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

CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
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Commission Action:	

STAFF REPORT: REGULAR CALENDAR

RECORD PACKET COPY

APPLICATION NO.: 4-00-185

APPLICANT: William Fuller

AGENT: Louis Magur

PROJECT LOCATION: 21062 Pacific Coast Highway, City of Malibu

PROJECT DESCRIPTION: Demolition of an existing seawall and septic system and construction of an approximately 16 foot high, 36 foot long concrete seawall with 14 foot long return wall and 1250 gallon septic system on the site of an existing single family residence. The project also includes repair and replacement (as needed) of a wood deck on the seaward side of the residence.

LOCAL APPROVALS RECEIVED: City of Malibu Planning Department, Approval in Concept, April 6, 2001; City of Malibu Environmental Health, In-Concept Plot Plan Approval, January 21, 2003; City of Malibu Coastal Engineering Review, Approval in Concept, February 15, 2001; City of Malibu Geology and Geotechnical Engineering Review, Approval in Concept, dated 10/9/01.

SUBSTANTIVE FILE DOCUMENTS: Certified Malibu Local Coastal Program; Coastal Development Permit 4-99-254-G (Fuller); Coastal Development Permit 5-88-310-W (Clark); Coastal Development Permit 5-81-144 (Gowing); "Structural Engineering Investigation Report," Greg Riley, Professional Engineer, Structural Engineering Consultants, Inc., June 30, 2000; "Engineering Geologic Status Report, Proposed Seawall, 21062 Pacific Coast Highway, Malibu, California," Mountain Geology, Inc., August 13, 2001; "Geologic/Geotechnical Engineering Report, Proposed Bulkhead Seawall, 21062 Pacific Coast Highway, Malibu, CA," Gold Coast Geoservices, Inc., January 10, 2002; "Wave Uprush Study, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, January 31, 2000; "Addendum Wave Uprush Study and Conformance Review, New Concrete Bulkhead to Replace Existing Failed Bulkhead, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, February 6, 2002; "Wave Uprush Study Addendum #1 for Fuller Residence, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, February 18, 2003.

STAFF NOTE

Due to Permit Streamlining Act Requirements the Commission must act on this permit application at the August 2003 Commission meeting.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends ***approval*** of the proposed project with **eight (8) special conditions** addressing (1) geologic and engineering recommendations, (2) assumption of risk, (3) no future seaward extension of shoreline protective device, (4) deed restriction, (5) construction responsibilities and debris removal, (6) provisional term for shoreline protective structure, (7) drainage and polluted runoff control plans, and (8) on-site wastewater treatment system requirements.

I. STAFF RECOMMENDATION

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-00-185 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

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

RESOLUTION TO APPROVE THE PERMIT:

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

II. STANDARD CONDITIONS

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

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

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

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Plans Conforming to Geologic and Engineering Recommendations

All recommendations contained in the submitted reports ("Structural Engineering Investigation Report," Greg Riley, Professional Engineer, Structural Engineering Consultants, Inc., June 30, 2000; "Engineering Geologic Status Report, Proposed Seawall, 21062 Pacific Coast Highway, Malibu, California," Mountain Geology, Inc., August 13, 2001; "Geologic/Geotechnical Engineering Report, Proposed Bulkhead Seawall, 21062 Pacific Coast Highway, Malibu, CA," Gold Coast Geoservices, Inc., January 10, 2002; "Wave Uprush Study, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, January 31, 2000; "Addendum Wave Uprush Study and Conformance Review, New Concrete Bulkhead to Replace Existing Failed Bulkhead, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, February 6, 2002; and "Wave Uprush Study Addendum #1 for Fuller Residence, 21062 Pacific Coast Highway, Malibu, CA 90265," Pacific Engineering Group, February 18, 2003) shall be incorporated into all final design and construction, including *excavations, foundation systems, construction, sewage disposal, active earth pressure, backfill, drainage, and observation and testing*. Final plans must be reviewed and approved by the project's consulting engineer, geotechnical engineer and geologist. Prior to issuance of the coastal development permit, the applicant shall submit, for review and approval by the Executive Director, two sets of plans with evidence of the consultant's review and approval of all project plans.

The final plans approved by the consultants shall be in substantial conformance with the plans approved by the Commission relative to construction, foundations, sewage disposal and drainage. Any substantial changes in the proposed development approved by the Commission that may be required by the consultants shall require an amendment to the permit or a new coastal permit.

2. Assumption of Risk, Waiver of Liability and Indemnity

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

3. No Future Seaward Extension of Shoreline Protective Device

A. By acceptance of this Permit, the applicant agrees, on behalf of itself (or himself or herself, as applicable) and all successors and assigns, that no future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to Coastal Development Permit No. 4-00-185, as described and depicted on an Exhibit attached to the Notice of Intent to Issue Permit (NOI) that the Executive Director issues for this permit, shall be undertaken if such activity extends the footprint seaward of the subject shoreline protective device. By acceptance of this Permit, the applicant waives, on behalf of himself and all successors and assigns, any rights to such activity that may exist under Public Resources Code Section 30235.

B. Prior to the issuance by the Executive Director of the **Notice of Intent to Issue the Permit** (NOI), the applicant shall submit for the review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the NOI, a formal legal description and graphic depiction of the shoreline protective device approved by this permit, as generally described above and shown on **Exhibit 3** attached to this staff report, showing the footprint of the device and the elevation of the device referenced to NGVD (National Geodetic Vertical Datum).

4. Deed Restriction

Prior to issuance of the coastal development permit, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

5. Construction Responsibilities and Debris Removal

The applicant shall, by accepting this permit, agree: a) that no stockpiling of dirt shall occur on the beach; b) that all grading and/or excavation shall be properly covered and sand bags and/or ditches shall be used to prevent runoff and siltation; c) that measures to control erosion must be implemented at the end of each day's work; d) no machinery shall be allowed in the intertidal zone at any time; e) all construction debris shall be removed from the beach daily and at the completion of construction.

Prior to issuance of the coastal development permit, the applicant shall provide evidence to the Executive Director of the location of the disposal site for all debris/excavated material from the

site. Should the disposal be located in the Coastal Zone, a Coastal Development Permit shall be required.

6. Provisional Term for Shoreline Protective Structure

Coastal Development Permit No. 4-00-185, in full or in part, authorizes the construction of the shoreline protective device generally depicted in attached **Exhibits 3 - 5**. By acceptance of this permit, the applicant acknowledges that the purpose of the subject shoreline protective device is solely to protect the existing structures located on site, in their present condition and locations, including the sewage disposal system. If any of the activities listed below are undertaken, the shoreline protective device authorized by this permit shall be removed unless the Coastal Commission issues a new coastal development permit authorizing the shoreline protective device, or unless the Executive Director determines that a new permit is unnecessary because such activities are minor in nature or otherwise do not affect the need for the shoreline protective device.

1. Changes to the foundation of any structure on the subject site including repairs or replacement of support piles or caissons;
2. Upgrade, relocation or abandonment of the septic disposal system;
3. Remodel of the primary structure or residence on the subject site involving the demolition of more than 50 percent of exterior walls or an addition to the primary structure or residence resulting in an increase of more than 10 percent of structural size;
4. Construction of a new structure on the subject parcel;
5. Relocation and/or complete removal of any or all of the structures existing on site shown on the exhibit required pursuant to paragraph above.

The applicant or successor-in-interest shall contact the Executive Director if any of the above activities are contemplated so that a determination as to the necessity of applying for a new permit can be made. If an application for a new coastal development permit is required pursuant to this condition, and the Commission determines that the proposed project is not consistent with the Coastal Act, the Commission may deny the permit application and may take any other action authorized by law.

7. Drainage and Polluted Runoff Control Plans

Prior to the issuance of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director; a) **a *Local Storm Water Pollution Prevention (SWPPP) Plan*** to control erosion and contain polluted runoff during the construction phase of the project; and b) ***a Storm Water Management Plan (SWMP)*** for the management of post-construction storm water and polluted runoff. The plans shall be certified by a California Registered Civil Engineer or Licensed Architect and approved by the City's Department of Public Works, and include the information and measures outlined below.

a) ***Local Storm Water Pollution Prevention Plan***, for the construction phase of the project shall include at a minimum the following:

- Property limits, prior-to-grading contours, and details of terrain and area drainage
- Locations of any buildings or structures on the property where the work is to be performed and the location of any building or structures of adjacent owners that are within 15 ft of the property or that may be affected by the proposed grading operations
- Locations and cross sections of all proposed temporary and permanent cut-and-fill slopes, retaining structures, buttresses, etc., that will result in an alteration to existing site topography (identify benches, surface/subsurface drainage, etc.)
- Area (square feet) and volume (cubic yards) of all grading (identify cut, fill, import, export volumes separately), and the locations where sediment will be stockpiled or disposed
- Elevation of finished contours to be achieved by the grading, proposed drainage channels, and related construction
- Details pertaining to the protection of existing vegetation from damage from construction equipment, for example: (a) grading areas should be minimized to protect vegetation; (b) areas with sensitive or endangered species should be demarcated and fenced off; and (c) native trees that are located close to the construction site should be protected by wrapping trunks with protective materials, avoiding placing fill of any type against the base of trunks, and avoiding an increase in soil depth at the feeding zone or drip line of the retained trees
- Information on potential flow paths where erosion may occur during construction
- Proposed erosion and sediment prevention and control BMPs, both structural and non-structural, for implementation during construction, such as:
    - Stabilize disturbed areas with vegetation, mulch, geotextiles, or similar method.
    - Trap sediment on site using fiber rolls, silt fencing, sediment basin, or similar method.
    - Ensure vehicles on site are parked on areas free from mud; monitor site entrance for mud tracked off-site.
    - Prevent blowing dust from exposed soils.
- Proposed BMPs to provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials, such as:
    - Control the storage, application and disposal of pesticides, petroleum and other construction and chemical materials.
    - Site washout areas more than fifty feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies.
    - Provide sanitary facilities for construction workers.
    - Provide adequate disposal facilities for solid waste produced during construction and recycle where possible.

b) ***Storm Water Management Plan***, for the management of post construction storm water and polluted runoff shall at a minimum include the following:

- Site design and source control BMPs that will be implemented to minimize or prevent post-construction polluted runoff (see 17.5.1 of the Malibu LIP)
- Drainage improvements (e.g., locations of diversions/conveyances for upstream runoff)
- Potential flow paths where erosion may occur after construction
- Methods to accommodate onsite percolation, revegetation of disturbed portions of the site, address onsite and/or offsite impacts and construction of any necessary improvements

- Storm drainage improvement measures to mitigate any offsite/downstream negative impacts due the proposed development, including, but not limited to:
    - Mitigating increased runoff rate due to new impervious surfaces through on-site detention such that peak runoff rate after development does not exceed the peak runoff of the site before development for the 100 year clear flow storm event (note; Q/100 is calculated using the Caltrans Nomograph for converting to any frequency, from the Caltrans "Hydraulic Design and Procedures Manual"). The detention basin/facility is to be designed to provide attenuation and released in stages through orifices for 2-year, 10-year and 100-year flow rates, and the required storage volume of the basin/facility is to be based upon 1-inch of rainfall over the proposed impervious surfaces plus 1/2-inch of rainfall over the permeable surfaces. All on-site drainage devices, including pipe, channel, and/or street & gutter, shall be sized to cumulatively convey a 100 year clear flow storm event to the detention facility, or;
    - Demonstrating by submission of hydrology/hydraulic report by a California Registered Civil Engineer that determines entire downstream storm drain conveyance devices (from project site to the ocean outlet) are adequate for 25-year storm event, or;
    - Constructing necessary off-site storm drain improvements to satisfy b. above, or;
    - Other measures accomplishing the goal of mitigating all offsite/downstream impacts

8. On-Site Wastewater Treatment System Requirements

Prior to issuance of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director a report and plans verifying that the proposed OSTS complies with the policies and provisions in the Malibu LCP pertaining to the siting, design, installation, operation and maintenance requirements for OSTSs. The report and plans shall be prepared by a qualified professional and approved by the City's Environmental Health Department, and comply with sections 18.4, 18.7 and 18.9 of the Malibu LIP.

Prior to the receipt of the certificate of occupancy for the residence, the applicant shall submit for the review and approval of the Executive Director verification that they have obtained a valid Standard Operating Permit from the City for the proposed OSTS. This permit shall comply with all of the operation, maintenance and monitoring provisions applicable to OSTSs contained in policies 18.4 and 18.9 of the Malibu LIP.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. Project Description and Background

The applicant is proposing to demolish an existing seawall and septic system and construct an approximately 16 foot high, 36 foot long concrete seawall with 14 foot long return wall and 1250 gallon septic system on the site of an existing single family residence. The project also includes repair and replacement (as needed) of a wood deck on the seaward side of the residence **(Exhibits 3 - 7)**.

The subject site is a narrow beachfront parcel located on the south side of Pacific Coast Highway, at the western end of Las Flores Beach **(Exhibits 1 & 9)**. The site contains an existing two-story, approximately 3,000 sq. ft. pile-supported single family residence, and a damaged concrete and timber seawall. A defunct septic system is located between the seawall and the residence. The seawall and septic system were damaged during storms in July 1999, and the City of Malibu has prohibited occupancy of the residence pending their repair or replacement **(Exhibits 2, 3, & 8)**.

The proposed seawall, septic system and deck are located within the footprint of the existing damaged seawall, septic system and deck, seaward of the residence, and are not visible from Pacific Coast Highway, a designated Scenic Road in the Malibu LCP **(Exhibit 9)**. An offer-to-dedicate a public access easement (OTD), extending the width of the parcel from the seaward edge of the existing seawall to the mean high tideline, was recorded in 1984. Acceptance of the OTD by the State Lands Commission is pending.

An emergency coastal development permit [CDP No. 4-99-254-G (Fuller)] was issued in July 2000 for installation of a new alternative septic system to replace the damaged system. Although remedial efforts were made to repair the failed septic system, a new septic system was not installed.

The proposed seawall is located in an area subject to tidal action and therefore is within the Commission's original permit jurisdiction.

B. Hazards and Geologic Stability

The proposed development is located on a beachfront parcel in Malibu, an area generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to this area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Wild fires often denude hillsides in the Santa Monica Mountains of all existing vegetation, thereby contributing to an increased potential for erosion and landslides on property.

The Malibu Local Coastal Program (LCP) contains the following development policies related to hazards that are applicable to the proposed development:

Section 30253 of the Coastal Act, which is incorporated as part of the Malibu LCP, states in pertinent part that new development shall:

> ***(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.***
>
> ***(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, 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.***

In addition, the following LCP policies are applicable in this case:

> ***4.2. All new development shall be sized, designed and sited to minimize risks to life and property from geologic, flood, and fire hazard.***

4.4. On ancient landslides, unstable slopes and other geologic hazard areas, new development shall only be permitted where an adequate factor of safety can be provided, consistent with the applicable provisions of Chapter 9 of the certified Local Implementation Plan.

4.5. Applications for new development, where applicable, shall include a geologic/soils/geotechnical study that identifies any geologic hazards affecting the proposed project site, any necessary mitigation measures, and contains a statement that the project site is suitable for the proposed development and that the development will be safe from geologic hazard. Such reports shall be signed by a licensed Certified Engineering Geologist (CEG) or Geotechnical Engineer (GE) and subject to review and approval by the City Geologist.

4.11 New development involving a structure dependent on a wastewater disposal system shall utilize secondary treatment, at a minimum, and evapotranspiration waste disposal systems or other innovative measures, where feasible.

4.22 Siting and design of new shoreline development and shoreline protective devices shall take into account anticipated future changes in sea level. In particular, an acceleration of the historic rate of sea level rise shall be considered. Development shall be set back a sufficient distance landward and elevated to a sufficient foundation height to eliminate or minimize to the maximum extent feasible hazards associated with anticipated sea level rise over the expected 100 year economic life of the structure.

4.23 New development on a beach or oceanfront bluff shall be sited outside areas subject to hazards (beach or bluff erosion, inundation, wave uprush) at any time during the full projected 100-year economic life of the development. If complete avoidance of hazard areas is not feasible, all new beach or oceanfront bluff development shall be elevated above the base Flood Elevation (as defined by FEMA) and setback as far landward as possible. All development shall be setback a minimum of 10 feet landward of the most landward surveyed mean high tide line. Whichever setback method is most restrictive shall apply. Development plans shall consider hazards currently affecting the property as well as hazards that can be anticipated over the life of the structure.

4.24 All proposed development on a beach or along the shoreline, including a shoreline protection structure, 1) must be reviewed and evaluated in writing by the State Lands Commission and 2) may not be permitted if the State Lands Commission determines that the proposed development is located on public tidelands or would adversely impact tidelands unless State Lands Commission approval is given in writing.

4.26 Development on or near sandy beach or bluffs, including the construction of a shoreline protection device, shall include measures to insure that:

- *No stockpiling of dirt or construction materials shall occur on the beach;*
- *All grading shall be properly covered and sandbags and/or ditches shall be used to prevent runoff and siltation;*
- *Measures to control erosion shall be implemented at the end of each day's work;*
- *No machinery shall be allowed in the intertidal zone at any time to the extent feasible;*
- *All construction debris shall be removed from the beach.*

4.42 As a condition of approval of development on a beach or shoreline which is subject to wave action, erosion, flooding, landslides, or other hazards associated with development on a beach or bluff, the property owner shall be required to execute and record a deed restriction which acknowledges and assumes said risks and waives any future claims of damage or liability against the permitting agency and agrees to indemnify the permitting agency against any liability, claims, damages or expenses arising from any injury or damage due to such hazards.

The subject site is a narrow beachfront parcel located on the south side of Pacific Coast Highway, at the western end of Las Flores Beach. The site contains an existing single family residence and damaged seawall and septic system. The applicant proposes to demolish an existing concrete and timber seawall and septic system and construct an approximately 16 foot high, 36 foot long concrete seawall with 14 foot long return wall and 1250 gallon septic system within the same footprint. The project also includes repair and replacement (as needed) of a second story wood deck on the seaward side of the residence.

The Malibu LCP requires that new development be sited and designed to minimize risks to life and property from geologic, flood, and fire hazard. In addition, the LCP requires a geologic/soils/geotechnical study that identifies any geologic hazards affecting the proposed project site, any necessary mitigation measures, and contains a statement that the project site is suitable for the proposed development and that the development will be safe from geologic hazard. The January 10, 2002 geologic report by Gold Coast Geoservices, Inc. states:

> ***It is the opinion of the undersigned that the proposed structures will be safe against hazard from landslide, settlement, or slippage, and that the proposed construction will have no adverse geologic effect on offsite properties. Assumptions critical to our opinion are that the design recommendations will be properly implemented during the proposed construction, and that the property will be properly maintained to prevent excessive irrigation, blocked drainage devices, or other adverse conditions.***

As such, the Commission notes that the proposed project will serve to ensure general geologic and structural integrity on site. However, the Commission also notes that the submitted geologic, engineering, and wave uprush reports include a number of recommendations to ensure the geologic stability, geotechnical safety and foundation/structure safety relative to wave uprush on the site. To ensure that the recommendations of the geologic and engineering consultants are incorporated into all new development, **Special Condition One (1)** requires the applicant to submit project plans certified by the consulting engineer, geologist, and geotechnical engineer as conforming to all geologic, engineering and geotechnical recommendations, as well as any new or additional recommendations by the consulting engineer, geologist and geotechnical engineer to ensure structural and site stability. The final plans approved by the consultants shall be in substantial conformance with the plans approved by the Commission relative to construction, foundations, sewage disposal and drainage. Any substantial changes to the proposed development approved by the Commission that may be recommended by the consultants shall require an amendment to the permit or a new coastal permit.

As discussed above, the Commission notes that the applicant's engineering and geology consultants have indicated that the proposed development will serve to ensure relative geologic and structural stability on the subject site. However, the proposed development is located on a beachfront lot in the City of Malibu and will be subject to some inherent potential hazards. The

Commission notes that the Malibu coast has historically been subject to substantial damage as the result of storm and flood occurrences--most recently, and perhaps most dramatically, during the 1998 severe El Nino winter storm season. Past occurrences have caused property damage resulting in public costs through emergency responses and low-interest, publicly subsidized reconstruction loans in the millions of dollars in Malibu area alone from last year's storms.

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

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

Thus, ample evidence exists that all beachfront development in the Malibu area is subject to an unusually high degree of risk due to storm waves and surges, high surf conditions, erosion, and flooding. Furthermore, the subject site itself is clearly susceptible to flooding and/or wave damage from storm waves, storm surges and high tides, as evidenced by damage to the existing seawall and septic system, sustained during storms in July 1999. The proposed development will continue to be subject to the high degree of risk posed by the hazards of oceanfront development in the future. The Coastal Act recognizes that development, even as designed and constructed to incorporate all recommendations of the consulting coastal engineer, may still involve the taking of some risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use the subject property.

The Commission finds that due to the possibility of liquefaction, storm waves, surges, erosion, and landslide, the Commission can only approve the project if the applicant assumes the liability from the associated risks as required by **Special Condition Two (2)**. This responsibility is carried out through the recordation of a deed restriction. The assumption of risk deed restriction, when recorded against the property, will show that the applicant is aware of and appreciates the nature of the hazards which exist on the site and which may adversely affect the stability or safety of the proposed development and agrees to assume any liability for the same. In addition, the Malibu LCP specifically requires that land owners of properties within or adjacent to areas subject to landslide, other high geologic hazards, or wildfire shall be required to execute and record a deed restriction which acknowledges and assumes said risks and waives any future claims of damage or liability against the permitting agency and agrees to indemnify the permitting agency against any liability, claims, damages or expenses arising from any injury or damage due to such hazards.

In addition, the Commission notes that the proposed development includes the demolition of an existing seawall and septic system and the construction of a new septic system and seawall on the sandy beach. The Commission further notes that construction/demolition activity on a sandy beach, such as the proposed project, will result in the potential generation of debris and or presence of equipment and materials that could be subject to tidal action. The presence of construction equipment, building materials, and excavated materials on the subject site could pose hazards to beachgoers or swimmers if construction site materials were discharged into the

marine environment or left inappropriately/unsafely exposed on the project site. Further, such discharge to the marine environment would result in adverse effects to offshore habitat from increased turbidity caused by erosion and siltation of coastal waters. To ensure that adverse effects to the marine environment are minimized, **Special Condition Five (5)** requires the applicant to ensure that stockpiling of dirt or materials shall not occur on the beach, that no machinery will be allowed in the intertidal zone at any time, all debris resulting from the construction period is promptly removed from the sandy beach area, and that sand bags and/or ditches shall be used to prevent runoff and siltation. Furthermore, to ensure that the demolition of the retaining wall and any construction material is disposed of off site so as not to contribute to the loss of any materials into the ocean, the Commission finds it necessary to require the applicant to dispose of the material at a appropriate disposal site or to a site that has been approved to accept fill material, as specified in **Special Condition Five (5)**.

Therefore, for the reasons discussed above, the Commission finds that the proposed project, as conditioned, is consistent with the applicable policies of the Malibu LCP.

C. Shoreline Processes, Shoreline Protective Devices and Seaward Encroachment

The subject site is a narrow beachfront parcel located on the south side of Pacific Coast Highway, at the western end of Las Flores Beach. The site contains an existing single family residence and damaged seawall and septic system. The applicant proposes to demolish an existing seawall and septic system and construct an approximately 16 foot high, 36 foot long concrete seawall with 14 foot long return wall and 1250 gallon septic system within the same footprint. The project also includes repair and replacement (as needed) of a wood deck on the seaward side of the residence.

The proposed 36 foot wide concrete bulkhead seawall is to be founded in bedrock and connected to existing rock and concrete seawalls on either side of the subject property. In addition to the seawall, which is parallel to the shore, the applicant proposes to construct an approximately 14 foot long return wall along the western property line. The purpose of the return wall is to retain sand behind the seawall, which is used as a dispersal medium for treated water from the proposed septic system. The proposed seawall and return wall will extend to a height of approximately 16 feet above mean sea level.

The seaward portion of the proposed seawall will be located approximately 48 feet seaward of the Pacific Coast Highway right-of-way/property line. The proposed seawall is located approximately 22 feet seaward of the main residence, and approximately 6 to 17 feet seaward of the wood deck extending from the residence. The proposed septic system is located between the existing residence and the proposed seawall, and partially under the wood deck. All of the proposed development is located within the footprint of the existing seawall, septic system, and deck area.

Past Commission review of shoreline development projects in Malibu has shown that such development results in potential individual and cumulative adverse effects to coastal processes, shoreline sand supply, and public access. Shoreline development, if not properly designed to minimize such adverse effects, may result in encroachment on lands subject to the public trust (thus physically excluding the public), interference with the natural shoreline processes necessary to maintain publicly-owned tidelands and other public beach areas, overcrowding or congestion of such tideland or beach areas, and visual or psychological interference with the public's access to and the ability to use public tideland areas.

Because the proposed development includes a shoreline protective device and because such development has the potential to adversely impact natural shoreline processes, it is necessary to review the proposed project for its consistency with the City of Malibu LCP, Sections 30235, 30250(a), and 30253 of the Coastal Act and with past Commission action.

Section 30235 of the Coastal Act, which is incorporated as part of the Malibu LCP, 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, which is also incorporated as part of the Malibu LCP, states in pertinent 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.***

Section 30253 of the Coastal Act, which is also incorporated as part of the Malibu LCP, states in pertinent part that new development shall:

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

In addition, the following LCP policies are applicable in this case:

> ***4.30 In existing developed areas where new beachfront development, excluding a shoreline protective device, is found to be infill (see definition) and is otherwise consistent with the policies of the LCP, a new residential structure shall not extend seaward of a stringline drawn between the nearest adjacent corners of the enclosed area of the nearest existing residential structures on either side of the subject lot. Similarly, a proposed new deck, patio, or other accessory structure shall not extend seaward of a stringline drawn between the nearest adjacent corners of the nearest deck, patio or accessory structure on either side. All infill development shall be setback a minimum of 10 feet landward from the most landward surveyed mean high tide line on the parcel. Whichever setback method is most restrictive shall apply. The stringline method shall apply only to infill development and where it will not result in development which would require a shoreline protection structure at any time during the life of the project.***
>
> ***4.31 "Infill Development" shall apply to a situation where construction of a single-family dwelling and/or a duplex in limited situations on a vacant lot or the demolition of an existing residential dwelling and construction of a new dwelling is proposed in an***

existing, geographically definable residential community which is largely developed or built out with similar structures. When applied to beachfront development this situation consists of an existing linear community of beach fronting residences where the vast majority of lots are developed with residential dwellings and relatively few vacant lots exist. Infill development can occur only in instances where roads and other services are already existing and available within the developed community or stretch of beach. Infill development shall not apply to the construction of a shoreline protection device.

4.36 New development on or along the shoreline or a coastal bluff shall include, at a minimum, the use of secondary treatment waste disposal systems and shall site these new systems as far landward as possible in order to avoid the need for protective devices to the maximum extent feasible.

4.37 Shoreline and bluff protection structures shall not be permitted to protect new development, except when necessary to protect a new septic system and there is no feasible alternative that would allow residential development on the parcel. Septic systems shall be located as far landward as feasible. Shoreline and bluff protection structures may be permitted to protect existing structures that were legally constructed prior to the effective date of the Coastal Act, or that were permitted prior to certification of the LCP provided that the CDP did not contain a waiver of the right to a future shoreline or bluff protection structure and only when it can be demonstrated that said existing structures are at risk from identified hazards, that the proposed protective device is the least environmentally damaging alternative and is designed to eliminate or mitigate adverse impacts to local shoreline sand supply. Alternatives analysis shall include the relocation of existing development landward as well as the removal of portions of existing development. "Existing development" for purposes of this policy shall consist only of a principle structure, e.g. residential dwelling, required garage, or second residential unit, and shall not include accessory or ancillary structures such as decks, patios, pools, tennis courts, cabanas, stairs, landscaping etc.

4.39 All shoreline protection structures shall be sited as far landward as feasible regardless of the location of protective devices on adjacent lots. In no circumstance shall a shoreline protection structure be permitted to be located further seaward than a stringline drawn between the nearest adjacent corners of protection structures on adjacent lots. A stringline shall be utilized only when such development is found to be infill and when it is demonstrated that locating the shoreline protection structure further landward is not feasible.

4.44 As a condition of approval of new development on a vacant beachfront or blufftop lot, or where demolition and rebuilding is proposed, where geologic or engineering evaluations conclude that the development can be sited and designed to not require a shoreline protection structure as part of the proposed development or at any time during the life of the development, the property owner shall be required to record a deed restriction against the property that ensures that no shoreline protection structure shall be proposed or constructed to protect the development approved and which expressly waives any future right to construct such devices that may exist pursuant to Public Resources Code Section 30235.

To accurately determine what adverse effects to coastal processes may result from the proposed project, it is necessary to analyze the proposed project in relation to characteristics of the project site shoreline, location of the development on the beach, and wave action.

1. Site Shoreline Characteristics

The proposed project site is located on Las Flores Beach in the City of Malibu. Las Flores Beach is characterized as a relatively narrow sand and cobble beach that has been developed with numerous single family residences located to the east and west of the subject site. The Malibu/Los Angeles County Coastline Reconnaissance Study by the United States Army Corp of Engineers, dated April 1994, indicates that residential development on Las Flores Beach is exposed to recurring storm damage because of the absence of a sufficiently wide protective beach. The Wave Uprush Study by Pacific Engineering Group dated February 18, 2003 states that Las Flores Beach is a stable beach that oscillates seasonally between sandy summer and rocky (cobble) winter profiles.

2. Shoreline Protection Structures

As stated previously, Section 30235 of the Coastal Act requires the Commission to approve construction of protective devices if the device serves to protect coastal dependent uses, or to protect existing structures or public beaches in danger from erosion. Likewise, Policy 4.37 of the Malibu LCP allows construction of shoreline protection structures to existing structures that are at risk from identified hazards, as well as new septic systems that are located as far landward as possible, and that represent the only feasible alternative that would allow residential development on the site.

In the case of the proposed project, the proposed seawall is necessary to protect the existing residence, as well as the proposed septic system for the residence. The proposed septic system is located as far landward as possible, given the constraints of the site, and no feasible alternatives to the proposed septic system exist that would still allow residential development on the site. Therefore, the proposed project is consistent with Policy 4.37 of the Malibu LCP and Section 30235 of the Coastal Act.

3. Project Siting / Stringline Policy

As a means of controlling seaward encroachment of shoreline protective devices (SPDs) on a beach to ensure maximum public access and minimize wave hazards, as well as minimize adverse effects to coastal processes, shoreline sand supply, and public views, Policy 4.39 of the Malibu LCP provides guidelines for siting SPDs. The policy requires that all SPDs be sited as far landward as feasible, regardless of the location of SPDs on adjacent properties. The policy further limits the seaward extension of a SPD to a "stringline" drawn between the nearest corners of adjacent SPDs. This "stringline" policy only applies to infill development, and in circumstances where locating the SPD further landward is not feasible.

The proposed seawall is located approximately 48 feet seaward of the Pacific Coast Highway right-of-way/property line, approximately 22 feet seaward of the main residence, and approximately 6 to 17 feet seaward of a wood deck extending from the residence. The proposed seawall is considered "infill development," due to the built-out condition of the surrounding area. Location of the proposed seawall further landward is not feasible given that the area between the proposed seawall and the main residence is needed to accommodate the proposed septic system for the residence within required setbacks. Therefore, application of the stringline policy is allowable under Policy 4.39. The proposed seawall does not exceed the stringline that extends from the SPDs on adjacent properties on either side of the subject

property. Therefore, the location of the proposed seawall is consistent with Policy 4.39 of the Malibu LCP. As such, the Commission finds that the proposed project will not result in the seaward encroachment of development on Las Flores Beach and will serve to minimize adverse effects to coastal processes.

In addition, Malibu LCP Policy 4.30 requires that new decks within infill developments shall be sited landward of a stringline that extends from the decks on adjacent properties on either side of the subject site. The wood deck, which the applicant proposes to repair and as, necessary, replace, is located behind the deck stringline for the subject site.

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

The Commission notes that many studies performed on both equilibrium and eroding beaches have concluded that loss of beach occurs on both types of beaches where a shoreline protective device exists. In order to determine the impacts of the proposed seawall on the shoreline, the location of the proposed protective device in relationship to the expected wave runup, as calculated by the location of the Mean High Tide Line, must be analyzed.

(a) Mean High Tide Line

The Wave Uprush Study prepared by Pacific Engineering Group represents that based on a list of historical mean high tide lines, the most landward known measurement of the ambulatory mean high tide line on the project site was approximately 61 feet seaward of the Pacific Coast Highway right-of-way line, in October 1928. The seaward most extension of the proposed development (the seaward edge of the seawall) will be located approximately 48 feet seaward of the Pacific Coast Highway right-of-way line which is approximately 13 feet landward of the October 1928 mean high tide line. Based on the submitted information, the proposed development will be located landward of the mean high tide line. It is important to note, however, that the location of the mean high tide line is ambulatory in nature.

In addition, the California State Lands Commission states in their letter dated July 20, 2001:

> ***We do not at this time have sufficient information to determine whether this project will intrude upon state sovereign lands. Development 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.***

Thus, the State Lands Commission does not presently assert that the proposed project involves state property.

(b) Wave Uprush

The proposed seawall will be located about 13 feet landward of the highest surveyed mean high tide line. The Wave Uprush Study prepared by Pacific Engineering Group indicates that the maximum wave uprush at the subject site will occur approximately 10 feet seaward of the Pacific Coast Highway right-of-way line (landward of the proposed residence). This wave uprush analysis was based on the use of +0.75 foot storm surge and a sea level rise of +0.75 feet (100-year projection) resulting in a still water line (SWL) at the elevation of +7.5 feet MLLW

datum. The study further projects the highest breaking wave elevation at the site to be at elevation +14.8 feet above Mean Sea Level. The study recommends that the minimum height of the proposed seawall be at elevation of +16.0 feet above Mean Sea Level. The applicant has provided proposed plans incorporating these design heights for the proposed seawall.

The proposed project includes the installation of a new alternative secondary treatment septic system, which uses a MicroSeptec Enviroserver treatment tank with 1,250 gallon capacity and a discharge area of 238 square feet. The Commission notes that the proposed septic system is located as landward as feasible. However, the seaward extent of the septic system and leachfield (located as far as 42 feet seaward of the Pacific Coast Highway right-of-way line) will still be located within the wave uprush zone and will require a shoreline protection device to ensure the stability of the system. The Commission notes that due to the geologic constraints of the site, it is not possible to construct any type of septic system that would not be subject to periodic wave action without the construction of some form of shoreline protection as wave uprush extends to within 10 feet seaward of the road right of way. Therefore, the Commission notes that the proposed seawall is necessary to protect the proposed septic system and discharge area from wave uprush and erosion.

Based on the above discussion, the Commission finds that the proposed seawall is required to protect the septic system for the existing residence. The Commission further finds that the proposed seawall, which will be located as far landward as feasible, will be subject to wave action during storm and high tide events. Therefore, the following discussion is intended to evaluate the impacts of the proposed seawall on the beach, based on the above information which identified the specific structural design, location of the structure, and shoreline geomorphology.

5. Effects of Shoreline Protective Device on Beach

It is important to accurately calculate the potential wave runup and wave energy to which the shoreline protection device will be subjected. Dr. Douglas Inman, renowned authority on Southern California beaches finds 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 a seawall's design and location as it relates to predicting the degree of erosion that will be caused by the shoreline protection device. He states:

> ***While natural sand beaches respond to wave forces by changing their configuration into a form that dissipates the energy of the waves forming them, seawalls are rigid and fixed, and at best can only be designed for a single wave condition. Thus, seawalls introduce a disequilibrium that usually results in the reflection of wave energy and increased erosion seaward of the wall. The degree of erosion caused by the seawall is mostly a function of its reflectivity, which depends upon its design and location.***[1]

In past permit actions, the Commission has found that one of the most critical factors controlling the impact of a shoreline protection device on the beach is its position on the beach profile relative to the surf zone. Generally, the further seaward that a shoreline protective device is located, the more frequent and vigorous will be its interaction with waves. If a shoreline protective device is in fact necessary, the best location for it is at the back of the beach, where

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1 Letter from Dr. Douglas Inman to California Coastal Commission staff member and senior engineer, Lesley Ewing, February 25, 1991.

it may provide protection from the most severe storms. In contrast, a shoreline protective device constructed too close to the mean high tide line may constantly create problems related to frontal and end scour erosion, as well as upcoast sand impoundment.

Although the precise impacts of a structure located on the beach are a continual 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 seawall or bulkhead or a rock revetment seawall. The main difference between a vertical seawall or bulkhead and rock revetment seawall is their relative physical encroachment onto the beach. It has been well documented by coastal engineers and coastal geologists that shoreline protective devices and structures, in the form of either a rock revetment or vertical seawall or bulkhead, will adversely impact the shoreline as a result of beach scour, end scour (the beach areas at the end of the seawall), retention of potential beach material behind the wall, fixing of the back beach, and interruption of alongshore processes. In order to evaluate these potential impacts relative to the proposed structure and its location on Las Flores Beach, each of the identified effects will be evaluated below.

(a) 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 as a result of seawalls is a frequently observed occurrence. When waves impact a hard surface such as a coastal bluff, rock revetment, or vertical seawall or 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 conjunction with 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 on the subject acknowledges that seawalls affect the supply of beach sand.

The Wave Uprush Study prepared by Pacific Engineering Group indicates that the proposed seawall will be located seaward of the maximum wave uprush limit and will, therefore, periodically be subject to wave action. In past permit actions, the Commission has found that shoreline protective devices that are subject to wave action tend to exacerbate or increase beach erosion. The following quotation summarizes a generally accepted opinion within the discipline of coastal engineering: "Seawalls usually cause accelerated erosion of the beaches fronting them and an increase in the transport rate of sand along them."[2] In addition, experts in the field of coastal geology, who view beach processes from the perspective of geologic time, signed the following succinct statement regarding the adverse effects of shoreline protective devices:

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

2 "Saving the American Beach: A Position Paper by Concerned Coastal Geologists," Skidaway Institute of Oceanography, March 1981, page 4.

> ***increasing wave heights. As a result, they seriously degrade the environment and eventually help to destroy the areas they were designed to protect.***[3]

The above statement, which was made in 1981 and signed by 94 respected coastal geologists, indicates that sandy beach areas available for public use can be harmed through the introduction of seawalls. Thus, in evaluating an individual project, the Commission assumes that the principles reflected in that statement are applicable. To do otherwise would be inconsistent with the Commission's responsibilities under the Coastal Act to protect the public's interest in shoreline resources and to protect the public's access along the ocean and to the water.

The impact of seawalls as they relate to sand removal on the sandy beaches is further documented by the State of California, Department of Boating and Waterways, which stated:

> ***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.***[4]

Finally, Robert G. Dean underscored this observation more recently in 1987 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.***[5]

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 of the beach itself. He concludes:

> ***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.***[6]

Dr. Everts further asserts that armoring in the form of a shoreline protection device interrupts the natural process of beach retreat during a storm event and that, "a beach with a fixed landward boundary is not maintained on a recessional coast because the beach can no longer retreat."

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3 "Saving the American Beach: A Position Paper by Concerned Coastal Geologists," Skidaway Institute of Oceanography, March 1981, page 4.
4 "Shore Protection in California," State Department of Boating and Waterways (formerly Navigation and Ocean Development), 1976, page 30.
5 "Coastal Sediment Processes: Toward Engineering Solutions," Robert G. Dean, 1987.
6 Letter Report from Dr. Craig Everts, Moffatt and Nichol Engineers, to California Coastal Commission staff member and senior engineer, Lesley Ewing, March 14, 1994.

The Commission has observed this phenomenon up and down the California coast, where shoreline protection devices have successfully halted the retreat of the shoreline, 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 beaches in the City of Encinitas, in San Diego County, construction of vertical seawalls along the base of the bluffs to protect existing residential development at the top of the bluffs has resulted in preventing the bluffs' contribution of sand to the beaches. This has resulted in a narrowing of those beaches.

As set forth previously, the subject site is located on Las Flores Beach, a narrow, oscillating (equilibrium) beach that experiences seasonal erosion and recovery. The applicant's coastal engineering consultant has indicated that the proposed seawall will be acted upon by waves during storm conditions. In addition, if a seasonal eroded beach condition occurs with greater frequency due to the placement of a seawall on the subject site, then the subject beach would also accrete at a slower rate. The Commission notes that many studies performed on both oscillating and eroding beaches have concluded that a loss of beach occurs on both types of beaches where a shoreline protective device exists. Therefore, the Commission notes that the proposed seawall, over time, will result in potential adverse effects to the beach sand supply, resulting in increased seasonal erosion of the beach, and longer recovery periods.

The impacts of potential beach scour are important relative to beach use for two primary reasons. The first reason involves public access. The proposed project is located approximately one mile upcoast or west of the nearest open public vertical coastal accessway. If the beach scours at the base of the seawall, even minimal scouring in front of the approximately 36 foot long seawall will translate into a loss of beach sand available through erosion than would otherwise occur under a normal winter season if the beach were unaltered. The second impact concerns a potential increase in ocean turbulence. Scour at the face of a seawall will result in greater wave interaction with the wall and, thus, make the ocean along Las Flores Beach more turbulent than it would be normally along an unarmored beach area. Thus, the Commission has ordinarily required that shoreline protection devices be located as far landward as possible, in order to reduce adverse effects from scour and erosion. In the case of this project, the Commission notes that the applicant has located the seawall as far landward as feasible in order to provide protection for the proposed septic system, which has also been located as far landward as feasible, in order to minimize adverse effects from scour and erosion.

As discussed above, the Commission notes that the new seawall and septic system will be located as far landward as possible. However, the Commission further notes that the purpose of the seawall and return wall authorized by this permit is to protect the septic system and the existing residence on the subject site. However, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations, then the seawall and return wall approved under this permit to protect the septic system and existing residence might no longer be necessary and the adverse impacts of the shoreline protective device on public access could be eliminated through its removal or by locating it further landward. Additionally, any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protection device would result in increased adverse effects to shoreline sand supply and public access.

Therefore, to ensure that the proposed project does not result in new future adverse effects to shoreline sand supply and public access and that future impacts are reduced or eliminated,

Special Condition Six (6) requires the applicant to agree that a new coastal development permit for the shoreline protective device authorized by this permit shall be required if the proposed septic system is replaced or abandoned for any reason, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations. **Special Condition Six (6)** also requires that if any of the listed changes to the existing development on site is undertaken, and a new coastal development permit for the shoreline protective device is not obtained, then the shoreline protective device authorized by this permit shall be removed. In addition, **Special Condition Three (3)** prohibits any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to this permit, if such activity extends the seaward footprint of the subject shoreline protective device. This will prevent adverse impacts to shoreline processes from seaward extensions of the seawall.

In addition, in past permit actions, the Commission has required that new development on a beach, including the construction of new single family residences or shoreline protection devices, provide for lateral public access along the beach in order to mitigate adverse effects to public access from increased beach erosion. In this case, an offer-to-dedicate a public access easement (OTD), extending the width of the parcel from the seaward edge of the existing seawall to the mean high tideline, was recorded in 1984. Acceptance of the OTD by the State Lands Commission is pending.

In order to conclude with absolute certainty what adverse effects would result from the proposed project in relation to shoreline processes, a historical shoreline analysis based on site specific studies would be necessary. Although this level of analysis has not been submitted by the applicant, the Commission notes that because the subject property includes a public access dedication along the entire southern portion of the parcel on the sandy beach from the existing seawall to the mean high tide line, it has not been necessary for Commission staff to engage in an extensive analysis as to whether the imposition of an offer to dedicate would be required in this case.

(b) End Effects

End scour effects involve the changes to the beach profile adjacent to the shoreline protection device at either end. One of the more common end effects comes from the reflection of waves off of the shoreline protection device in such a way that they add to the wave energy which is impacting the unprotected coastal areas on either end. In addition, the Commission notes that the literature on coastal engineering repeatedly warns that unprotected properties adjacent to any shoreline protective device may experience increased erosion. Field observations have verified this concern. 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 Institute of Oceanography, it is concluded that erosion on properties adjacent to a rock seawall is intensified when wave runup is high.[7]

An extensive literature search on the interaction of seawalls and beaches was performed by Nicholas Kraus in which he found that seawalls will have effects on narrow beaches or beaches eroded by storm activity. His research indicated that the form of the erosional response to storms that occurs on beaches without seawalls which are adjacent to beaches with seawalls is

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7 "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California," Gerald G. Kuhn, Scripps Institute of Oceanography, 1981.

manifested as more localized toe scour, with end effects of flanking and impoundment at the seawall.[8] Dr. Kraus' key conclusions were that seawalls could be accountable for retention of sediment, increased local erosion and increased end erosion. Kraus states:

> ***At the present time, three mechanisms can be firmly identified by which seawalls may contribute to erosion at the coast. The most obvious is retention of sediment behind the wall which would otherwise be released to the littoral system. The second mechanism, which could increase local erosion on downdrift beaches, is for the updrift side of the wall to act as a groin and impound sand. This effect appears to be primarily theoretical rather than actualized in the field, as a wall would probably 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.[9]***

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.[10] This effect appears to extend for a distance of about six-tenths of the length of the seawall and represents both a spatial and temporal loss of beach width directly attributable to seawall construction. These end effects would be expected only when the seawall was exposed to wave attack. Under equilibrium or accreting beach conditions, this scour will likely eventually disappear during post-storm recovery. The Commission notes that end effect erosion may be minimized by locating a proposed shoreline protection device as far landward as possible in order to reduce the frequency that the seawall is subject to wave action. In the case of this project, the Commission notes that the proposed seawall will be located as far landward as feasible in order to minimize adverse effects to shoreline sand supply from end effects.

(c) Retention of Potential Beach Material

A shoreline protective device's retention of potential beach material inherently impacts shoreline processes. One of the main functions of a seawall or revetment is upland stabilization, protecting upland sediments from being carried to the beach by wave action, and prevention of bluff retreat. In the case of Las Flores Beach, which is located in the Malibu-Santa Monica Littoral Cell, the back of the beach is fixed at Pacific Coast Highway. One of the main sources of sediment for beaches is the bluff itself, as well as the material that has eroded from inland sources and is carried to the beach by coastal streams. The National Academy of Sciences found that retention of material behind a shoreline protective device may be linked to increased loss of material in front of that device. The net effect is documented in "Responding to Changes in Sea Level, Engineering Implications," which provides:

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8 "Effects of Seawalls on the Beach," Nicholas Kraus, Ph.D., Journal of Coastal Research, Special Issue #4, 1988.

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

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

> ***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...***[11]

As explained, the proposed seawall will protect the secondary treatment septic system and the existing developed area of the site from continued loss of sediment and from damage. However, the result of this protection, particularly on a narrow beach, is a loss of sediment on the sandy beach area that fronts the seawall. Furthermore, as explained previously, this loss of sediment from the active beach leads to a lower beach profile, seaward of the protective device, where the seawall will have greater exposure to wave attack.

In past permit actions, the Commission has required new development on a beach, including the construction of new single family residences or shoreline protection devices, provide for lateral public access along the beach in order to mitigate adverse effects to public access from increased beach erosion. In the case of the subject property, an offer-to-dedicate a public access easement (OTD), extending the width of the parcel from the seaward edge of the existing seawall to the mean high tideline, was recorded in 1984. Acceptance of the OTD by the State Lands Commission is pending.

As stated previously, in order to conclude with absolute certainty what adverse effects would result from the proposed project in relation to shoreline processes, a historical shoreline analysis based on site specific studies would be necessary. Although this level of analysis has not been submitted by the applicant, the Commission notes that because the subject property includes a lateral public access dedication providing for public access along the entire beach under all tidal conditions as measured landward from the mean high tideline, it has not been necessary for Commission staff to engage in an extensive analysis as to whether the imposition of an offer to dedicate would be required here absent the applicant's proposal.

6. Conclusion

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

The Commission notes that the proposed protective work is necessary to protect existing residential development and the new septic system, as previously defined in the preceding sections. The Commission notes that the proposed alternative treatment septic system has been designed to minimize both the size and seaward extent of the system. However, the seaward extent of the septic system and leachfield, located approximately 42 feet seaward of

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

the Pacific Coast Highway right-of-way line, will still be located within the wave uprush limit and will require a shoreline protection device to ensure the stability of the system. Further, the Commission notes that it is infeasible to construct any type of septic system that would not be subject to periodic wave action without the construction of some form of shoreline protection. Therefore, the Commission notes that the proposed seawall and return wall are necessary to protect the proposed septic system and leachfield from wave uprush and erosion as indicated in the Wave Uprush Study.

As discussed above, the Commission notes that the new seawall and septic system will be located as far landward as possible. However, the Commission further notes that the purpose of the seawall and return wall authorized by this permit is to protect the septic system and the existing residence on the subject site. However, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations, then the seawall and return wall approved under this permit to protect the septic system and existing residence might no longer be necessary and the adverse impacts of the shoreline protective device on public access could be eliminated through its removal or by locating it further landward. Additionally, any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protection device would result in increased adverse effects to shoreline sand supply and public access.

Therefore, to ensure that the proposed project does not result in new future adverse effects to shoreline sand supply and public access and that future impacts are reduced or eliminated, **Special Condition Six (6)** requires the applicant to agree that a new coastal development permit for the shoreline protective device authorized by this permit shall be required if the proposed septic system is replaced or abandoned for any reason, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations. **Special Condition Six (6)** also requires that if any of the listed changes to the existing development on site is undertaken, and a new coastal development permit for the shoreline protective device is not obtained, then the shoreline protective device authorized by this permit shall be removed. In addition, **Special Condition Three (3)** prohibits any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to this permit, if such activity extends the seaward footprint of the subject shoreline protective device.

As stated previously, the proposed project includes the removal of the existing damaged seawall located on the subject site. Therefore, in addition, in order to ensure that the existing retaining wall and any construction debris are removed as proposed by the applicant in a timely manner, **Special Condition Five (5)** requires the applicant to provide evidence of the disposal site and properly dispose of this material at that site. If the disposal site is located within the Coastal Zone, a coastal permit is required for the disposal.

For all of the reasons stated above, the Commission therefore finds that the proposed project, as conditioned, is consistent with City of Malibu LCP.

D. Public Access and Recreation

The Malibu Local Coastal Program (LCP) mandates the provision of maximum public access and recreational opportunities along the coast. The Malibu LCP incorporates Sections 30210, 30211, 30212, and 30220 of the Coastal Act applicable to new development along the beach.

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.***

Coastal Act Section 30211 states:

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

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

> ***(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources.***
>
> ***(2) adequate access exists nearby, or,***
>
> ***(3) agriculture would be adversely affected. Dedicated access shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.***

Section 30220 of the Coastal Act states:

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

In addition, the Malibu LCP contains the following development policies related to public access and recreation that are applicable to the proposed development:

> ***2.5 New development shall be sited and designed to minimize impacts to public access and recreation along the shoreline and trails. If there is no feasible alternative that can eliminate or avoid all access impacts, then the alternative that would result in the least significant adverse impact shall be required. Impacts may be mitigated through the dedication of an access or trail easement where the project site encompasses an LCP mapped access or trail alignment, where the City, County, State, or other public agency has identified a trail used by the public, or where there is substantial evidence that prescriptive rights exist. Mitigation measures required for impacts to public access and recreational opportunities shall be implemented prior to or concurrent with construction of the approved development.***
>
> ***2.40 For any project where the LCP requires an offer to dedicate an easement for a trail or for public beach access, a grant of easement may be recorded instead of an offer to***

dedicate an easement, if a government agency or private association is willing to accept the grant of easement and is willing to operate and maintain the trail or public beach accessway.

2.41 For all offers to dedicate an easement that are required as conditions of Coastal Development Permits approved by the City, the City has the authority to approve a private association that seeks to accept the offer. Any government agency may accept an offer to dedicate an easement if the agency is willing to operate and maintain the easement. The City shall approve any private association that submits a management plan that indicates that the association will open, operate, and maintain the easement in accordance with terms of the recorded offer to dedicate the easement.

2.63 Consistent with the policies below, maximum public access from the nearest public roadway to the shoreline and along the shoreline shall be provided in new development. Exceptions may occur only where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby, or; (3) agriculture would be adversely affected. Such access can be lateral and/or vertical. Lateral access is defined as an accessway that provides for public access and use along the shoreline. Vertical access is defined as an accessway which extends to the shoreline, or perpendicular to the shoreline in order to provide access from the first public road to the shoreline.

2.64 An Offer to Dedicate (OTD) an easement for lateral public access shall be required for all new oceanfronting development causing or contributing to adverse public access impacts. Such easement shall extend from the mean high tide line landward to a point fixed at the most seaward extent of development i.e. intersection of sand with toe of revetment, vertical face of seawall, dripline of deck, or toe of bluff.

The Malibu LCP and Sections 30210 and 30211 of the Coastal Act mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, Section 30212 of the Coastal Act requires that adequate public access to the sea be provided to allow use of dry sand and rocky coastal beaches.

All projects requiring a coastal development permit seaward of the first public road parallel the sea must be reviewed for compliance with the public access and recreation provisions of Chapter 3 of the Coastal Act in addition to the policies of the Malibu LCP. Based on the access, recreation and development sections of the Coastal Act, the Commission has required public access to and along the shoreline in new development projects and has required design changes in other projects to reduce interference with access to and along the shoreline.

The major access issue in this permit application is the occupation of sandy beach area by a structure and potential effects on shoreline sand supply and public access in contradiction of Coastal Act policies 30211 and 30221. The proposed project is located on Las Flores Beach, about one mile west or upcoast of the nearest open public vertical coastal accessway along Pacific Coast Highway. In addition, there are several existing and potential lateral public access easements across several lots in the vicinity of the project site, and an offer-to-dedicate a public access easement across the entire subject lot, from the existing seawall to the mean high tide line.

The State of California owns tidelands, which are those lands located seaward the mean high tide line as it exists from time to time. By virtue of its admission into the Union, California

became the owner of all tidelands and all lands lying beneath inland navigable waters. These lands are held in the State's sovereign capacity and are subject to the common law public trust. The public trust doctrine restricts uses of sovereign lands to public trust purposes, such as navigation, fisheries, commerce, public access, water oriented recreation, open space, and environmental protection. The public trust doctrine also severely limits the ability of the State to alienate these sovereign lands into private ownership and use free of the public trust. Consequently, the Commission must avoid decisions that improperly compromise public ownership and use of sovereign tidelands.

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

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

The Commission must consider a project's direct and indirect effect on public tidelands. To protect public tidelands when beachfront development is proposed, the Commission must consider (1) whether the development or some portion of it will encroach on public tidelands (i.e., will the development be located below the mean high tide line as it may exist at some point throughout the year) and (2) if not located on tidelands, whether the development will indirectly affect tidelands by causing physical impacts to tidelands. In the case of the proposed project, the State Lands Commission presently does not assert a claim that the project intrudes onto sovereign lands.

Even structures located above the mean high tide line, however, may have adverse impacts on shoreline processes as wave energy reflected by those structures contributes to erosion and steepening of the shore profile, and ultimately to the extent and availability of tidelands. That is why the Commission also must consider whether a project will have indirect effects on public ownership and public use of shorelands.

The Commission notes that a shoreline protective device is proposed as a part of this project to protect the proposed septic system and existing residence. The Commission further notes that interference by a shoreline protective device has a number of adverse effects on the dynamic shoreline system and the public's beach ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile, which results from reduced beach width, alter the usable area under public ownership. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions will have less horizontal distance between the mean low water and mean high water lines. This reduces the actual area of public

property available for public use. 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 seawalls cumulatively affect public access by causing accelerated and increased erosion on adjacent public beaches. This effect may not become clear until such devices are constructed individually along a shoreline and they eventually affect the profile of a public beach. Fourth, if not sited landward in a location that insures that the revetment is only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave' energy. Finally, revetments and seawalls 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.

In past permit actions, the Commission has required new shoreline protection devices to be located as far landward as possible in order to reduce adverse effects on sand supply and public access from the development. In the case of this project, the Commission notes that the proposed seawall and septic system will be located as far landward as possible. However, the Commission further notes that any future improvements to the proposed seawall that might result in the seaward extension of the shoreline protection device would result in increased adverse effects to shoreline sand supply and public access. Therefore, to ensure that the proposed project does not result in new future adverse effects to public access, **Special Condition Three (3)** requires the applicant to record a deed restriction that would prohibit any future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to this permit if such activity extends the seaward footprint of the subject shoreline protective device.

Likewise, the purpose of the shoreline protective device authorized by this permit is to protect the septic system and existing residence on the subject site. However, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations, then the seawall and return wall approved under this permit to protect the septic system and existing residence might no longer be necessary and the adverse impacts of the shoreline protective device on public access could be eliminated through its removal or by locating it further landward.

Therefore, to ensure that the proposed project does not result in new future adverse effects to shoreline sand supply and public access and that future impacts are reduced or eliminated, **Special Condition Six (6)** requires the applicant to agree that a new coastal development permit for the shoreline protective device authorized by this permit shall be required if the proposed septic system is replaced or abandoned for any reason, if the septic system approved under this permit were replaced or abandoned, if the existing residence was partially or completely demolished and replaced, if additions or new structure(s) were built on the site, or if changes were made to the existing foundations. **Special Condition Six (6)** also requires that if any of the listed changes to the existing development on site is undertaken, and a new coastal development permit for the shoreline protective device is not obtained, then the shoreline protective device authorized by this permit shall be removed.

Furthermore, the Commission must also consider whether a project affects any public right to use shorelands that exist independently of the public's ownership of tidelands. In addition to a

new development's effects on tidelands and on public rights which are protected by the common law public trust doctrine, the Commission must consider whether the project will affect a public right to use beachfront property, independent of the ownership underlying the land on which the public use takes place. Generally, there are three additional types of public uses, which are identified as: (1) the public's recreational rights in navigable waters guaranteed to the public under the California Constitution and State common law, (2) any rights that the public might have acquired under the doctrine of implied dedication based on continuous public use over a five year period, and (3) any additional rights that the public might have acquired through public purchase or offers to dedicate.

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

The beaches of Malibu are extensively used by visitors of both local and regional origin and most planning studies indicate that attendance of recreational sites will continue to increase significantly in the future. The public has a right to use the shoreline under the public trust doctrine, the California Constitution, and State common law. The Commission must protect those public rights by assuring that any proposed shoreline development does not interfere with or will only minimally interfere with those rights. In the case of the proposed project, the potential for the permanent loss of sandy beach as a result of the change in the beach profile, steepening from potential scour effects, and presence of a residential structure out over the sandy beach do exist.

In past permit actions, the Commission has required that all new development on a beach, including the construction of new single family residences or shoreline protection devices, provide for lateral public access along the beach in order to mitigate adverse effects to public access from increased beach erosion. In this case, an offer-to-dedicate a public access easement (OTD), extending the width of the parcel from the seaward edge of the existing seawall to the mean high tideline, was recorded in 1984. Acceptance of the OTD by the State Lands Commission is pending.

In order to conclude with absolute certainty what adverse effects would result from the proposed project in relation to shoreline processes, a historical shoreline analysis based on site specific studies would be necessary. Although this level of analysis has not been submitted by the applicant, the Commission notes that because the subject property includes a public access dedication along the entire southern portion of the parcel on the sandy beach from the existing seawall to the mean high tide line, it has not been necessary for Commission staff to engage in an extensive analysis as to the adequacy of this dedication or whether the imposition of an offer to dedicate would be required in this case.

For all of these reasons, therefore, the Commission finds that, as conditioned, the proposed project is consistent with the Malibu LCP and the public access and recreation policies of the Coastal.

E. Water Quality

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

Section 30230 of the Coastal Act, which is incorporated as part of the Malibu LCP, states:

> ***Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.***

Section 30231 of the Coastal Act, which is also incorporated as part of the Malibu LCP, states:

> ***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.***

In addition, the Malibu LCP includes the following policies that are relevant in this case:

3.95 New development shall be sited and designed to protect water quality and minimize impacts to coastal waters by incorporating measures designed to ensure the following:

- ***Protecting areas that provide important water quality benefits, areas necessary to maintain riparian and aquatic biota and/or that are susceptible to erosion and sediment loss.***
- ***Limiting increases of impervious surfaces.***
- ***Limiting land disturbance activities such as clearing and grading, and cut-and-fill to reduce erosion and sediment loss.***
- ***Limiting disturbance of natural drainage features and vegetation.***

3.96 New development shall not result in the degradation of the water quality of groundwater basins or coastal surface waters including the ocean, coastal streams, or wetlands. Urban runoff pollutants shall not be discharged or deposited such that they adversely impact groundwater, the ocean, coastal streams, or wetlands, consistent with the requirements of the Los Angeles Regional Quality Control Board's municipal stormwater permit and the California Ocean Plan.

3.110 New development shall include construction phase erosion control and polluted runoff control plans. These plans shall specify BMPs that will be implemented to minimize erosion and sedimentation, provide adequate sanitary and waste disposal facilities and prevent contamination of runoff by construction chemicals and materials.

3.125 Development involving onsite wastewater discharges shall be consistent with the rules and regulations of the L.A. Regional Water Quality Control Board, including Waste Discharge Requirements, revised waivers and other regulations that apply.

3.126 Wastewater discharges shall minimize adverse impacts to the biological productivity and quality of coastal streams, wetlands, estuaries, and the ocean. On-site treatment systems (OSTSs) shall be sited, designed, installed, operated, and maintained to avoid contributing nutrients and pathogens to groundwater and/or surface waters.

3.127 OSTSs shall be sited away from areas that have poorly or excessively drained soils, shallow water tables or high seasonal water tables that are within floodplains or where effluent cannot be adequately treated before it reaches streams or the ocean.

3.128 New development shall be sited and designed to provide an area for a backup soil absorption field in the event of failure of the first field.

3.130 Subsurface sewage effluent dispersal fields shall be designed, sited, installed, operated, and maintained in soils having acceptable absorption characteristics determined either by percolation testing, or by soils analysis, or by both. No subsurface sewage effluent disposal fields shall be allowed beneath nonporous paving or surface covering.

3.131 New development shall include the installation of low-flow plumbing fixtures, including but not limited to flow-restricted showers and ultra-low flush toilets, and should avoid the use of garbage disposals to minimize hydraulic and/or organic overloading of the OSTS.

3.132 New development may include a separate greywater dispersal system where approved by the Building Safety Department.

3.133 New development shall include protective setbacks from surface waters, wetlands and floodplains for conventional or alternative OSTSs, as well as separation distances between OSTS system components, building components, property lines, and groundwater. Under no conditions shall the bottom of the effluent dispersal system be within five feet of groundwater.

3.134 The construction of private sewage treatment systems shall be permitted only in full compliance with the building and plumbing codes and the requirements of the LA RWQCB. A coastal development permit shall not be approved unless the private sewage treatment system for the project is sized and designed to serve the proposed development and will not result in adverse individual or cumulative impacts to water quality for the life of the project.

3.138 Applications for new development relying on an OSTS shall include a soils analysis and or percolation test report. Soils analysis shall be conducted by a California Registered Geotechnical Engineer or a California Registered Civil Engineer in the environmental/geotechnical field and the results expressed in United States Department of Agriculture classification terminology. Percolation tests shall be conducted by a California Registered Geologist, a California registered Geotechnical Engineer, a California Registered Civil Engineer, or a California Registered Environmental Health Specialist. The OSTS shall be designed, sited, installed, operated, and maintained in full compliance with the building and plumbing codes and the requirements of the LA RWQCB.

3.139 New septic systems shall be sited and designed to ensure that impacts to ESHA, including those impacts from grading and site disturbance and the introduction of increased amounts of groundwater, are minimized. Adequate setbacks and/or buffers shall be required to protect ESHA and other surface waters from lateral seepage from the sewage effluent dispersal systems.

3.141 Applications for a coastal development permit for OSTS installation and expansion, where groundwater, nearby surface drainages and slope stability are likely to be adversely impacted as a result of the projected effluent input to the subsurface, shall include a study prepared by a California Certified Engineering Geologist or Registered Geotechnical Engineer that analyzes the cumulative impact of the proposed OSTS on groundwater level, quality of nearby surface drainages, and slope stability. Where it is shown that the OSTS will negatively impact groundwater, nearby surface waters, or slope stability, the OSTS shall not be allowed.

The Malibu LCP water quality policies cited above are designed to protect water quality and prevent pollution of surface, ground, and ocean waters. As noted above, the applicant proposes to demolish an existing seawall and septic system and construct an approximately 16 foot high, 36 foot long concrete seawall with 14 foot long return wall and 1250 gallon septic system within the same footprint. The project also includes repair and replacement (as needed) of a wood deck on the seaward side of the residence. As such, the proposed project will involve excavation and disturbance of the site, thus increasing the potential for sedimentation of adjacent ocean waters.

The Malibu LCP requires the preparation of a Storm Water Management Plan (SWMP) for all projects that require a coastal development permit. A SWMP illustrates how the project will use appropriate site design and source control best management practices (BMPs) to minimize or prevent adverse effects of the project on water quality. Therefore, pursuant to the requirements of the Malibu LCP, and to ensure the proposed project will not adversely impact water quality or coastal resources, the Commission finds it necessary to require the preparation of a SWMP for the subject site, that utilizes site design and source control BMPs, as specified in **Special Condition Seven (7).**

Furthermore, erosion control and storm water pollution prevention measures implemented during construction will serve to minimize the potential for adverse impacts to water quality resulting from runoff during construction. The Malibu LCP requires that a Local Storm Water Pollution Prevention Plan (SWPPP) be prepared for all development that requires a Coastal Development Permit and a grading or building permit, for use during the construction phase of the project. The SWPPP includes measures and BMPs to prevent erosion, sedimentation and pollution of surface and ocean waters from construction and grading activities. In this case, the proposed project does involve excavation, backfilling, and construction that requires building permits. Therefore, pursuant to the Malibu LCP and to ensure the proposed development does not adversely impact water quality or coastal resources during the construction phase of the project, the Commission finds it necessary to require the applicant to submit a Local SWPPP for the subject site, consistent with the requirements specified in **Special Condition Seven (7)**.

In addition, the proposed development includes the upgrade of an on site wastewater treatment system (OSTS) to serve the residence. The applicant is proposing to construct a new 1,250 gallon MicroSeptec EnviroServer alternative secondary treament tank with an effluent filter. The Malibu LCP includes a number of policies and standards relative to the design, siting, installation, operation and maintenance of OSTSs to ensure these systems do not adversely impact coastal waters. The proposed upgrades to the existing OSTS were previously reviewed

and approved in concept by the City of Malibu Environmental Health Department, determining that the system meets the requirements of the plumbing code. However, with the recent adoption of the Malibu LCP, new, more stringent standards regarding the siting, design, installation, operation and maintenance of OSTSs have been established. Therefore, the Commission finds that it is necessary to require the applicant to submit a report and plans prepared by a qualified professional, that have been reviewed and approved by the City of Malibu Environmental Health Department, verifying the proposed septic system complies with the siting, design, installation, operation and maintenance requirements specified in **Special Condition Eight (8).**

In addition, in order to ensure the OSTS is maintained and monitored in the future to prevent system failures or inadequate system performance, the Malibu LCP includes policies and standards requiring the regular maintenance and monitoring of the OSTS. Therefore, the Commission finds that it is necessary to require the applicant to submit verification that they have obtained a monitoring, operation and maintenance permit from the City, as outlined in **Special Condition Eight (8).**

Finally, the City of Malibu Environmental Health Department has given in-concept approval of the proposed septic system, determining that the system meets the requirements of the plumbing code. The Commission has found that conformance with the provisions of the plumbing code is protective of resources.

The Commission finds that based on the above findings the proposed project, as conditioned, will not result in adverse impacts to water quality and is consistent with the applicable policies of the Malibu LCP.

F. California Environmental Quality Act

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmentally Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect that the activity may have on the environment.

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

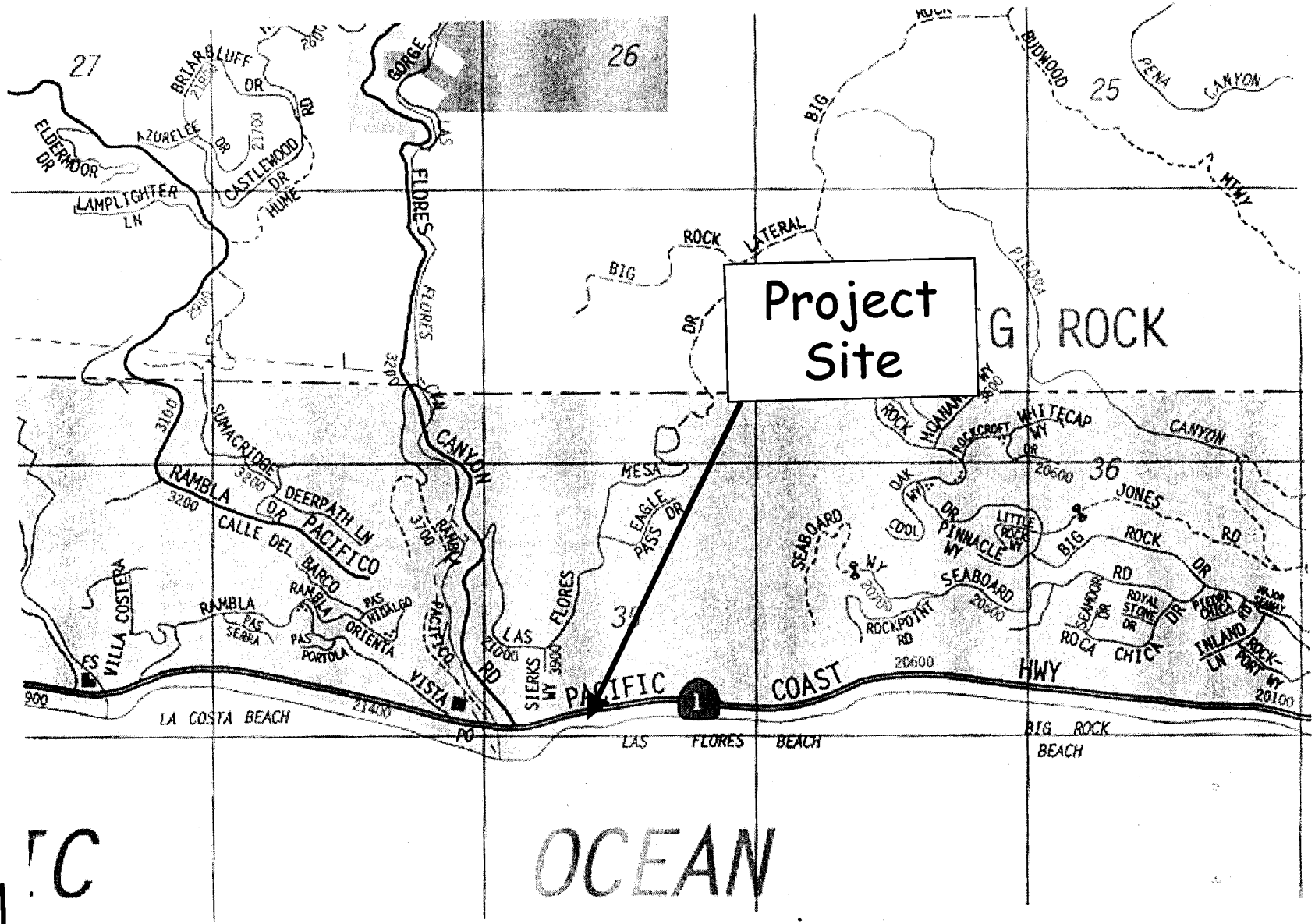


EXHIBIT NO. 1
APPLICATION NO.
4-00-185
VICINITY MAP

PROPERTY ADDRESS:

21002 PACIFIC COAST HIGHWAY
MALIBU, CA 90265

ACCESSORS PARCEL NO'S:

4450-010-019 (LOS ANGELES COUNTY)

LEGAL DESCRIPTION:

PORTION OF LOT 66 OF TRACT NO. 12634 IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON A MAP RECORDED IN BOOK 260 OF MAPS, PAGES 25-27 IN THE OFFICE OF THE RECORDER OF SAID COUNTY.

BASIS OF BEARINGS:

THE BEARING OF N 88°46'30"E ALONG THE CENTERLINE OF PACIFIC COAST HWY AS SHOWN ON TRACT 12634 AS RECORDED IN BOOK 260 PAGES 25-27 OF MAPS IN THE OFFICE OF THE RECORDER OF LOS ANGELES COUNTY, STATE OF CALIFORNIA, WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

BENCH MARK:

MALIBU (1998) Y 987.4 — L&T IN CONC CB OF BRIDGE OVER LOS FLORES CYN RM S C/L PACIFIC COAST HWY & 30M E/O C/L RAMBLA PACIFICO RD 6M W/O E END BRIDGE - 18.274 FEET

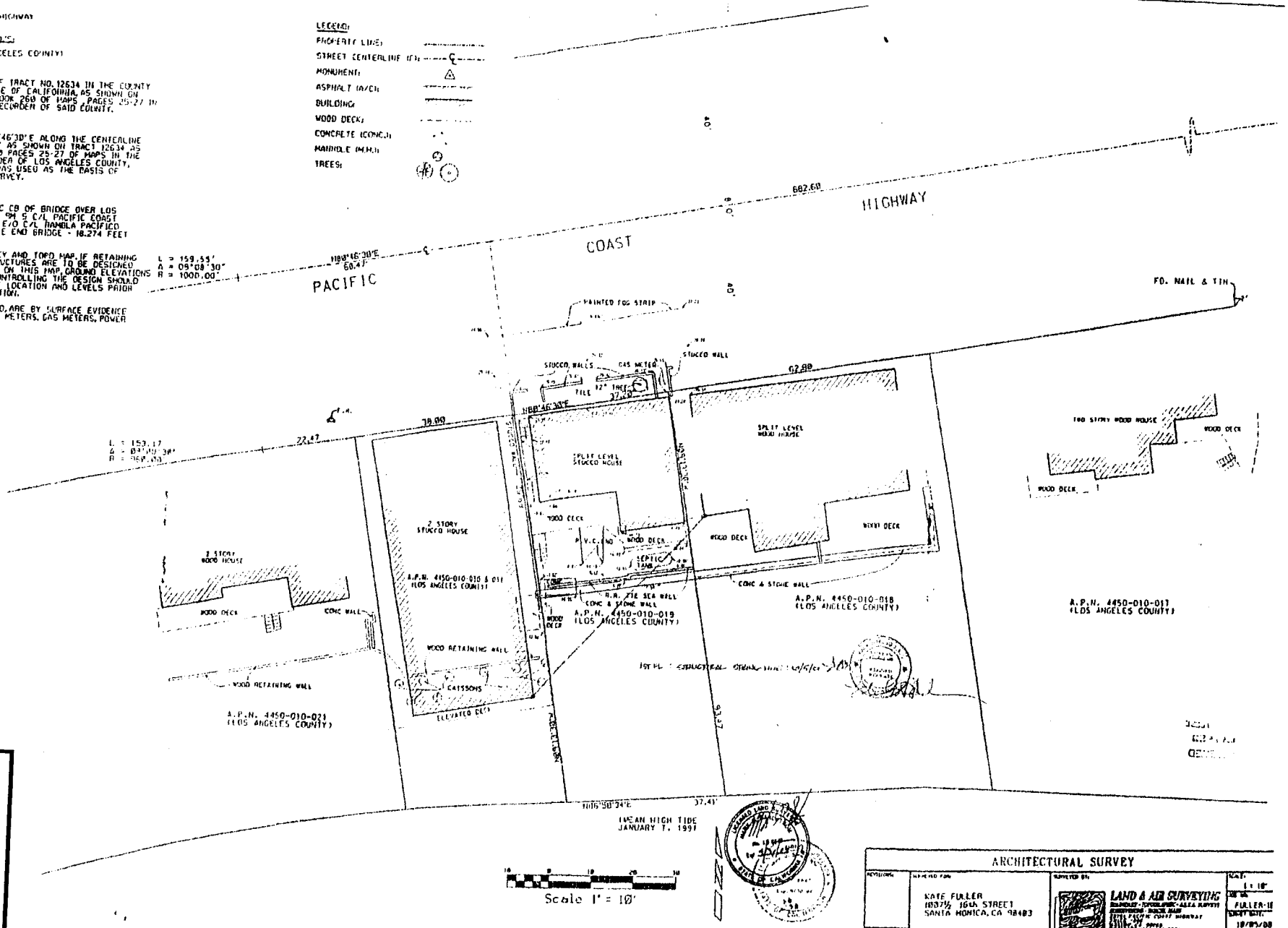
NOTES:

1) PERTAINING TO SURVEY AND TOPO MAP. IF RETAINING WALLS OR SIMILAR STRUCTURES ARE TO BE DESIGNED FROM CONTOURS SHOWN ON THIS MAP, GROUND ELEVATIONS AT CRITICAL POINTS CONTROLLING THE DESIGN SHOULD BE VERIFIED BY DIRECT LOCATION AND LEVELS PRIOR TO FINAL DESIGN ADOPTION.

2) UTILITIES, IF LOCATED, ARE BY SURFACE EVIDENCE ONLY. (MANHOLES, WATER METERS, GAS METERS, POWER POLES, ETC.)

LEGEND:

PROPERTY LINE) ———
STREET CENTERLINE (CL) ——— ℄ ———
MONUMENT: △
ASPHALT (A/C) ~~~~~
BUILDING ▭
WOOD DECK) - - - -
CONCRETE (CONC.) . . .
MANHOLE (M.H.) ⊙
TREES: (illegible)



ARCHITECTURAL SURVEY

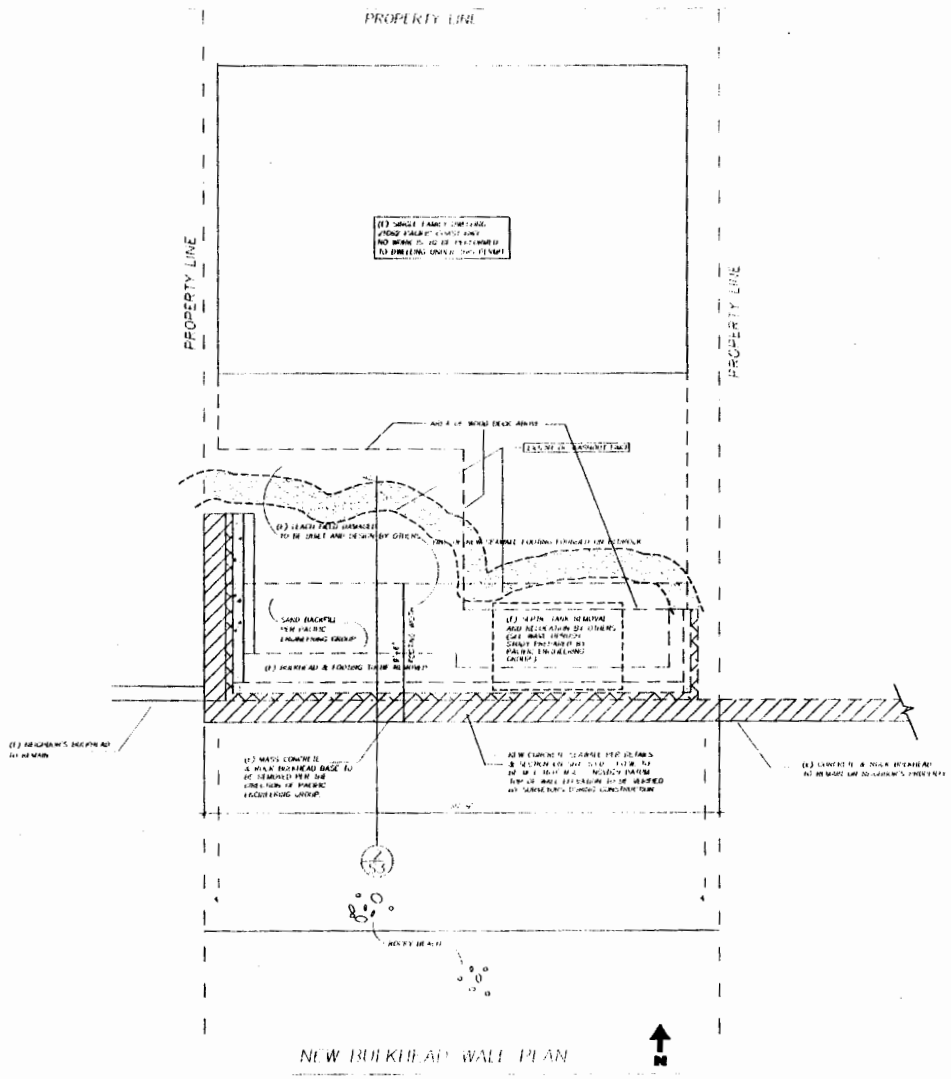
KATE FULLER
1007½ 16th STREET
SANTA MONICA, CA 90403

LAND & AIR SURVEYING

DATE: 10/05/00

EXHIBIT NO. 2
APPLICATION NO.
4-00-185
SURVEY / STRINGLINE

21062 PACIFIC COAST HWY



NEW BULKHEAD WALL PLAN

SCALE: 1/4"=1'-0"

no new grading proposed.

CITY OF MALIBU
Approved
Date
By

DATE	ISSUE
06/27/00	COASTAL COMMISSION
06/27/00	OWNER
07/31/00	CITY OF MALIBU
11/15/00	CITY OF MALIBU

DATE	No.	REVISIONS / BY:

THE GENERAL CONTRACTOR AND/OR ALL SUB CONTRACTORS WORKING FROM THESE PLANS AND SPECIFICATIONS ARE NOT TO SCALE SUCH DRAWINGS/SKETCH TO CONTACT THE ENGINEER OR HIS REPRESENTATIVE. ENGINEERING MEASUREMENTS. IF SUCH MEASUREMENTS DO NOT APPEAR CORRECT, ADD AP PROPERLY OR SCALE CORRECTLY TO THE INDICATED SIZE.

STRUCTURAL CONSULTANTS, INC.

"Complete Structural Engineering Services, Nationwide"
www.structuralconsulting.com

GREG RILEY, PE
25236 Lyons Avenue, Suite 230
Santa Clarita, California 91321
(661) 287-3800 Phone
(661) 287-3806 Fax
griley@sci.com

GREG RILEY
PROFESSIONAL ENGINEER

AL 23263	KA 20992	OR 10001
AK	MS 9529	OR 61611
AZ 33442E	MO 25471	PA 57555
AR 10115	MA	RI
CA 34572	MI 45979	SC 20555
CO 20547	MN	SD 7176
CT	MS 14282	TX 76555
D.C.	NO. E 20001 76564	TX 87302
DE 12165	MT 14340	UT 4564455
FL 46262	NE S 9539	VT 7741 DE
GA 20457	NV 14455	VA 32510
HI	N.H. 10297	WA 36245
ID 9541	N.J. 43535	W V
IL 54264	N.M. 14053	WI 34455
IN	N.Y.	WY 5455 WE
IO 13259 CE	N.C. 20105	GUAM
KA 16149	N.D.	P RICO
KY	OH 64135	VIRGIN IS

PROJECT:
Ms. Kate Fuller
Bulkhead Repair

LOCATION:
21062 Pacific Coast Hwy
Malibu, California

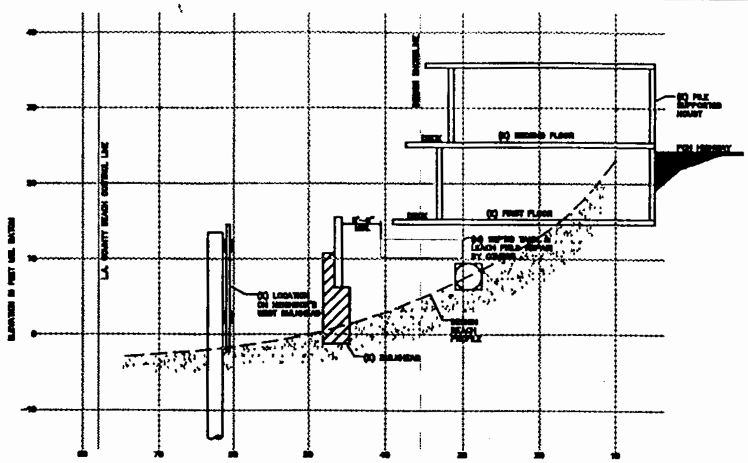
PROJECT NO. F0002	DRAWN BY: S.L.
SCALE: 1/4"=1'-0"	CHECKED BY: G.R.
DATE: 07.31.00	APPROVED BY: G.R.

DRAWING NAME:
New Concrete Bulkhead Wall Plan

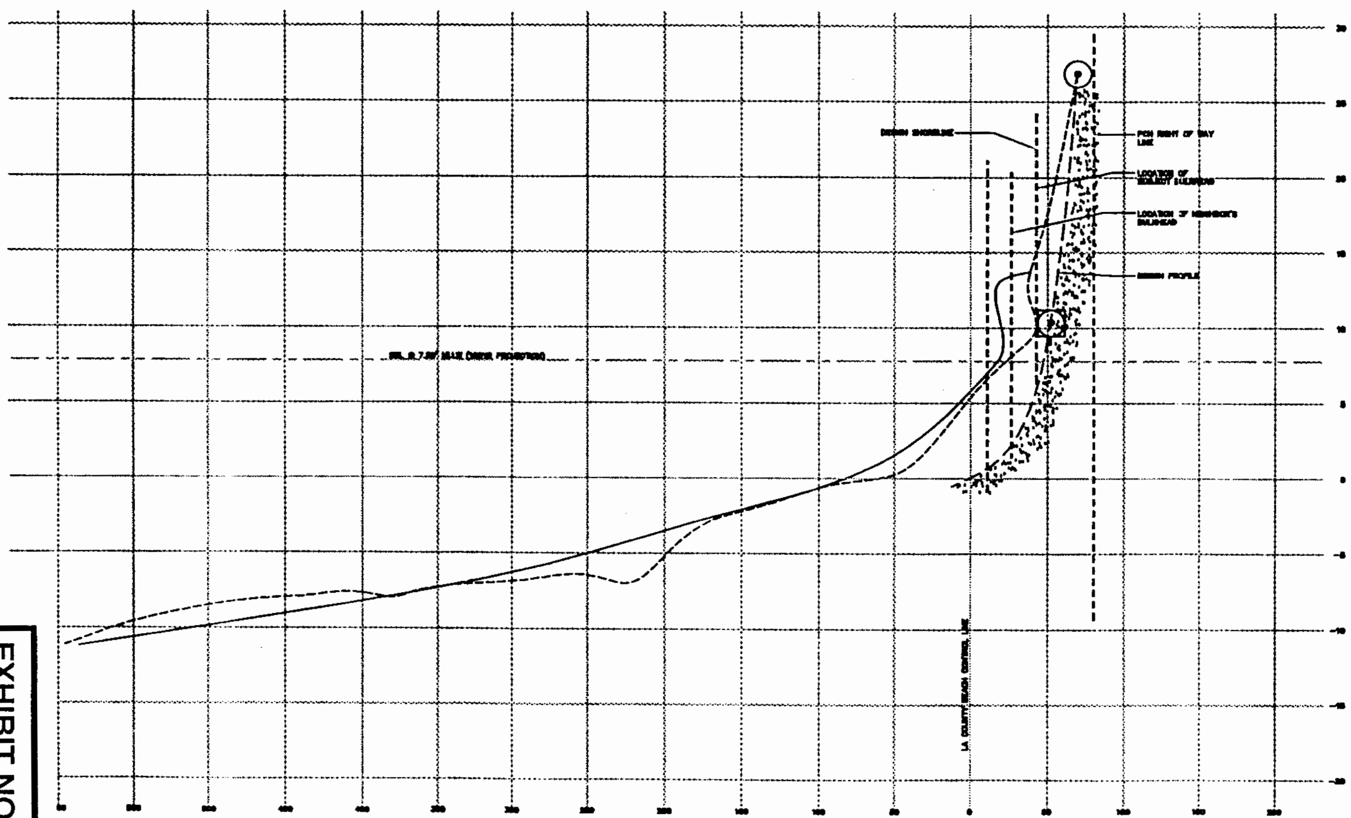
DRAWING NO.
S 2.0

PROFESSIONAL SEAL

EXHIBIT NO. 3
APPLICATION NO.
4-00-185
SEAWALL PLAN



ELEVATION



DESIGN BEACH PROFILE

DATE:	ISSUE
06.27.00	COASTAL COMMISSION
06.27.00	OWNER
07.31.00	CITY OF MALIBU

DATE:	No.	REVISIONS / BY:

Structural Engineering Consultants, Inc.

Greg Riley P.E.

GREG RILEY
PROFESSIONAL ENGINEER

PROJECT:
Ms. Kate Fuller
Bulkhead Repair

LOCATION:
21082 Pacific Coast Hwy.
Malibu, California

PROJECT NO. F0002	DRAWN BY: C. Bowman
SCALE: As Noted	CHECKED BY: G.Riley
DATE: 07.31.00	APPROVED BY: G.Riley

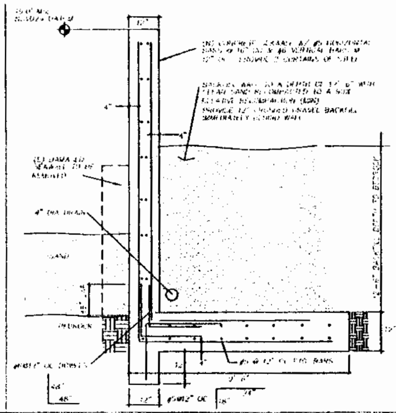
DRAWING NAME:
Elevation & Design Beach Profile

DRAWING NO.
S2.1

EXHIBIT NO. 4
APPLICATION NO.
4-00-185
ELEVATION / PROFILE

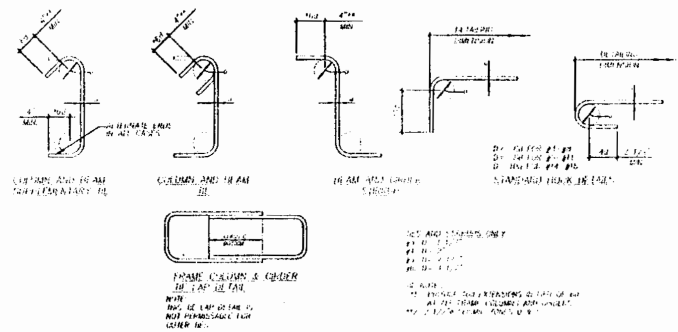
DATE:	ISSUE
06.27.00	COASTAL COMMISSION
06.27.00	OWNER
07.31.00	CITY OF MALIBU
11.15.00	CITY OF MALIBU

DATE: No. REVISIONS / BY:



NOT USED | 3

Sea Wall Detail | 2



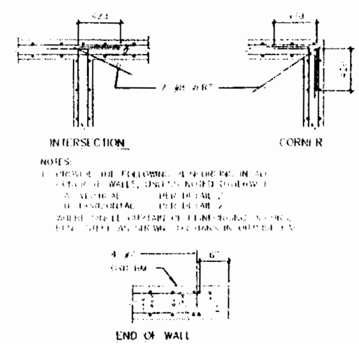
Typical Std. Hook & Tie Detail | 1

LAP LENGTH SCHEDULE

BAR SIZE	UNCOATED		EPOXY COATED	
	4,000 psi	5,000 psi	4,000 psi	5,000 psi
#5	[illegible]	51	54	47
#6	[illegible]	57	64	56
#7	[illegible]	54	[illegible]	81
#8	72	62	[illegible]	93
#9	[illegible]	[illegible]	[illegible]	105
#10	[illegible]	[illegible]	136	118

Lap Length Schedule | 5

NOT USED | 4



NOT USED | 8

NOT USED | 7

Typical Concrete Wall Reinf. | 6

STRUCTURAL CONSULTANTS, INC.

"Complete Structural Engineering Services, Nationwide"

GREG RILEY, PE

GREG RILEY
PROFESSIONAL ENGINEER

PROJECT:
Ms. Kate Fuller
Bulkhead Repair

LOCATION:
21062 Pacific Coast Hwy.
Malibu, California

PROJECT NO. F0002	DRAWN BY: S.L.
SCALE: NONE	CHECKED BY: G.R.
DATE: 07.31.00	APPROVED BY: G.R.

DRAWING NAME:
Specifications and Notes

DRAWING NO.
S 3.0

PROFESSIONAL SEAL

EXHIBIT NO. 5
APPLICATION NO.
4-00-185
SEAWALL SPECIFICATIONS

21062 PACIFIC COAST HWY.
MALIBU, CA 90265

S.F.D.:	2 Bedroom (E)
TREATMENT TANK:	1250 Gallon EnviroServer 600 (N)
ACTIVE:	1 - 13' X 16' plus 3' X 10' Drainfield with 2' Extra Rock (N)
FUTURE:	N/A
PERC RATE:	Sand Category

NOTES:

1. This approval is for a new bulkhead, and for a new alternative private sewage disposal system, as shown.

2. This approval only relates to the minimum requirements of the City of Malibu Uniform Plumbing Code and does not include an evaluation of any geological, or other potential problems, which may require an alternative method of wastewater disposal.

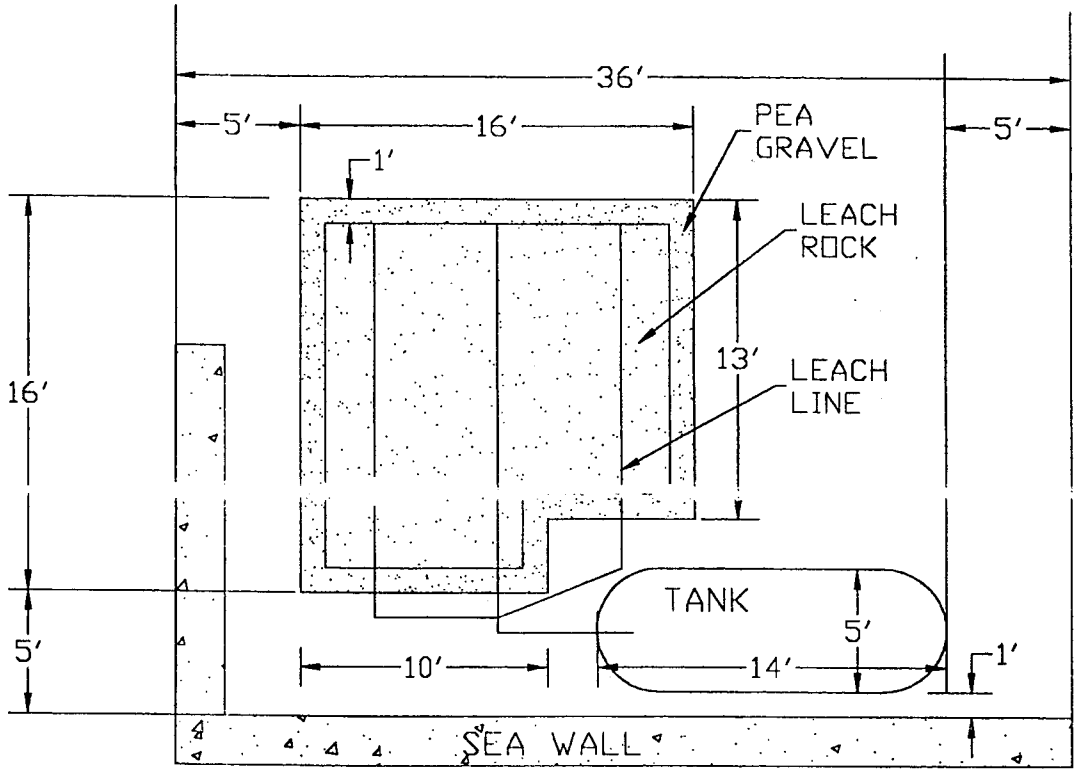
3. This approval is valid one year or until City of Malibu Uniform Plumbing Code and/or Administrative Policy changes render it noncomplying.

CITY OF MALIBU
ENVIRONMENTAL HEALTH

IN-CONCEPT APPROVAL

SIGNATURE JAN 21 2003 L Young

FINAL APPROVAL IS REQUIRED PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMITS.



238 SQ. FT. DISPOSAL BED
MIN = 3 X 150 / 2 = 225 SQ FT

SCALE: 1" = 5'

EXHIBIT NO. 6
APPLICATION NO. 4-00-185
SEPTIC APPROVAL

MicroSepTec EnviroServer 600, 1200

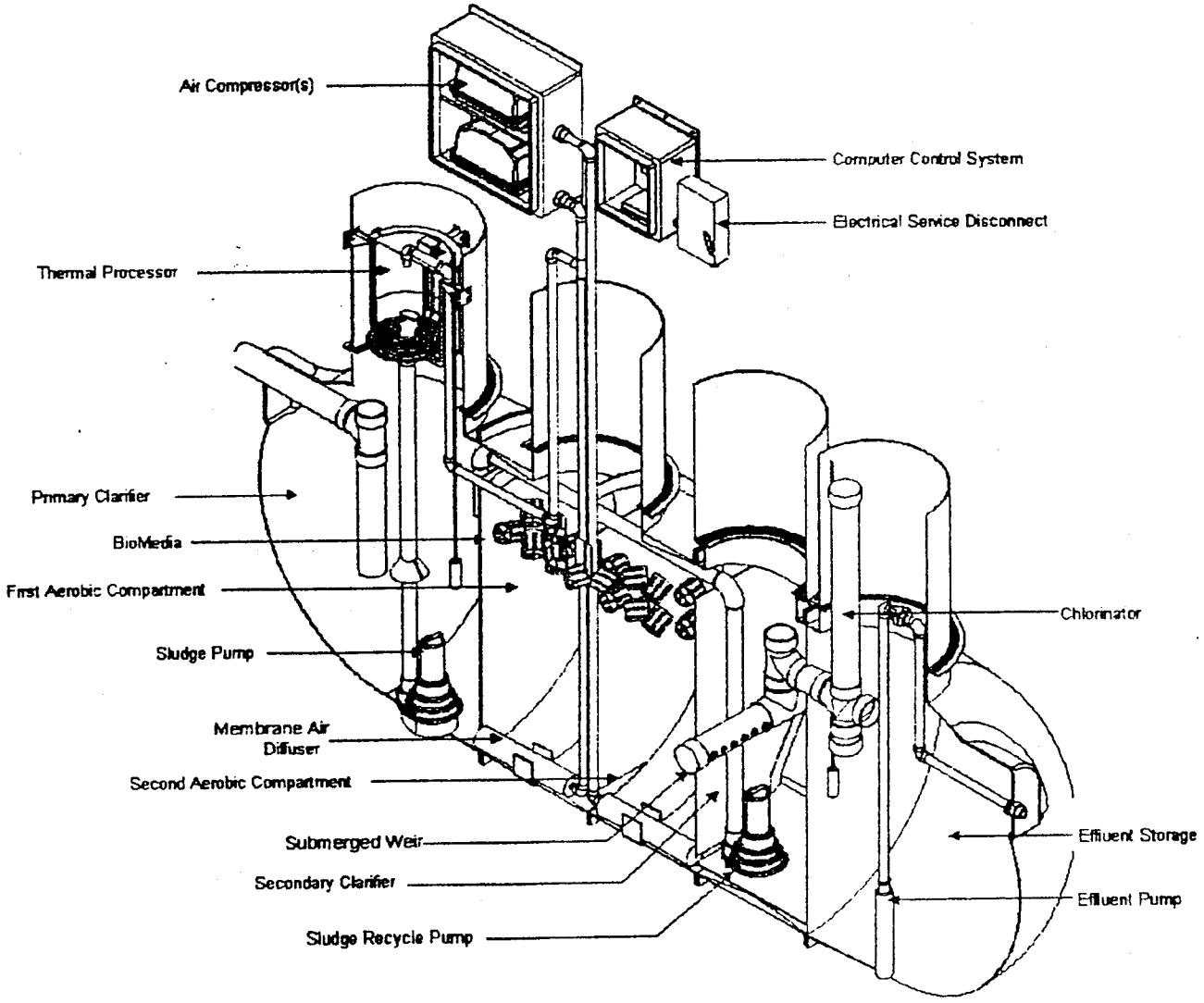


EXHIBIT NO. 7
APPLICATION NO.
4-00-185
SEPTIC TANK DETAIL

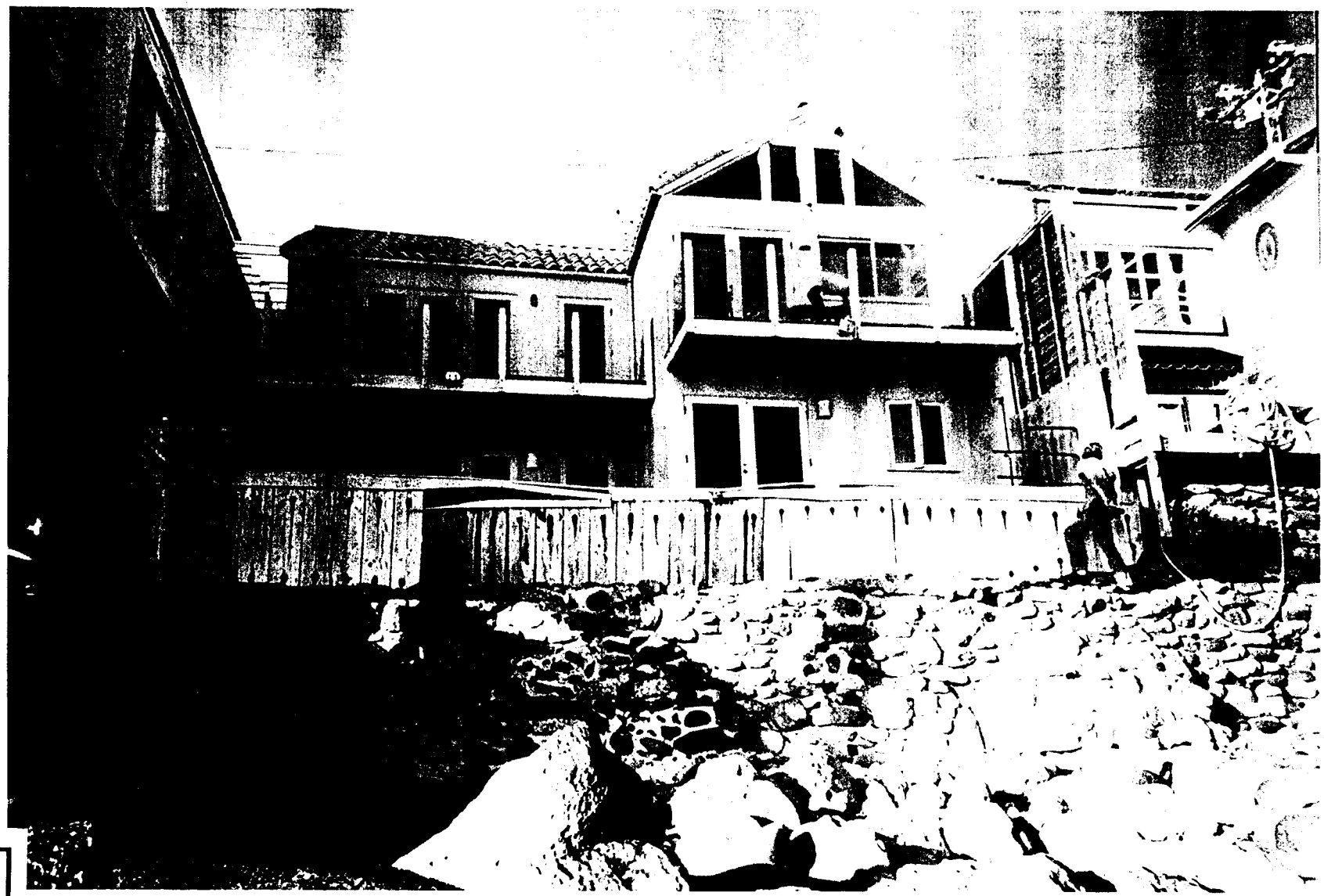


Photo 1. Existing residence and damaged seawall. View is to the north.

EXHIBIT NO. 8
APPLICATION NO.
4-00-185
PHOTOS (3 pgs.)

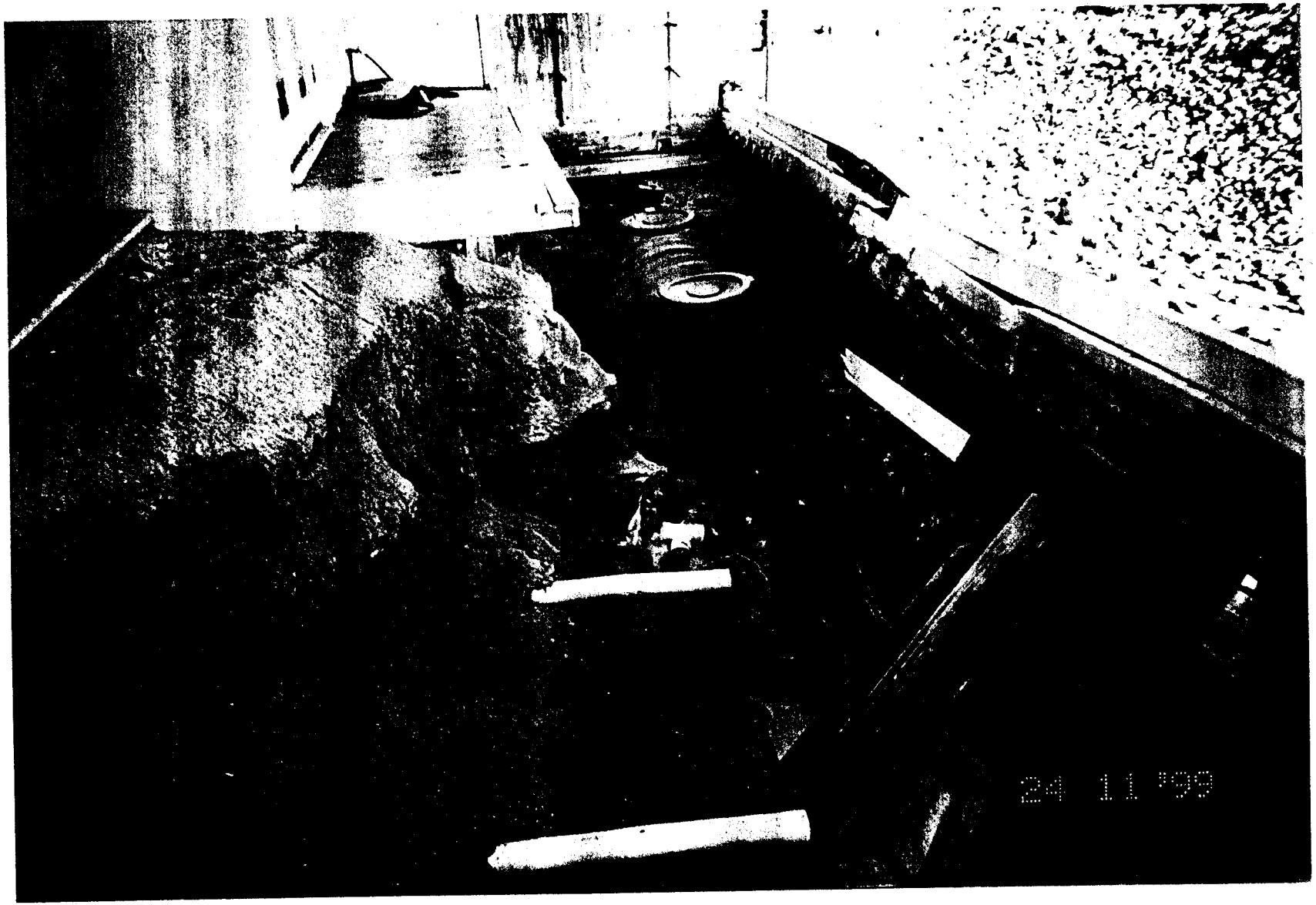


Photo 2. Landward portion of damaged seawall, with septic tank and wood decks. View is to the east.

Photo 3. Damaged seawall, with wood deck and septic area behind. View is to the northeast.

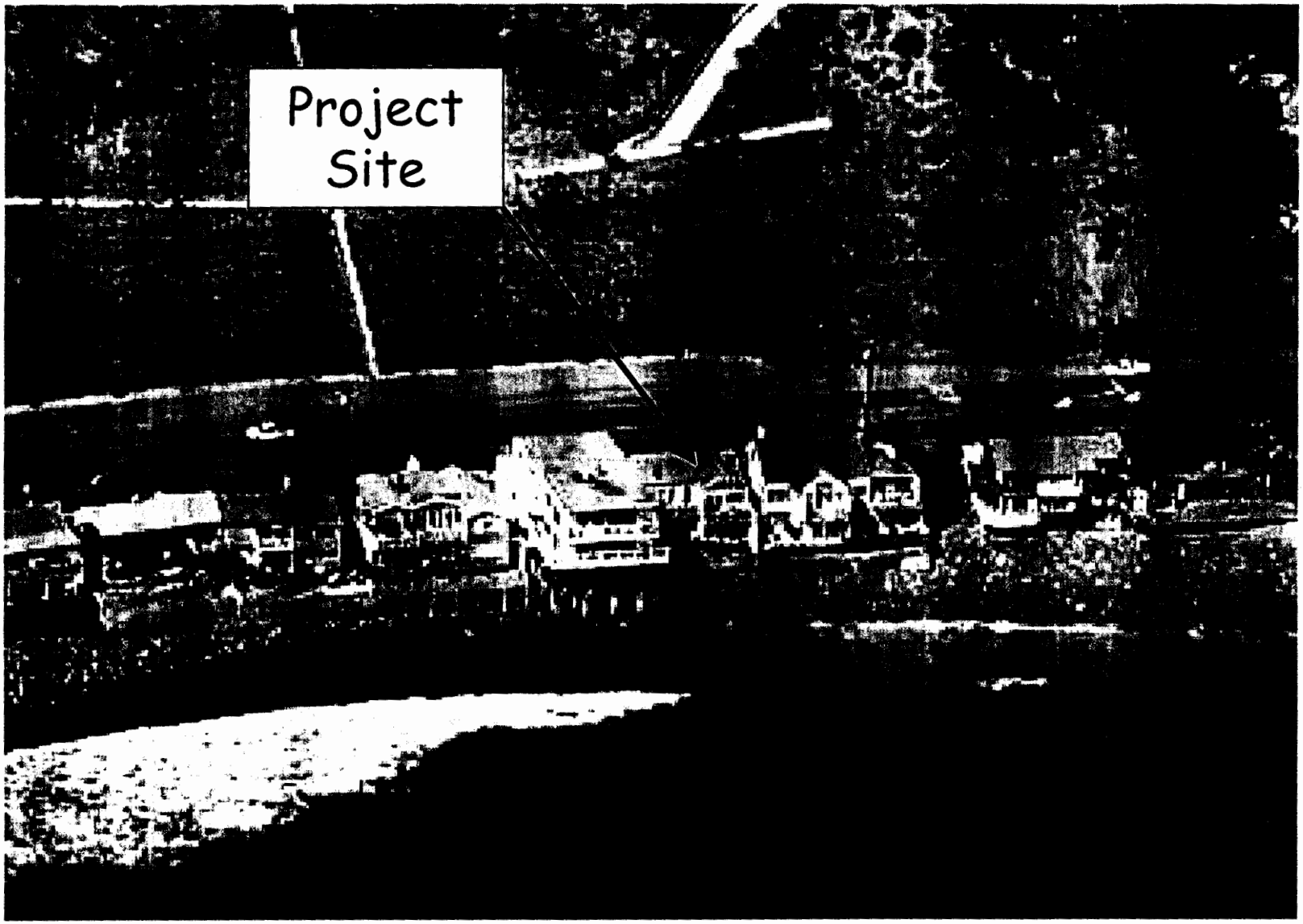


EXHIBIT NO. 9
APPLICATION NO.
4-00-185
AERIAL VIEW