across a 37 foot width than the existing bulkhead. Therefore, the net reduction of encroachment area compared to the existing western bulkhead is at least 37 square feet of beach. On the east portion of the property, the new bulkhead will also be installed landward of the existing bulkhead. This bulkhead location will be set back about ten (10) feet landward across a 62 foot width. The reduction of this encroachment area is 620 square feet of beach. Thus, the direct or net encroachment impact of this alternative project is less than zero, as it will open up about an additional 657 square feet of beach area. This compares favorably to the applicant's proposed bulkhead which will encroach on an additional 569 square feet of beach area. Constructing the new bulkhead as far landward as feasible will reduce the amount of reflected wave uprush and turbulence in this area, and thus, reduce the potential for isolated scour at the base.

The alternative revised bulkhead, as conditioned, will be located about fifteen (15) feet landward of the bulkhead on the adjoining property to the west. Because a concrete stairway exists on the adjoining property between the two bulkheads, a return wall is proposed on the subject property to connect to an

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existing concrete block wall along the western property line. With the location of the alternative design bulkhead, the return wall on the west side will be shorter. The construction of a short end wall of about five (5) feet, may be required to connect the new bulkhead, required by Special Condition Number One, to the existing bulkhead on the adjoining property to the east. The result of the new configuration created by the alternative bulkhead location, as conditioned, will be that the applicant's bulkhead will be located further landward than the existing bulkheads on the adjoining properties.

Regarding the proposed new sewage disposal system, the revised bulkhead's location, as conditioned, will require a redesign of the applicant's system. Staff contacted Lawrence Young, the Environmental Health Specialist for the City of Malibu about the possibility of redesigning the proposed septic system to relocate it landward to accommodate the alternative bulkhead location. The proposed septic system can be relocated landward within an area that is narrower between the required bulkhead location and the right-of-way of Malibu Road. There are two options. The first option is to move the proposed leachfields landward about one and one half feet by lengthening the leachfields or moving them and the septic tank further landward. Mr. Young believed such an option was "possible". The second option is to construct a bottomless sand sewage disposal system which requires less land area than the proposed septic tank and leachfield system. This system also eliminates the need for a large future leachfield area. Mr. Young believed that such a system would allow additional area between the bulkhead and the City's required five foot setback requirement to accommodate the alternative bulkhead design. It is important to note that the Commission is reviewing another application for a proposed residence replacement and a bottomless sand filter sewage disposal system (Application number 4-98-158, O'Conner) which has received an "Approval In Concept" from the City of Malibu Environmental Health Department. Further, the Commission has approved such a septic system in Coastal Permit Number 4-97-071, Schaeffer. Thus, the applicant will have to redesign the proposed septic system to provide adequate sewage disposal for the proposed residence while allowing the new bulkhead to be located as far landward as feasible. In order to construct an adequate sewage disposal system located landward of the required bulkhead, Special Condition Number One (1) requires the applicant to submit revised plans. These plans will be "Approved In Concept" by the City of Malibu and will relocate and redesign the sewage disposal system to locate is as far landward as feasible.

Another significant advantage of the conditioned bulkhead location, as required by Special Condition Number One (1), is that as Amarillo Beach erodes the bulkhead will be located at the back of the beach, as far as feasible, thereby minimizing scour and erosion on the beach. Therefore, the proposed replacement of the existing bulkhead in the location required by Special Condition Number One (1) and illustrated in Exhibit 14 is the preferred and feasible alternative. Therefore, the Commission finds that constructing a new bulkhead as far landward as feasible with connecting end walls will minimize to

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the maximum extent feasible any significant adverse impacts including beach scour effects of the entire bulkhead.

Therefore, the Commission finds that constructing a new wooden bulkhead in a landward location without base rock as required by Special Condition Number One (1), will minimize the beach scour effects of the bulkhead and ensure the project will not result in any significant adverse impacts on the shoreline. Therefore, the proposed project, as conditioned, is consistent with Sections 30235, 30250, and 30253 of the Coastal Act and with past Commission action.

5. Past Commission Actions on Residential Shoreline Development

Many portions of the Malibu coastline are intensely developed with single family residences. The eastern portion of the Malibu coastline including Las Tunas, Big Rock, La Costa and Carbon beaches, form an almost solid wall of residential development along a five mile stretch of the shoreline. This residential development extends over the sandy and rocky beach in many areas and most of the residences have shoreline protective devices such as rock revetments and concrete or timber seawalls. This residential development and their associated protective devices prevent access to the coast, obscure the views to the beach and water from Pacific Coast Highway, interrupt shoreline processes and impact the fragile biological resources in these areas.

Just west of Malibu Lagoon, where the subject site is located, there is another stretch of residential development extending approximately three miles along the coastline including the Malibu Colony area and the residential development along Malibu Road. Here again, residential development forms an almost continuous wall of houses along the shoreline protected by seawalls. From Corral Beach west there is less development on the shoreline due to high bluffs and public beach areas. However, there are two pockets of residential development in western Malibu that extend over the sandy beach and also have shoreline protective devices: the Malibu Cove Colony and Escondido beach road area just east of Point Dume and the mile long stretch of homes on Broad Beach¹⁸ just west of Zuma Beach.

Given Malibu's close proximity to the Los Angeles metropolitan area it is understandable why the Malibu coastline has experienced such intensive development of its coastline over the past 50 years. The vast majority of this development took place prior to the passage of Proposition 20 which established the Coastal Commission and the 1976 Coastal Act. As previously stated, section 30235 of the Coastal Act allows for the construction of protective devices only if the device serves to protect coastal dependent uses, or to protect existing structures or public beaches in danger from erosion. The construction of

¹⁸ Staff notes that homes located along the eastern end of Broad Beach are protected by natural, existing coastal dune fields rather shoreline protective devices.

protective devices to protect new residential development is generally not allowed under this Coastal Act section. The majority of the residential development described above required some type of shoreline protective device in order to be developed. Therefore, it is safe to assume under this policy and the other resource protection policies of the Coastal Act that this type of development along Malibu's coastline would either not have been approved or would be developed in a much different configuration or design than it is today.

The Commission has previously permitted a number of new residential developments with protective devices on the Malibu coast, but only when that development was considered "infill" development. The developed portions of the Malibu coastline include a number of vacant parcels between existing structures. Typically, there are no more than one to two vacant lots between existing structures. Infill development can be characterized as the placement of one to two residential structures on one to two lots with protective structures provided those protective structures tie into adjacent protective structures.

The Commission recognized that the infilling of residential development between existing structures would not result in significant adverse impacts to coastal resources within these existing developed shoreline areas. The Commission also acknowledged that the gaps these vacant parcels created between protective devices focused wave energy between these structures resulting in erosion of the vacant property between the structures and potentially endangering infrastructure along Pacific Coast Highway or adjacent frontage roads and endangering adjacent structures. Faced with the prospect of denying beach front residential development with protective devices due to inconsistency with section 30235 of the Coastal Act, the Commission has allowed "infill" development through permit actions on beach front development in Malibu. The Commission found that infilling these gaps would prevent this type of focused shoreline erosion and would not significantly further impact shoreline processes or adversely impact other coastal resources given the prevailing development pattern along these sections of the Malibu coast.

On Amarillo Beach there are approximately 180 homes along a 2.1 mile long stretch of sandy beach. The area of the proposed development can only be characterized as a developed beach. The proposed development of one single family residence with a wooden bulkhead and septic system can clearly be considered as an infill development within an existing developed area.

a. Seaward Encroachment

Section 30251 of the Coastal Act states:

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

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

Through Coastal Act Sections 30210, 30211, 30251 and 30253 noted above and in other sections of this report, the Commission has developed the "stringline" test to control the seaward extent of buildout in past permit actions. As applied to beachfront development, the stringline limits 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 adjacent structures and decks.

The Commission has applied this stringline test to numerous past permits involving infill 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 and to protect public views and scenic quality of the shoreline as required by Section 30251 of the Coastal Act.

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

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

In 1986 the Commission certified the Los Angeles County Malibu/Santa Monica Mountains Land Use Plan which also contains specific policies addressing infill shoreline development:

Policy 153 ...In a developed area where new construction is generally considered infilling and is otherwise consistent with LCP policies the proposed new structure may extend to the stringline of the existing structures on each side.

Policy 166 ...Revetments and seawalls shall be permitted when required to serve coastal dependent uses or to protect existing structures or new structures which constitute infill development.

The intent of the stringline policies was to limit infill development to only existing developed shoreline areas and limit the encroachment of new structures out onto the beach. In past permit actions in the Malibu area, the Commission has typically limited infill development to the construction of one to two structures on one to two vacant parcels between existing structures.

The applicant has submitted a plan with a stringline connecting the existing residences on either side of the project site. The plan indicates that the proposed first and second floors and seaward deck structures are located behind the stringline with the adjacent buildings. Therefore, the Commission finds that the proposed project does conform to this setback. As proposed, the additions to this project will not extend new development further seaward than adjacent development, minimizing potential impacts to public access opportunities, public views and the scenic quality along the sandy beach.

Further, the Commission reviews the publicly accessible locations along adjacent public roads and the sandy beach where the proposed development is visible to assess visual impacts to the public. The Commission examines the building site and the size of the building. The existing residence and solid wall along Malibu Road already blocks public views from the highway to the beach and ocean. Although the proposed two story replacement residence may be visible from the public sandy beach, the existing one story residence already blocks inland views from the beach. Moreover, the more scenic inland views of the Santa Monica Mountains as viewed from the water are well above the proposed development as viewed from locations further offshore and at low tide. Thus, the proposed two story residence will not adversely affect existing public views.

Relative to the proposed seawall, Special Condition Number One (1) requires the applicant to re-construct and re-locate the entire bulkhead about ten (10) feet landward of the existing eastern bulkhead, for all of the reasons discussed above. As stated previously, the adjacent properties to the west and to the east have shoreline protective devices protecting their septic systems and residential structures. The Commission notes that should either property owner apply for a coastal development permit involving a seawall, such structures should be sited to conform to a stringline as drawn from the corners of the bulkhead proposed under this application. As a result, the Commission finds that the proposed development, as conditioned relative to seaward encroachment, is consistent with the relevant sections of the Coastal Act.

Therefore, the Commission finds that the proposed project, as conditioned, will have no individual or cumulative impacts on public access on the sandy beach

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seaward of the residence or public views to and along the coast, and is thus, consistent with Sections 30210, 30211, 30212, and 30220 of the Coastal Act.

6. Conclusion

In conclusion, the Commission finds that the proposed new bulkhead on the western portion of the parcel and the proposed base rock will have adverse impacts on the shoreline processes if the bulkhead is not relocated to a more landward location and the base rock eliminated. In addition, there is substantial evidence that the applicant's proposed project could adversely impact sand supply and public access as a result of beach scour, loss of beach material, and interruption of onshore and longshore processes. As conditioned to relocate and redesign the proposed bulkhead landward about ten (10) feet from the location proposed by the applicant, the proposed project will minimize beach scour and as redesigned will not result in adverse impacts to the shoreline. The replacement of the bulkhead, as conditioned, in the most landward location feasible is the preferred alternative relative to the issues discussed above, mitigates the adverse impacts on sand supply to the greatest extent feasible, and will not result in any seaward encroachment on the beach, as compared to the location proposed by the applicant. Therefore, the Commission finds that the proposed project, as conditioned, meets the first and second tests of Section 30235.

In addition, the Commission finds that the proposed residence and additions of new development are located within an existing developed area able to accommodate it and are considered infill development. Therefore, the Commission finds that, only as conditioned, is the proposed project consistent with Section 30250 Coastal Act. The Commission also finds that the proposed project, as conditioned, will minimize risks to life and property in areas of flood hazard and assure stability and structural integrity that will not require the construction of protective devices that would substantially alter natural landforms along bluffs. Thus, the Commission finds that, only as conditioned, the proposed project is consistent with Sections 30235, 30250, and 30253 of the Coastal Act.

C. Public Access.

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

Section 30210 of the Coastal Act states:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent

with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211 of the Coastal Act states:

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

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

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

...

(2) adequate access exists nearby...

Section 30220 of the Coastal Act states:

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

1. Public Access

Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, section 30212 of the Coastal Act requires that public access to the sea be provided, except where adequate access exists nearby. Section 30211 provides that development not interfere with the public's right of access to the sea including the use of dry sand and rocky coastal beaches. Section 30220 of the Coastal Act requires coastal areas suited for coastal recreational activities, that cannot be provided at inland water areas, be protected.

All beachfront projects requiring a Coastal Development Permit must be reviewed for compliance with the public access provisions of Chapter 3 of the Coastal Act. The Commission has required public access to and along the shoreline in new development projects and has required design changes in other projects to reduce interference with access to and along the shoreline. The major access issue in such permits is the occupation of sand area by a structure, in contradiction of Coastal Act Sections 30210, 30211, and 30212. However, a conclusion that access may be mandated does not end the Commission's inquiry. As noted, Section 30210 imposes a duty on the Commission to administer the public access policies of the Coastal Act in a manner that is

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"consistent with ... the need to protect ... rights of private property owners..." The need to carefully review the potential impacts of a project when considering imposition of public access conditions was emphasized by the U.S. Supreme Court's decision in the case of Nollan vs. California Coastal Commission. In that case, the court ruled that the Commission may legitimately require a lateral access easement where the proposed development has either individual or cumulative impacts which substantially impede the achievement of the State's legitimate interest in protecting access and where there is a connection, or nexus, between the impacts on access caused by the development and the easement the Commission is requiring to mitigate these impacts.

The Commission's experience in reviewing shoreline residential projects in Malibu indicates that individual and cumulative impacts on access from such projects can include among others, encroachment on lands subject to the public trust, thus, physically excluding the public; interference with natural shoreline processes which are necessary to maintain publicly-owned tidelands and other beach areas; overcrowding or congestion of such tideland or beach areas; and visual or psychological interference with the public's ability to use beach access and cause adverse impacts on public access.

As proposed, this project (including deck area) would extend out onto a sandy beach area about seventeen (17) feet and about 48 feet from the landward property line at Malibu Road. The new residence and garage and related developments noted above, including fifteen (15) new caissons, a new wood bulkhead, four new bulkhead pilings, base rock and overtopping rock, does constitute new development under the Coastal Act..

Due to the above adverse impacts of shoreline protective structures on public access, as outlined above, the proposed bulkhead must be judged against the public access and recreation policies of the State Constitution, Sections 30210, 30211, 30212, and 30220 of the Coastal Act. Along the California coast, the line between land and ocean is complex and constantly moving. It is generally accepted that the dividing line between public tidelands and private uplands, or the tidal boundary, in California is the mean high tide line (MHTL), essentially the ordinary high tide mark or line that intersects with the shore. What is not well-settled as a legal matter is how that line translates into an on-the-ground location. Where there has not been a judicial declaration of a reasonable definite boundary based upon evidence in a specific case, or where the upland owner has not entered into an agreement with the state fixing the boundary, some uncertainty may remain.

As a practical matter the actual dividing line between sea and land moves constantly, and this gives rise to issues involving protection of public rights based on use, rather than ownership. These use rights arise 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

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process, and it is here that the effects of structures are of concern.

The beaches of Malibu and this beach are extensively used by visitors of both local and regional origin and most planning studies indicated that attendance of recreational sites will continue to significantly increase over the coming years. The Commission must protect those potential public rights by assuring that any proposed shoreline development does not interfere with or will only minimally interfere with those rights. This section of shoreline is open and can be used by the public for access and general recreational activities.

Vertical public access from Malibu Road to the beach, is located within 100 feet east of the project site through a vertical public accessway (owned and operated by the County of Los Angeles since the 1960's). This accessway has historically been used by the public to access Amarillo, Puerco and Malibu Beaches. Additionally, there are four other vertical accessways that lead from Malibu Road to Puerco and Amarillo Beaches downcoast. Therefore, the Commission finds that vertical access to the beach exists nearby.

As noted above, interference by the proposed bulkhead and base rock proposed by the applicant has five 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 laterally on their own property.

The second effect on access is through a progressive loss of sand as shore material is not available to nourish the bar. The lack of an effective bar can allow such high wave energy on the shoreline that materials may be lost far offshore where it is no longer available to nourish the beach. The effect of this on the public is again a loss of area between the mean high water line and the actual water.

Third, shoreline protective devices such as revetments and bulkheads cumulatively affect public access by causing accelerated and increased erosion on adjacent public beaches. This effect may not become clear until such devices are constructed individually along a shoreline and they reach a public beach.

Fourth, if not sited landward in a location that insures that the seawall is only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave's energy. And fifth, revetments and bulkheads interfere directly with public access by their occupation of beach area that will not only be unavailable during high tide and severe storm events but also potentially throughout the winter season.

As stated in this report, the applicant has submitted both a Wave Uprush Study and a Geotechnical Engineering Report which state that the project will not adversely affect adjacent properties provided that the recommendations are followed. However, the analysis cited in the preceding section regarding shoreline protective devices indicates that it is more likely that this bulkhead will have an impact on the shoreline processes and public access. Additionally, as set forth above, it is expected that the proposed project would generate adverse individual and cumulative impacts on sand supply, beach profile, and ultimately, public access of the type normally associated with shoreline protective devices. The analysis further indicates that this is an eroding shoreline and that the new bulkhead and base rock will be subject to wave uprush and may, in all probability, impact on the shoreline.

In order to conclude with absolute certainty what impacts the proposed bulkhead and base rock would cause on the shoreline processes and public access, a historical shoreline analysis based on site-specific studies would be necessary. Because the proposed bulkhead, as conditioned, is located landward as far as possible, and landward of the existing bulkhead, and a net reduction of beach encroachment is provided when compared with the existing structure, staff will not need to engage further in this site-specific shoreline erosion analysis in order to determine the site-specific impacts of the proposed seawall. However, by requiring the applicant to relocate the bulkhead about ten (10) feet landward from its existing location of eastern bulkhead, as required by Special Condition Number One (1), the impacts from the proposed bulkhead on the shoreline sand supply and on shoreline erosion are minimized to the greatest extent possible. Therefore, no further site specific shoreline erosion analysis is required in this case to determine the impacts of the proposed bulkhead design on shoreline sand supply and erosion.

Regarding lateral public access and state tidelands ownership, the State Lands Commission, in letters dated September 16, 1997 and January 26, 1998, reviewed the proposed project and existing wooden bulkhead (*Exhibits 12 and 13*). The State Lands Commission staff noted that they do not have sufficient information to determine whether the project intrudes upon state sovereign lands and accordingly asserted no claims. According to the Commission's access records, there are no existing offers to dedicate public access easements recorded on the applicant's property.

The analysis cited in the preceding section regarding shoreline protective devices indicates that the replacement of the existing bulkhead at the required landward location, as conditioned, will have limited impact on the shoreline processes and public access. The analysis further indicates that this is an eroding beach, and that the relocated bulkhead will be subject to less wave uprush because of its more landward location as far landward as feasible .

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Since the bulkhead, as conditioned, is re-located, as required by Special Condition Number One (1), at the farthest landward location at the base of the bluff leading to Malibu Road, any adverse impacts on shoreline sand supply or on public access will be minimized to the greatest extent possible. Further, because the bulkhead, as conditioned, is a replacement of an existing bulkhead in a more landward location, and is sited as far back on the beach as feasible, the Commission finds that there will be no new or additional beach scour or end impacts on the beach which would affect lateral access along the beach. The more landward location of the replacement bulkhead will also cause less scour and erosion, and thus less adverse impacts on access, than the existing bulkhead. Therefore, there is an insufficient basis or nexus to require a condition to establish a lateral access easement across the applicant's property.

Again, in the case of this project, the findings in the preceding section documents the proposed project's impact on beach sand as noted above. As such, Special Condition Number One (1) has been required to revise the proposed project to delete the base rock, remove the bulkhead, and reconstruct a new bulkhead further landward, across the entire property, than the existing eastern bulkhead by about ten (10) feet. The Commission finds that the location required by Special Condition Number One (1) will not have any significant adverse impacts on public access, and therefore, would be consistent with the public access and recreation policies of the Coastal Act. Only as conditioned is the proposed project consistent with the Sections of the Coastal Act related to public access.

D. Hazards and Geologic Stability

Coastal Act Section 30253 states (in part):

New development shall:

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

Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property in areas of high geologic, flood, and fire hazard. In addition to section 30253 of the Coastal Act, the certified Malibu/Santa Monica Mountains LUP includes several policies and standards regarding hazards and geologic stability. These policies have been certified as consistent with the Coastal Act and used as guidance by

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the Commission in numerous past permit actions in evaluating a project's consistency with section 30253 of the Coastal Act. For example, Policy 147 suggests that development be evaluated for impacts on and from geologic hazards.

1. Storm, Wave and Flood Hazard

The Malibu coast has been subject to substantial damage as a result of storm and flood occurrences, geological failures and firestorms. Therefore, it is necessary to review the proposed project and project site against the area's known hazards. The proposed project involves the demolition, remodel and addition to an existing residence on a lot located on a developed stretch of Amarillo Beach.

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

The southerly and southwesterly facing beaches in the Malibu area were especially hard hit by waves passing through the open windows between offshore islands during the 1978 and 1980 storms. These waves broke against beaches, seawalls, and other structures, causing damages of between \$2.8 and \$4.75 million to private property alone. The amount of erosion resulting from a storm depends on the overall climatic conditions and varies widely from storm to storm. Protection from this erosion depends largely on the funds available to construct various protective structures that can withstand high-energy waves.¹⁹

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

In general, the storms greatly affected the character of the Malibu coastline. Once quiet, wide, sandy beaches were stripped of their sand

¹⁹ "Coastal Winter Storm Damage, Malibu, Los Angeles County, Winter 1977-78", part of the National Research Council proceedings, George Armstrong.

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and high surf pounded residential developments The severe scour, between 8 to 12 feet, was greater than past scour as reported by "old timers" in the area. Sewage disposal systems which rely on the sand cover for effluent filtration were damaged or destroyed creating a health hazard along the coast. Flotsam, including pilings and timbers from damaged piers and homes, battered coastal improvements increasing the destruction. Bulkhead failures occurred when sand backfill was lost due to scour exceeding the depth of the bulkhead sheeting, or scour extending beyond the return walls (side walls of the bulkhead which are extended toward the shore from the front wall of the bulkhead).²⁰

Other observations that were noted included the fact that the storm's damage patterns were often inconsistent. Adjacent properties suffered different degrees of damage sometimes unrelated to the method or age of construction. The degree of damage was often related to past damage history and the nature of past emergency repairs. Upcoast (west) of Amarillo Beach, walls at Zuma Beach and the parking lots were damaged by wave uprush and scour. Debris was deposited onto the margin of Pacific Coast Highway (*Exhibit 2*).

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

As proposed, the residence would be an elevated structure on new caissons with a ground floor elevation of between 20.0 feet and 21.0 feet above Mean Sea Level. The residence will be built above the minimum floor elevation of 20 feet Mean Sea Level, as recommended by the submitted Wave Uprush Report, to protect the structure from storm waves and storm surge. Malibu Road, the septic system, garden walls, and front yard are intended to be protected from storm events by the proposed new wooden bulkhead as modified by Special Condition Number One (1). Presently the site is developed with a one level single family residence that is built on pilings and has a discontinuous wooden bulkhead protecting the septic system in the front yard and Malibu Road. Given that the size of the new residence is increasing, the capacity of the current septic system is not adequate to comply with current plumbing code requirements. Therefore, the applicant is proposing to replace the septic system with a new septic system. Experience from historic storm events in Malibu indicates that this protection is essential to the long-term viability of both the septic system and the road.

²⁰ "Assessment of 1982-83 Winter Storms Damage Malibu Coastline", by Frank Denison and Hugh Robertson, in California Geology, September 1985.

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The applicant's submittal included a Geotechnical Engineering Report for the proposed residence prepared by RJR Engineering Group, Inc. dated May 28, 1997, and a Wave Uprush Study with two letter updates prepared by Pacific Engineering Group, dated April 30, 1997 through January 5, 1998. The Geotechnical Engineering Report concludes:

Based upon our review of the site and available data, and based upon Section 111 of the Los Angeles County Building Code the proposed improvements are feasible from a geological and geotechnical standpoint, and should be free of landslides, slumping and excess settlement as described in this report, assuming the recommendations presented in this report and implemented during the design and construction of the project. In addition, the stability of the site and surrounding areas will not be adversely affected by a proposed residence, constructed on the new created (sic) lot, based upon our analysis and proposed design.

Based on the results of this investigation, the proposed residence is feasible from a geologic and geotechnical engineering standpoint. Grading, if necessary, at the site will consist of excavating through the existing beach deposits or fill and placing the concrete cast-in-place piles or piers into the underlying bedrock to support the proposed residence.

The Wave Uprush Study and update letters by Pacific Engineering Group noted above conclude that;

The construction of a single family residence and/or addition is feasible from a coastal engineering perspective provided that the following recommendations are complied with:

The minimum finished floor elevation for the new first floor shall not be lower than elevation + 20.0 Ft. MSL datum. Such an elevation is required to eliminate wave splash-up uplift forces on the floor structure caused by waves impacting the existing timber bulkhead.

All new construction (new residence or additions) must be supported on a timber or concrete pile foundation. ...

The existing and proposed sections of bulkhead along with the residence will be designed to the standards outlined above and should withstand storms comparable to those storm conditions that existed during the 1982 - 1983 storm events provided that all of the recommendations in the referenced wave uprush study, referenced bulkhead repair report and repair plan are complied with.

During the winter season, the bulkhead will continue to extend into an area exposed to wave uprush, flooding, and erosion hazards that in the past have caused significant damage to development along the California coast, including

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the Malibu coastal zone and the beach area nearby the subject property. The Coastal Act recognizes that development, such as the proposed new residence and replacement wooden bulkhead, as conditioned, may still involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property.

The Commission finds that due to the unforeseen possibility of liquefaction, storm waves, erosion, and flooding, the applicant shall assume these risks as a condition of approval. Because this risk of harm cannot be completely eliminated, the Commission is requiring the applicant to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development. The applicant's assumption of risk, as required by Special Condition Number Two (2), when executed and recorded on the property deed, will show that the applicant is aware of and appreciated the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

2. Site Geologic Stability

Beachfront development and development at the base of a coastal bluff raise issues relative to a site's geologic stability. As stated previously, Malibu Road, which abuts the subject property, is at the base of a coastal bluff. Malibu Road was the original route of State Highway 1, but the right-of-way was relocated further inland as a result of historical erosion and bluff sloughing problems.

The Malibu shoreline has experienced coastal damage regularly from geologic instability induced by winter rains and heavy surf conditions. For instance, in *Living with the California Coast*, Griggs and Savoy discuss development at the seaward base of a cliff on the Malibu coastline and note that:

As the amount of land along the immediate shoreline was consumed by subsequent housing, however, more and more structures were built on pilings in potentially dangerous locations at the base of crumbling bluffs ... Over the past 60 years, therefore, the pattern of beach erosion has grown in significance until many houses formerly built at the rear of broad backshores now find themselves stranded high above eroding foreshores, the waves periodically pummeling the underlying bluffs that connect the houses to the highway. The management problems facing this coast can only increase with time, as society as a whole has to pay the penalty for unwise, uncoordinated, and irrational developments of the past. (emphasis added)²¹

²¹ Living with the California Coast, Griggs and Savoy

These problems associated with geologic instability are particularly serious in older subdivisions. Developments at the base of natural slopes within older subdivisions suffered severe damage in the 1977-78 winter storms, where a series of intense rainstorms triggered numerous mudslides and landslides. Within the City of Los Angeles alone, losses to public and private property were estimated to be \$100 million. Slosson and Krohn stated that:

Damage from debris flows and mudflows appears to be increasing in magnitude and is caused, in part, by the increased construction of homes at the base of natural slopes or partial natural slopes associated with older subdivisions. Most severely hit appear to be those sites or lots that were a part of pre-1963 or even pre-1952 subdivisions but were not built upon until recent years. ... The potential for mudflow and debris flow hazard is easily recognized, but few consultants will acknowledge evidence unless required by code.²²

As stated previously, the applicant submitted a Geotechnical Engineering Report prepared by RJR Engineering Group, Inc. The report states that the proposed improvements should be free of hazards described in the report. The report further concludes that the stability of the site and surrounding areas will not be adversely affected by the proposed residence. In addition, the applicant submitted a Geology and Geotechnical Engineering Review Sheet, dated 8/13/97, from the City of Malibu which approves in concept the proposed project in the planning stage. The applicant's Wave Up Rush Study and update letters prepared by Pacific Engineering Group concludes that the existing and proposed sections of bulkhead and residence will be designed as recommended to withstand storms comparable to storm conditions that existed during the 1982 - 1983 storm season.

As set forth in Section 30253 of the Coastal Act, new development shall assure structural integrity neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. The Commission finds that the development is consistent with Section 30253 of the Coastal Act so long as the geologic and engineering consultant's recommendations are incorporated into project plans. Therefore, the Commission finds it necessary to require the applicant to submit project plans that have been certified in writing by the consulting Engineering Geologist and Coastal Engineer as conforming to their recommendations, consistent with Special Condition Number One (1), and as required by Special Condition Number Three (3).

Lastly, as noted above, the project involves some demolition and construction on a beachfront lot subject to tidal influence. The proposed development, with its

²² "Southern California Landslides of 1978 and 1980" by James Slosson and James Krohn, in Storms, Floods and Debris Flows in Southern California and Arizona 1978 and 1980, Proceedings of a Symposium by the National Research Council.

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excavation of terrace deposits, debris, and with beach level construction activity, may result in disturbance of the offshore kelp beds through erosion and siltation. Construction equipment, materials and demolition debris could pose a significant hazard if used or stored where subject to wave contact or situated in a manner that creates a hazard for beach users. To minimize impacts to the beach, the applicant proposes to construct the new caissons and pilings with the use of construction equipment located on Malibu Road and not on the beach. Furthermore, this construction activity, if not properly mitigated, would add to an increase of pollution in the Santa Monica Bay.

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

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

E. Septic System

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

Section 30231 of the Coastal Act states that:

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

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

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

As described in the preceding project description section, the existing sewage disposal system will be replaced with a new system which includes a 1,500 gallon septic tank, a leach field, and a leach field expansion area located beneath the residential structure landward of the bulkhead (*Exhibits 2.2 and 7*). The installation of a private sewage disposal system was reviewed by the consulting geologist, RJR Engineering Group, Inc., and found not to create or cause adverse conditions to the site or adjacent properties as a result of septic percolation. The applicant submitted a conceptual approval for the sewage disposal system from the City of Malibu Department of Environmental Health, based on a five bedroom single family residence. This approval indicates that the sewage disposal system for the project in this application complies with all minimum requirements of the Uniform Plumbing Code. As noted above, Special Condition Number One (1) requires the applicant to redesign and relocate the proposed sewage disposal system to a smaller area further landward through the design of a bottomless sand filter septic system to accommodate the required bulkhead which will also be relocated further landward. It has been found that a redesigned sewage disposal system can feasibly be located within a smaller area than originally proposed by the applicant. As conditioned, this redesigned septic system will be approved in concept by the City of Malibu Environmental Health Department prior to the issuance of the coastal development permit. Staff has confirmed with the City of Malibu, Environmental Health Department that it is possible to redesign and relocate the septic system further landward between a relocated bulkhead location and the Malibu Road right-of-way.

The Commission has found in past permit actions that compliance with the health and safety codes will minimize any potential for waste water discharge that could adversely impact coastal waters. In addition, the proposed bulkhead, which includes a return wall, will protect the proposed septic system from wave run-up. As reviewed by the City and as set forth in the geotechnical analysis of the septic system, the proposed project will not adversely impact the biological productivity and quality of the coastal waters. Therefore, the Commission finds that the proposed project is consistent with Sections 30231 and 30250 of the Coastal Act.

F. Local Coastal Program

Section 30604 of the Coastal Act states that:

- a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the

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commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).

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

G. CEQA

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

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

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

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

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

Adopted City of Malibu General Plan. November 1995

City of Malibu. Article IX Interim Zoning Ordinance. 1993.

STUDIES AND PUBLICATIONS

U.S. Army Corps of Engineers. Los Angeles District. Reconnaissance Study of the Malibu Coast. 1994

Chrisiansen, Herman. "Economic Profiling of Beach Fills" in Coastal Sediments '77. 1977.

Dean, Robert G., "Coastal Sediment Processes: Toward Engineering Solutions". Coastal Sediments '87. 1987.

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McDougal, W.G., M.A. Sturtevant, and P.D. Komar. "Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties". Coastal Sediments '87. 1987.

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Slosson, James and James Krohn. "Southern California Landslides of 1978 and 1980". Storms, Floods and Debris Flows in Southern California and Arizona 1978 and 1980". Proceedings of Symposium by the National Research Council.

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

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

William's, Phillip & Associates and Peter Warshall & Associates. Malibu

Wastewater Management Study. March 1992.

LETTERS and MEMOS

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

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

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

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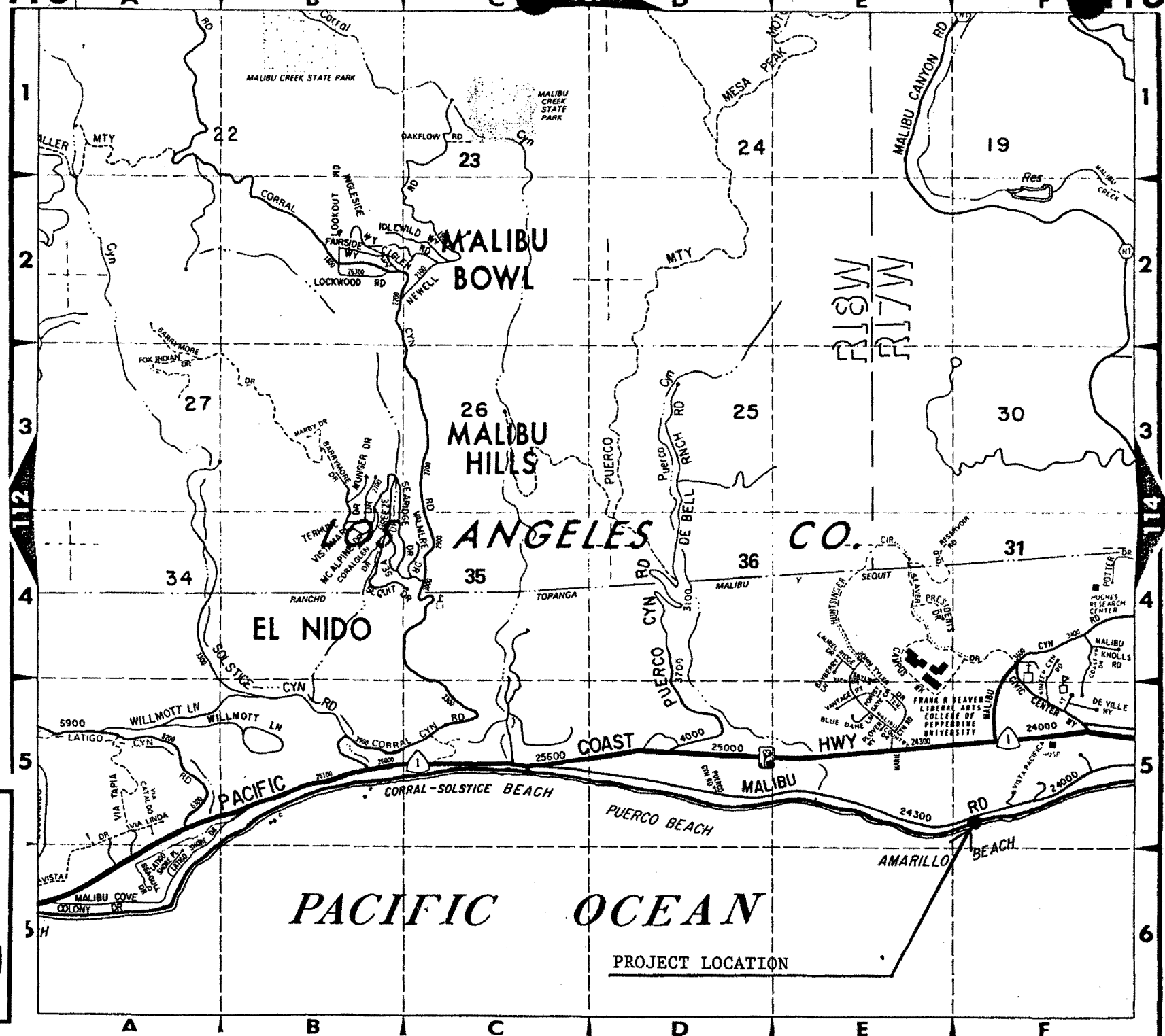


EXHIBIT NO. I

APPLICATION NO.

Project

Location

DATE	10/1/97
BY	DR. JOHN K. KIM
FOR	DR. JOHN K. KIM RESIDENCE
PROJECT	DR. JOHN K. KIM RESIDENCE
REVISION	NO. 1
DESCRIPTION	SEPTIC SYSTEM
SCALE	AS SHOWN
PROJECT NO.	488-048
DATE	10/1/97
BY	DR. JOHN K. KIM
FOR	DR. JOHN K. KIM RESIDENCE
PROJECT	DR. JOHN K. KIM RESIDENCE
REVISION	NO. 1
DESCRIPTION	SEPTIC SYSTEM
SCALE	AS SHOWN
PROJECT NO.	488-048

Dodson/McGraw Architects
201 E. Broadway
Portland, ME 04101
TEL: 603-488-0488
FAX: 603-488-0488



NO.	REVISION	DATE
1	ISSUED FOR PERMIT	10/1/97
2	ISSUED FOR PERMIT	10/1/97
3	ISSUED FOR PERMIT	10/1/97
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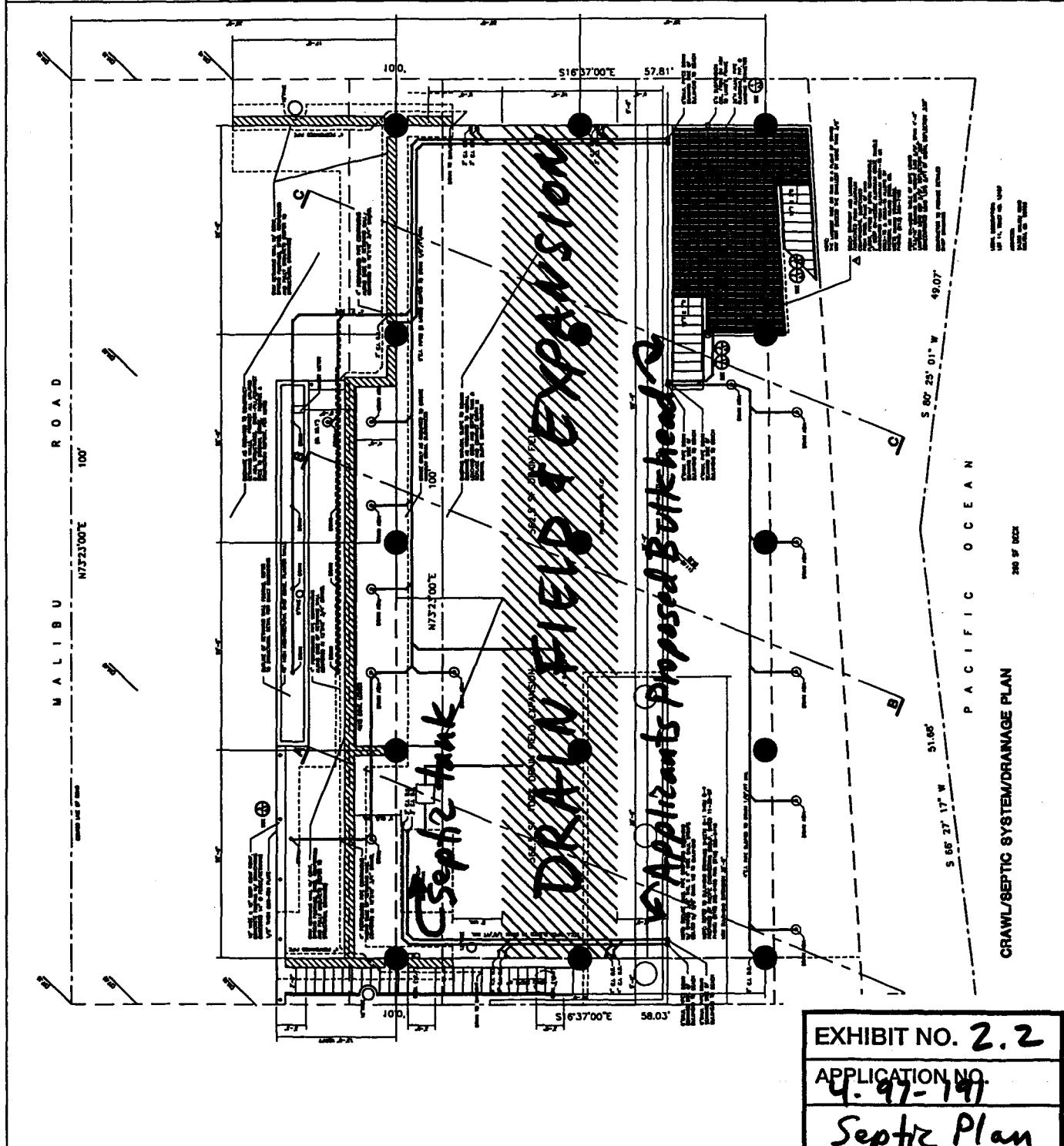
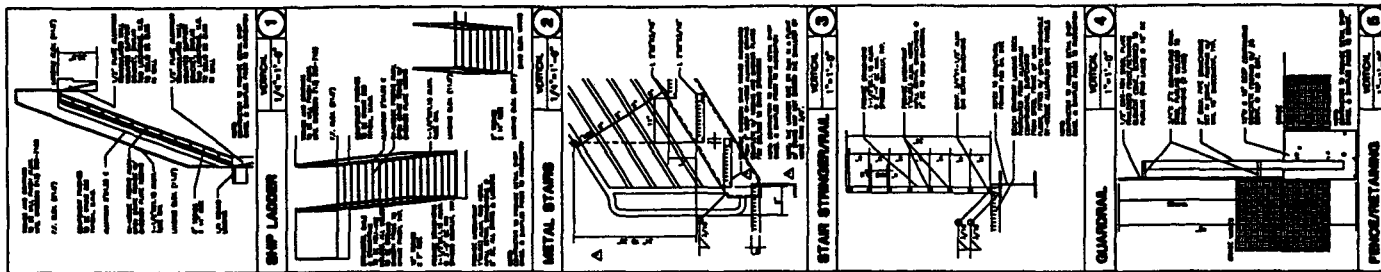


EXHIBIT NO. 2.2
APPLICATION NO. 4.97-149
Septic Plan

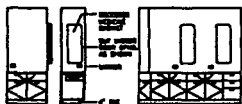
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FLOOR PLAN NOTES

1. ALL DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE.
2. ALL WALLS ARE 1/2" THICK UNLESS NOTED OTHERWISE.
3. ALL DOORS ARE 3'0" WIDE UNLESS NOTED OTHERWISE.
4. ALL WINDOWS ARE 6'0" WIDE UNLESS NOTED OTHERWISE.
5. ALL FLOORS ARE 4" THICK CONCRETE UNLESS NOTED OTHERWISE.
6. ALL ROOFS ARE 4" THICK CONCRETE UNLESS NOTED OTHERWISE.
7. ALL CEILING ARE 8'0" HIGH UNLESS NOTED OTHERWISE.
8. ALL STAIRS ARE 10'0" WIDE UNLESS NOTED OTHERWISE.
9. ALL ELEVATIONS ARE TO FACE UNLESS NOTED OTHERWISE.
10. ALL FINISHES ARE TO FACE UNLESS NOTED OTHERWISE.

MECHANICAL/ELECTRICAL SCHEDULE

- 1. ALL MECHANICAL/ELECTRICAL WORK IS TO BE DONE IN ACCORDANCE WITH THE 2001 INTERNATIONAL MECHANICAL/ELECTRICAL CODE (IMC/IEC).
- 2. ALL MECHANICAL/ELECTRICAL WORK IS TO BE DONE IN ACCORDANCE WITH THE 2001 INTERNATIONAL MECHANICAL/ELECTRICAL CODE (IMC/IEC).
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SECOND FLOOR PLAN
REFER TO SHEET A-1 FOR DIMENSIONS

PLUMBING FIXTURE SCHEDULE

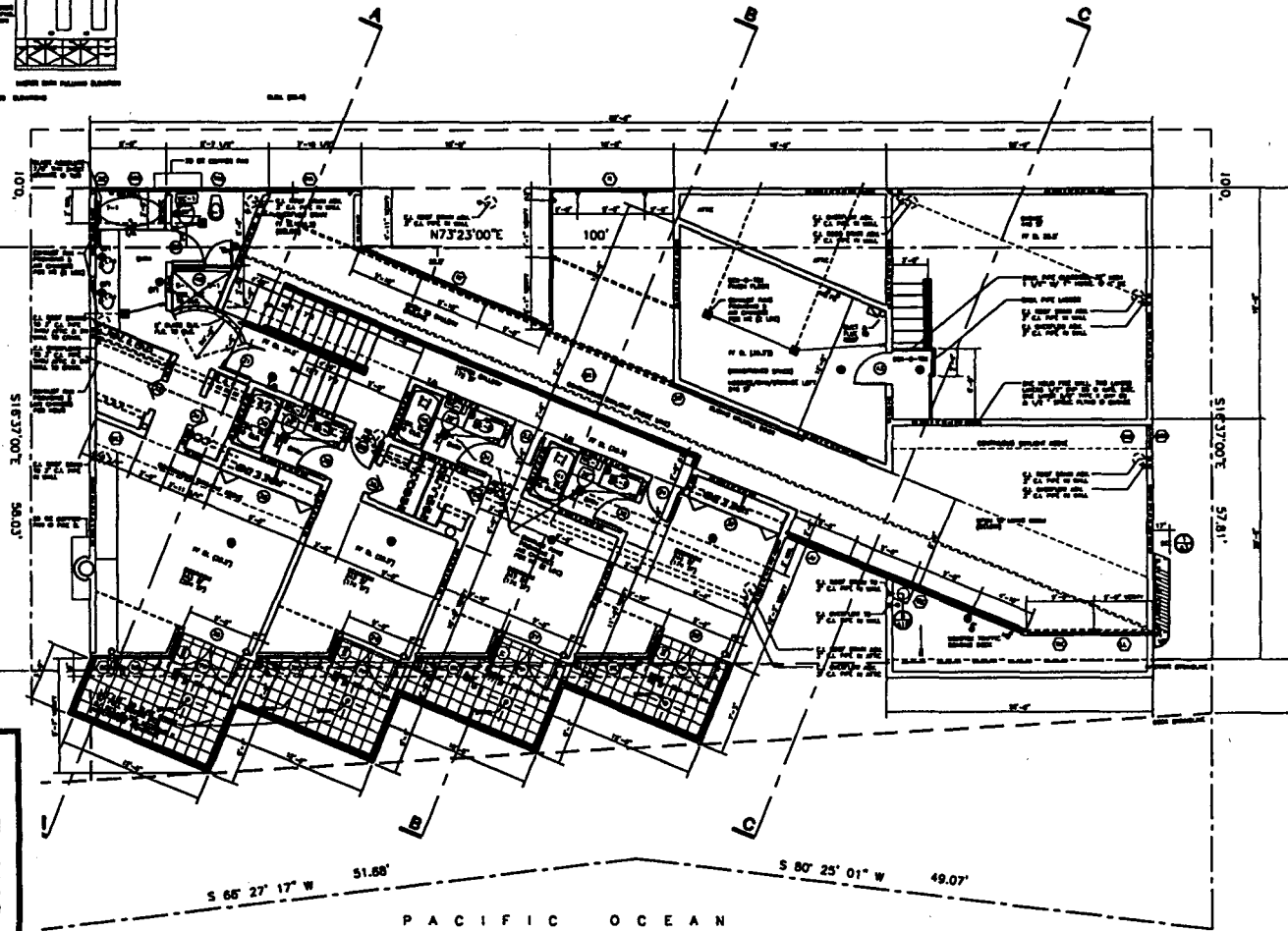
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MALIBU ROAD

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SECOND FLOOR PLAN

1453 SF SECOND FLOOR + 326 SF DECKS + 246 SF STORAGE LOFT

D/M/A

NO.	DATE	DESCRIPTION	BY	CHKD.
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DR. JOHN K. KIM RESIDENCE
Dorson/Magnuson Architects
301 Avenida Drive
Santa Monica, California 90405
Phone (310) 488-0001
Fax (310) 488-0015



NO.	DATE	DESCRIPTION	BY	CHKD.
1	10/1/01	ISSUED FOR PERMIT	J. KIM	J. KIM
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EXHIBIT NO. 4

APPLICATION NO. 22-019-191

2nd Floor Plan

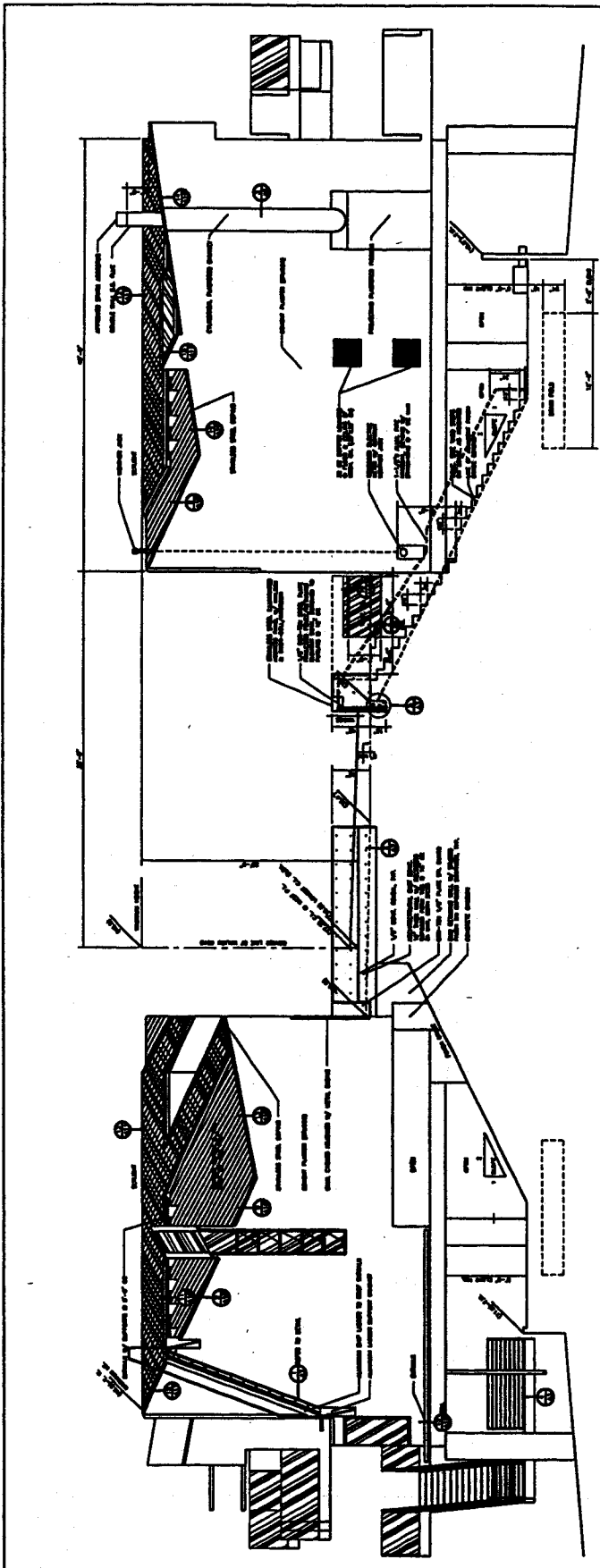
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DR. JOHN K. KIM RESIDENCE		10/1/91	
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DODSON/HARRISON ARCHITECTS		D/H/A	
ADDRESS		PHONE	
501 BROADWAY DRIVE		(415) 442-0001	
CITY		FAX	
SAN FRANCISCO, CALIFORNIA 94102		(415) 442-0002	

DODSON/HARRISON ARCHITECTS
501 BROADWAY DRIVE
SAN FRANCISCO, CALIFORNIA 94102
PHONE (415) 442-0001
FAX (415) 442-0002



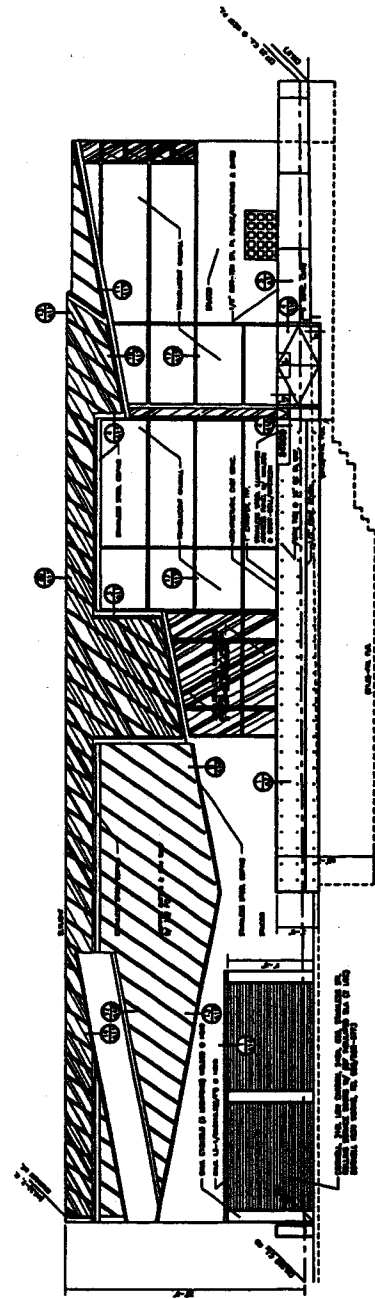
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WEST ELEVATION

EAST ELEVATION



NORTH ELEVATION

1. WALL SECTION

2. WALL SECTION

3. WALL SECTION

4. WALL SECTION

5. WALL SECTION

6. WALL SECTION

7. WALL SECTION

8. WALL SECTION

9. WALL SECTION

10. WALL SECTION

EXHIBIT NO.	5
APPLICATION NO.	4-97-191
E.W.N.	
Elevations	

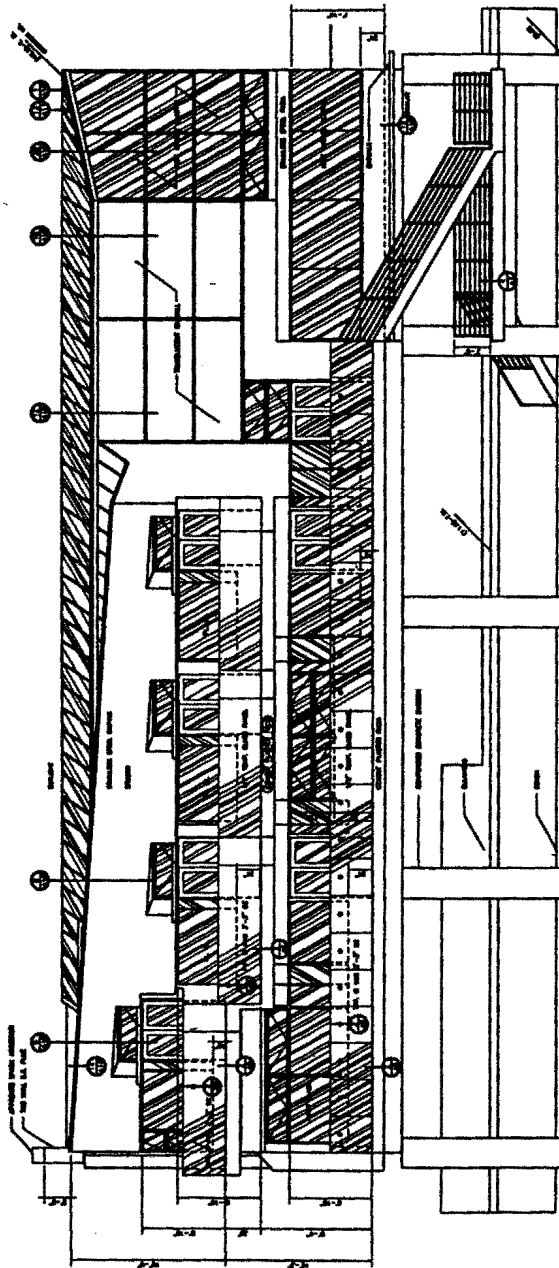
DATE: 10/1/91	BY: JRM
PROJECT: 101 S. KIM RESIDENCE	DESIGNER: DR. JOHN K. KIM
CLIENT: DR. JOHN K. KIM	ARCHITECT: DR. JOHN K. KIM
LOCATION: 101 S. KIM DRIVE	CITY: SEASIDE, CALIFORNIA 90408
PHONE: (949) 488-4478	FAX: (949) 488-4478
EMAIL: JRM@JRM.COM	WWW: JRM.COM

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SEASIDE, CALIFORNIA 90408
PHONE: (949) 488-4478
FAX: (949) 488-4478

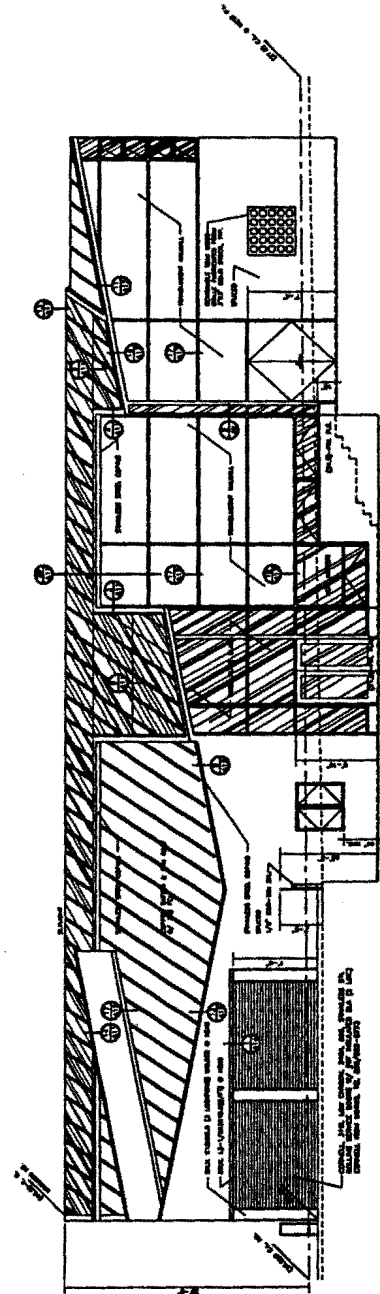


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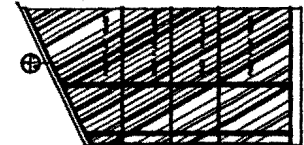
A-8



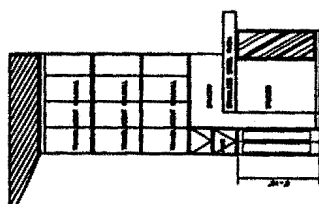
SOUTH ELEVATION



NORTH ELEVATION/SOUTH COURT ELEVATION



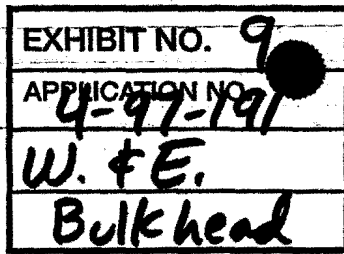
EAST COURT



WEST DECK COURT

PERMIT NO.	6
APPLICATION NO.	4-97-191
W., S., W., E., N., Elevations	

ADDRESS:
24300 MA.
MALIBU, C.



PACIFIC
ENGINEERING GROUP
22440 Clarendon Street #208
Woodland Hills, CA 91367
(818) 225-9400

Project

DR. JOHN KIM
24300 MALIBU ROAD
MALIBU, CA 90265

Job # 97112.KMM

Engineer RKB

Date 11-27-97

Sheet#

M1

Of 1

Ocean

ORIGINAL MEAD HIGH TIDE LINE
SURVEYED JULY 14, 1945
(TRACT MHTL)

P/L

560' 21' 11" W

580' 25' 01" W

EXISTING
TIMBER BULKHEAD

EXISTING TIMBER BULKHEAD
TO REMAIN
PROPOSED BULKHEAD
EXTENSION

EXISTING TIMBER
BULKHEAD

EXISTING
CONC. STAIRS

Stairs

NEIGHBOR'S
BULKHEAD

EXISTING RESIDENCE

EXISTING BULKHEAD

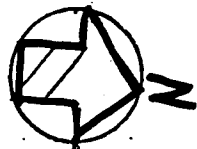
Proposed Base
ROCK

NEIGHBOR'S
BULKHEAD

EXISTING SUBSTANTIAL
TIMBER BULKHEAD TO BE
ABANDONED

Existing West
Bulkhead to be
Abandoned

MALIBU ROAD



BULKHEAD MAP

SCALE

1" = 20'-0"



EXHIBIT NO. 10

APPLICATION NO.

4-97-191
Bulkhead
Plan

ENGINEERING GROUP
2440 Clarendon Street #208
Woodland Hills, CA 91367
(818) 225-9400

Project

DR. JONAS KIM
24350 MALIBU ROAD
MALIBU, CA 90265

Engineer RKB
Date 1-5-97

DI

EXHIBIT NO. 11

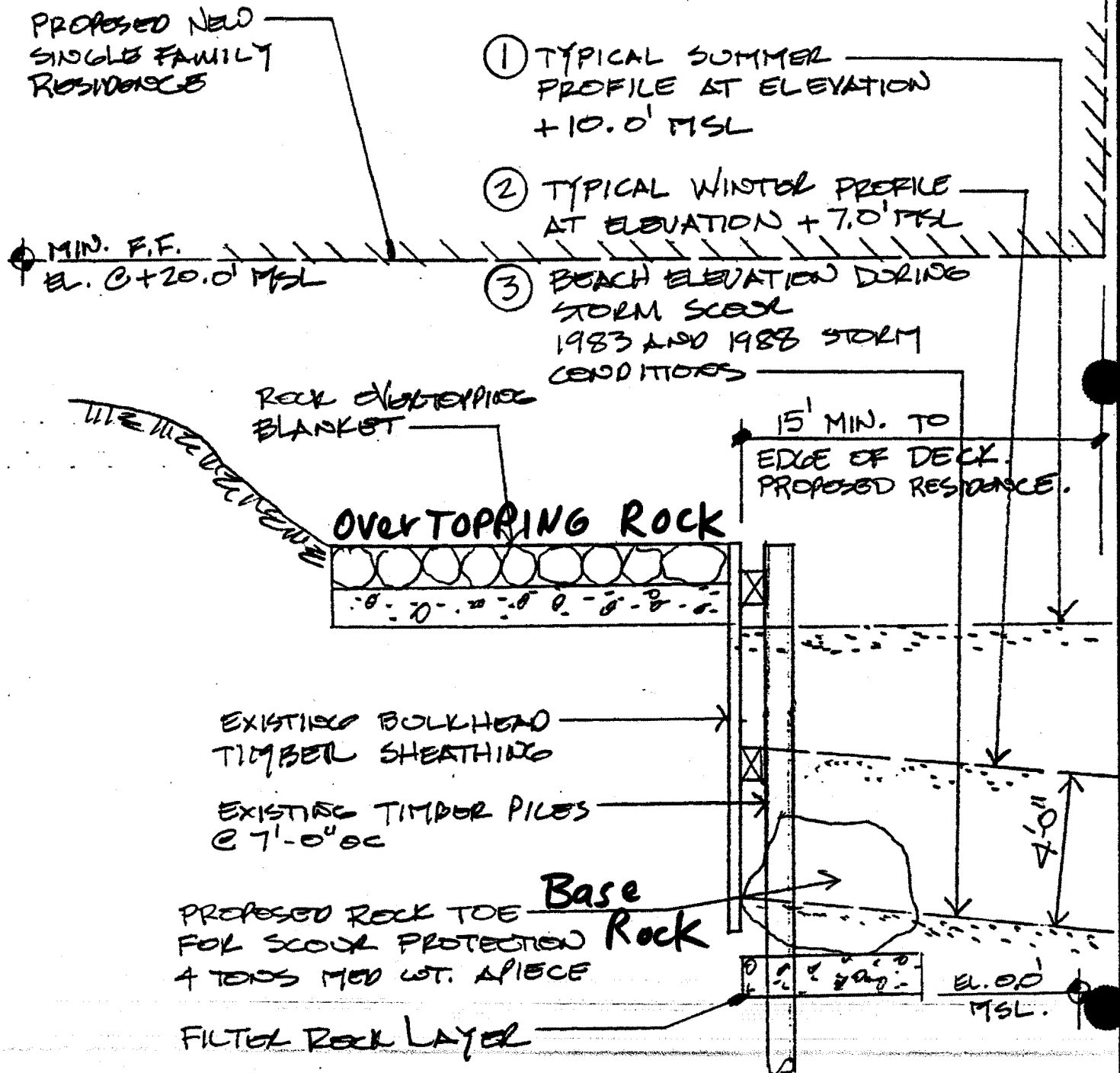
APPLICATION NO. 4-97-191

East Bulkhead
Elevation

EXISTING BULKHEAD
SCOUR AND OVERTOPPING
PROTECTION - SECTION

SCALE

$\frac{1}{4}'' = 1'-0''$



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



ROBERT C. HIGHT, Executive Officer
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1892
Contact FAX: (916) 574-1925
E-Mail Address: smithj@slc.ca.gov

September 16, 1997

File Ref: SD 97-07-30.3

Richard Dodson
Dodson/Magnuson Architects
201 Entrada Drive
Santa Monica, CA 90402

Dear Mr. Dodson:

SUBJECT: Coastal Development Project Review for Demolition of Existing
Residence and Construction of New Residence at 24300 Malibu
Road, Malibu

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

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

Your client proposes to demolish an existing residence/deck(s) and construct a new residence/deck(s) at 24300 Malibu Road in Malibu. This is a well-developed stretch of beach with numerous residences and decks both up and down coast. From the plans you submitted dated June 17, 1997, it appears that the new residence/deck(s) will be sited within the footprint of the existing residence/deck(s) and will be in conformance with the string line established by the residences/decks on either side.

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

EXHIBIT NO. 12

APPLICATION NO.

4-97-197

SLC Letter #1

page 1 of 2

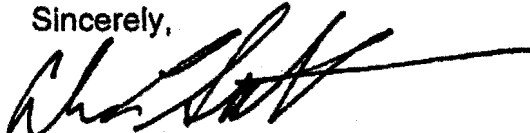
September 16, 1997

potential benefit to the public, even if such an inquiry were to reveal the basis for the assertion of public claims and those claims were to be pursued to an ultimate resolution in the state's favor through litigation or otherwise.

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

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

Sincerely,


For Robert L. Lynch, Acting Chief
Division of Land Management

cc: Jack Ainsworth, CCC/San Buenaventura

EXHIBIT NO. 12
APPLICATION NO. 4-97-191
SLC Letter #1
Page 2 of 2

STATE OF CALIFORNIA

PETE WILSON, Governor

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



ROBERT C. HIGHT, Executive Officer
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone 1-800-735-2822
from Voice Phone 1-800-735-2828

Contact Phone: (916) 574-1892
Contact FAX: (916) 574-1825
E-Mail Address: smithj@slc.ca.gov

January 26, 1998

File Ref: SD 97-12-15.3

Richard Dodson
Dodson/Magnuson Architects
201 Entrada Drive
Santa Monica, CA 90402

Dear Mr. Dodson:

SUBJECT: Coastal Development Project Review for Bulkhead Repair,
Realignment and Installation of Rock Toe To Protect Existing
Residence at 24300 Malibu Road, Malibu

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

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

Your client proposes to repair an existing timber bulkhead, install a rock blanket behind the bulkhead on top of the backfill, and place rock toe at the base of the bulkhead to protect the existing residence at 24300 Malibu Road. A review of our files indicates that, by letter dated September 16, 1997, we provided a jurisdictional determination with regard to your client's proposal to demolish the existing residence and construct a new residence within the same footprint.

The subject project is identified as Job No. 92112.Kim on the plans dated November 20, 1997, and is also described in the December 1, 1997 and January 5, 1998 analyses from Pacific Engineering Group. From the information provided, the bulkhead and proposed rock toe will be located some 10' - 15' landward of the most seaward extent of the residence. The existing bulkhead is referred to as the eastern and western sections. The eastern section is approximately 62 feet long and is located 31 feet seaward of the Malibu Road right-of-way line. Additional depth and height will be added to this portion of the bulkhead. A rock blanket will be installed on top of the backfill behind the bulkhead to prevent scouring and bulkhead failure. Seaward of this

EXHIBIT NO. 13

APPLICATION NO.

U-97-191

SLC letter #2

page 1 of 2

Richard Dodson

-2-

January 26, 1998

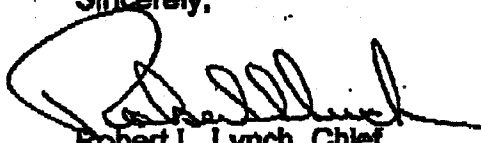
section of bulkhead, your client proposes to excavate and place one layer of rock ranging in size from 200 lbs. to 1200 lbs., between 0' and 5' MSL to prevent additional localized scour at the base. The rock toe will be supported by an 18" thick layer of filter rock consisting of 3/4" to 6" stone. The western section is approximately 38 feet long and is located 24 feet from the road right-of-way. A new western section will be designed and rebuilt in-line with the eastern section. No rock toe is proposed seaward of this section of bulkhead.

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

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

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

Sincerely,



Robert L. Lynch, Chief
Division of Land Management

cc: Art Bashmakian, City of Malibu

EXHIBIT NO. 13
APPLICATION NO. 4-97-191
SLC letter #2
page 2 of 2

SECRET & OF X



New Bulkhead
Spec Cond #1

