

CALIFORNIA COASTAL COMMISSION

SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 641 - 0142

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Hearing Date: 9/12/00
Commission Action:



STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-00-111

APPLICANT: Brian Kilb

AGENT: Susan McCabe

PROJECT LOCATION: 19906 Pacific Coast Highway, City of Malibu, Los Angeles County

PROJECT DESCRIPTION: Construct a 55 lineal foot long 'as built' masonry seawall with new concrete underpinning to protect existing single family residence. Seawall includes two end walls about 11 and 14 feet long. Construct a concrete and steel "cap" constructed temporarily as a result of Coastal Emergency Permit No. 4-98-019-G to raise height of existing masonry stone seawall and two end walls. Remove seaward toe of seawall and construct concrete patch on seaward face of seawall. Replace former sewage disposal system with 'as built' sewage disposal system. The applicant has offered as part of the subject application, to dedicate a lateral public access easement along the shoreline.

Lot area:	4,080 sq. ft.
Residence	about 2,500 sq. ft.
Max. Height Above Mean Sea Level:	+13 feet
Underpinning Depth Below MSL:	- 4 feet

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission **approve with conditions** this after the fact application for an 'as built' unpermitted stone masonry seawall and temporary emergency concrete 'cap'. The applicant is requesting approval of the seawall with two return walls constructed without a coastal permit and a concrete 'cap' constructed as a result of an emergency permit. The 'cap' was constructed on a temporary basis as a result of Coastal Emergency Permit No. 4-98-019-G approved on February 10, 1998. A new concrete underpinning is proposed to support the base of the masonry seawall and the concrete 'cap'. The project also includes an 'as built' replacement of the sewage disposal system located at the top of the slope. The applicant has reviewed four alternatives for a shoreline protective device to adequately protect the existing older residence, its foundation, and the sewage disposal system located at the top of the road fill embankment. The applicant proposes to implement Alternative Four which

consists of the existing seawall and cap as modified to remove the seaward toe as required to be completed by Special Condition Number One, and as shown on Exhibits 17 and 18. As agreed to by the applicant and required by Special Condition Number Two, this modified seawall is recommended for approval only on a provisional basis to protect the existing residential structure in its present condition. A new Coastal Permit will be required for this modified seawall in the event changes in the protected structures, as noted Special Condition Number Two, are proposed in the future. Staff believes this modified project, as conditioned, will be consistent with the applicable resource protection provisions of the Coastal Act.

STAFF NOTE

This application was filed on June 30, 2000. This application is the same as the application previously filed on December 31, 1998 as Application Number 4-98-019; it was withdrawn by the applicant on August 26, 1999. The prior application was withdrawn to allow time for the applicant to identify and discuss project alternatives with Commission staff, and to analyze and prepare a report addressing the alternatives.

LOCAL APPROVALS RECEIVED: City of Malibu Planning Department "Approval in Concept" dated 2-5-98; City of Malibu Environmental Health "Approval in Concept" dated 11-16-95.

SUBSTANTIVE FILE DOCUMENTS: Appendix A

STAFF RECOMMENDATION:

MOTION: I move that the Commission approve Coastal Development Permit No. 4-00-111 pursuant to the staff recommendation.

Staff recommends a YES vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution:

I. Resolution for Approval with Conditions

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

II. Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent or interpretation of any 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. Revise Project to Remove Seaward Toe of Existing Seawall

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for the review and approval of the Executive Director, a signed agreement to implement this condition no later than April 30, 2002. The applicant or successors in interest shall also submit documentation for the review and approval of the Executive Director including photographs and "as built" plans signed by a licensed engineer within 30 days of completion of the revised project or by April 30, 2002, whichever is sooner, indicating that the entire seaward toe below the 4.0 foot Mean Sea Level contour of the seawall is removed. The applicant's revised project plans identify the existing "as built" seawall and temporary concrete cap as remaining in place. The plans indicate that the seaward toe will be removed beyond the 4.0 foot Mean Sea Level contour and a concrete patch will be constructed on the seaward face of the remaining seawall. The remainder of the existing seawall will be underpinned. This revised project is identified as Alternative Four in the applicant's Report titled, Coastal Application Number 4-00-111, dated June 7, 2000 by David Weiss, Structural Engineer & Associates. The applicant shall construct this project in compliance with the plan titled; Reduction of Existing Rock Masonry Wall, dated 2/7/00, by David Weiss Structural Engineer & Associates (Exhibits 17 and 18).

2. Provisional Term for Shoreline Protective Structure: Deed Restriction

A. Coastal Development Permit No. 4-00-111, authorizes the construction of the shoreline protective device generally depicted in Exhibits 3 – 11, & 17 attached hereto. By acceptance of this permit, the applicants acknowledge that the purpose of the subject shoreline protective device is solely to protect the existing structures located on site, in their present condition, including the residence, as generally depicted in Exhibits 2 and 12. If any of the activities listed below are undertaken, the shoreline protective device authorized by this permit shall be removed unless the Commission issues a new coastal 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. The applicants or successor-in-interest shall contact the Executive Director if such activities are contemplated so that a determination as to the necessity of applying for a new permit seeking continued authorization of the shoreline protective device can be made.

1. Changes to the foundation of any structure on the subject site located landward of the subject shoreline protective structure authorized herein, such as repairs or replacement of support piles or caissons;
2. Upgrade, relocation or abandonment of the septic disposal system;
3. Remodel of the primary structure or residence on the subject site involving the demolition of more than 50 percent of exterior walls or an addition to the primary structure or residence resulting in an increase of more than 10 percent of structural size;
4. Construction of a new structure on the subject parcel;
5. Relocation and/or complete removal of any or all of the structures shown in Exhibits 2 and 12 (showing existing development).

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

B. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall execute and record a deed restriction in a form and content acceptable to the Executive Director, reflecting the above restrictions on development of the subject parcel. The deed restriction shall include both a legal description of the applicants' entire parcel, and an Exhibit drawn to scale depicting the existing development as of September 12, 2000 proposed for

protection by the subject shoreline protective device, and the shoreline protective device itself. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without an amendment to this coastal development permit approved by the Coastal Commission.

3. Assumption of Risk, Waiver of Liability and Indemnity, and Shoreline Protection

- A. By acceptance of this permit, the applicant acknowledges and agrees to the following:
1. The applicant acknowledges and agrees that the site may be subject to hazards from severe ground shaking, liquefaction, tsunami, storm waves, erosion, flooding, and wildfire.
 2. The applicant acknowledges and agrees to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development.
 3. The applicant unconditionally waives any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards.
 4. The applicant agrees to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.
 5. No future repair or maintenance, enhancement, reinforcement, or any other activity affecting the shoreline protective device approved pursuant to Coastal Development Permit 4-00-111, as shown on Exhibits 3-11, 17 and 18, shall be undertaken if such activity extends the seaward footprint of the subject shoreline protective device. By acceptance of this permit, the applicant hereby waives, on behalf of itself and all successors and assigns, any rights to such activity that may exist under Public Resources Code section 30235.
- B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel and an exhibit showing the location of the shoreline protective device approved by this permit. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall

not be removed or changed without a Commission amendment to this coastal development permit.

4. Sign Restriction

No signs shall be posted on the property subject to this permit which (a) explicitly or implicitly indicate that the portion of the beach on the subject site (Assessor's Parcel Number 4450-001-037), located seaward of the residence and decks identified in application number 4-00-111 is private or (b) contain similar messages that attempt to prohibit public use of this portion of the beach. In no instance shall signs be posted which read "*Private Beach*" or "*Private Property*." In order to effectuate the above prohibitions, the permittee/landowner(s) is required to submit the content of any proposed signs to the Executive Director for review and approval prior to posting.

5. Offer to Dedicate Lateral Public Access

In order to implement the applicant's proposal of an offer to dedicate an easement for lateral public access and passive recreational use along the shoreline as part of this project, the applicant agrees to complete the following prior to issuance of the permit: the landowner shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a public agency or private association approved by the Executive Director an easement for lateral public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property. Such easement shall be located along the entire width of the property from the ambulatory mean high tide line landward to the face of the seawall as modified by Special Condition Number One and generally identified in Exhibit 9.

The document shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable for a period of 21 years, such period running from the date of recording. The recording document shall include legal descriptions of both the applicant's entire parcel and the easement area. This deed restriction shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

6. Public Rights

The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that may exist on the property. The permittee shall not use this permit as evidence of a waiver of any public rights that may exist on the property.

7. Construction Responsibilities and Debris Removal

The applicant shall, by accepting this permit, agree and ensure that the project contractor: a) not stockpile dirt on the beach; b) properly cover and sand-bag all stockpiling beyond the beach to prevent runoff and siltation; c) not store any construction materials or waste where it may be subject to wave erosion and dispersion; d) promptly remove any and all debris from the beach that results from construction or demolition materials to an appropriate disposal site; e) implement measures to control erosion at the end of each day's work; and f) not allow any mechanized equipment in the intertidal zone at any time.

8. Condition Compliance

Within one hundred eighty (180) days of Commission action on this CDP application, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions hereto that the applicant is required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background:

The applicant seeks 'after-the-fact' approval to construct a 55 lineal foot long unpermitted masonry seawall with new concrete underpinning located seaward of an existing deck. This 'as built' seawall includes two end walls about 11 and 14 feet long. To increase the height of the masonry stone seawall, the applicant requests approval on a permanent basis of an emergency permitted concrete and steel "cap" located on top of the seawall and the two end walls. The 'cap' was constructed on a temporary basis as a result of Coastal Emergency Permit No. 4-98-019-G on February 10, 1998. The applicant also proposes to remove the seaward toe of seawall and construct a concrete patch on seaward face of seawall. (Exhibits 1 – 11, 17 and 18) Lastly, the applicant requests after-the-fact approval to replace a former sewage disposal system with an 'as built' sewage disposal system, located at the top of the slope in the front yard (Exhibit 12). The applicant has offered as part of the subject application, to dedicate a lateral public access easement along the shoreline between the toe of the rock seawall and the Mean High Tide Line (Exhibit 9).

The 4,080 square foot site is developed with an older two story single family residence approximately 2,500 sq. ft. in size (the lot was created in 1938, the date the residence was constructed is unknown). The rectangular lot descends southward with approximately 14 feet of topographic relief towards the ocean. The majority of nearby lots along the beach are developed with single family residences, except for one vacant

lot located two lots to the east of the subject lot. There are numerous lots to the north on the hilltop above Pacific Coast Highway developed with residences in the Big Rock neighborhood.

The project is located along the west end of Las Tunas Beach just west of the signalized intersection with Big Rock Drive. Las Tunas Beach is a sand and rock cobble beach with numerous rock outcroppings. Big Rock Beach is located to the west of Las Tunas Beach. Vertical public access to Las Tunas Beach is located immediately to the west of the subject site along Gorda Canyon through a Caltrans drainage pipe. Although the public uses this drainage to access the beach, it is only feasible to use when water levels are reduced or the drainage is dry and for those members of the public willing or able to use a four to six foot high pipe beneath Pacific Coast Highway. Staff has used this drainage pipe to gain access to the project site during a mean high tide on July 30, 1999 and August 22, 2000. Additional vertical public access is located about a quarter (1/4) mile to the west on Big Rock Beach at a public stairway maintained by Los Angeles County in the 19900 block of Pacific Coast Highway. Vertical public access is also located about a half (1/2) mile to the east at Las Tunas State Beach.

A review of the Commission permit application records for this site indicates that the Commission approved a coastal permit (No. 5-81-110, Allan Synder) for an addition to the existing single family residence. No coastal permit or application records were found for the existing masonry rock seawall or the replacement sewage disposal system nor were any provided by the applicant.

The applicant applied for and received on February 10, 1998 an emergency coastal development permit (4-98-019-G, Kilb), to construct on a temporary basis, the proposed concrete and reinforced steel 'cap' (Exhibits 3 - 11). This emergency permit was requested to protect the property from an unexpected occurrence in the form of wave uprush exceeding the height of the existing seawall. This emergency permit was approved with six conditions including Condition # 4 which states:

Within 60 days of the date of this permit, the permittee shall apply for a regular coastal development permit to have the emergency work considered permanent. If no such application is received, the emergency work shall be removed in its entirety within 150 days of the date of this permit unless waived by the Director.

The emergency permit also stated as follows:

IMPORTANT

Condition #4 indicates that the emergency work is considered to be temporary work done in an emergency situation. If the property owner wishes to have the emergency work become a permanent development, a coastal permit must be obtained. A regular permit would be subject to all of the provisions of the California Coastal Act and may be conditioned accordingly.

Since the applicant had not submitted an application for a regular coastal development permit to have the emergency work considered permanent by within 60 days or April 10, 1998, staff sent a letter on November 6, 1998 to the applicant, Mr. Kilb, requesting that an application be submitted if the emergency work is to become permanent. On December 1, 1998, the applicant's agent, Susan McCabe, submitted an application to make permanent the repair work to the seawall completed under Emergency Coastal Permit No. 4-98-019-G. Although this prior application was filed on December 31, 1998, the applicant withdrew the application on August 26, 1999 to allow additional time to identify alternatives to the proposed project. On June 30, 2000 a new application for the same project was filed with the Commission. This application included an analysis of four project alternatives discussed below.

Regarding adjoining properties, Staff is not aware of any coastal permits for the existing seawall located to the east (19902 Pacific Coast Highway). To the west, is a large Caltrans drain outlet draining the Big Rock drainage channel beneath Pacific Coast Highway to the beach. A similar grouted rock masonry seawall if present on the adjoining property to the west (19912 PCH). Coastal Development Permit No. 4-98-056, O'Toole, approved in September 1998 by the Commission authorized a new concrete underpinning to this wall. This seawall was necessary to protect an existing sewage disposal system proposed to be upgraded and located on the beach landward of the seawall. It is important to point out that this adjoining seawall is not connected to the subject seawall. The two seawalls are separated by the Caltrans concrete drain and spillway which is about 17 feet across along the drain apron spillway.

The project site is designated in the certified Los Angeles County Malibu/Santa Monica Mountains Land Use Plan as Residential IV B which allows 8-10 dwelling units per acre. The project site is non-conforming and just above the allowable density range at approximately 10.7 dwelling units per acre. There are no environmentally sensitive habitat areas (ESHA) on the subject site, although the shoreline rocky area offshore beyond the applicant's property are designed ESHA in the LUP.

B. Shoreline Protective Devices

The applicant proposes to construct a 55 lineal foot long 'as built' masonry seawall with a new four-foot deep concrete underpinning. The seawall includes two end walls about fourteen (14) and eleven (11) feet long. A concrete and steel "cap" to raise height of existing masonry stone seawall and two end walls was constructed as a result of Emergency Coastal Permit No. 4-98-019. During the winter storms of 1998, the applicant determined that the seawall had insufficient height to resist waves to prevent further damage. In addition, the applicant proposes to replace an unpermitted 'as built' sewage disposal system located in the front yard on the bluff top (Exhibits 1 - 12).

The seaward portion of the 'as built' seawall is located approximately 70 feet seaward of the applicant's northern property line co-terminus with Pacific Coast Highway. The seaward most portion of the base of the seawall, includes a 'stone ledge' or toe along

the base of the western portion of the seawall. There are two end walls along the east and west property boundaries about (14) and eleven (11) feet long, respectively. According to the Commission's historic aerial photographs dated 8/17/73, the subject seawall did not exist on the applicant's property. The top of the stone ledge is located at approximately the four (4) foot elevation above mean sea level (MSL). The seaward portion of the seawall is located on and a portion of it is landward of the 11/11/97 Mean High Tide Line (Surveyed by W. R. Benson & Associates, Licensed Land Surveyors) which is located at approximately the four (4) foot elevation above Mean Sea Level (MSL) (Exhibits 2, 8, & 9). The proposed underpinning is located beneath the seawall extending from zero (0) MSL down four (4) feet to minus four (-4) feet MSL. Relative to the lower level of the existing two story residence, the landward portion of the 'as built' seawall with the temporary 'cap' is located approximately between six (6) and eleven (11) feet seaward. Within this area between the lower level residence and the landward side of the seawall is a narrow concrete patio about six feet wide. The seaward portion of the seawall on the west, including the 'stone ledge', is located approximately sixteen (16) feet seaward of the lower level of the residence. The seaward portion of the seawall on the east includes a smaller 'stone ledge'; it is located approximately twenty (20) feet seaward of the lower level of the residence. The lower level of the residence is located further landward along the eastern portion of the structure. Relative to the second floor deck, the landward portion of the seawall is located about two feet landward of the seaward edge of the deck at the west end of the property and up to one foot beyond the deck along the eastern portion of the property. The seaward edge of the seawall is located between about eight to ten feet beyond the seaward edge of the second floor deck (Exhibits 2 and 17). In effect, the seawall extends from the seaward edge of the deck about 10 feet further seaward. As a result, the narrow distance between the seawall and the existing residence and its second floor deck provides a limited separation to minimize ocean waves from splashing onto the residence and deck. The location of this seawall on the beach is discussed further below.

According to the applicant's engineer, the purpose of the seawall is to protect the residence, support posts, timber support pilings, and the slope that includes the sewage disposal system. According to the engineer, as is common for residential development of this age, these support posts and pilings do not appear to be founded in bedrock.

The Commission relies as the standard of review for the proposed project upon the policies of the Coastal Act. The analysis of this staff report will proceed in the following manner. First, the staff report describes the physical characteristics of the Las Tunas Beach shoreline; second the report analyzes the dynamics of the Las Tunas Beach shoreline; and third, the report analyzes the location of the proposed shoreline protective device in relation to wave action. Finally, the report evaluates whether the proposed shoreline protective device is warranted and if alternative locations or designs for the device are feasible, weighing the available evidence in light of the Coastal Act requirements, and whether the proposed seawall will adversely impact the shoreline sand supply and shoreline processes.

Coastal Act Sections 30235 and 30250 state:

Section 30235.

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) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

1. Proposed Project and Site Shoreline Characteristics

The City of Malibu includes a narrow strip of coast that is some 27 miles long, along a backdrop of the Santa Monica Mountains. The applicant's proposed project is located on Las Tunas Beach, a narrow sandy and rocky beach backed by low bluffs along Pacific Coast Highway. This portion of Las Tunas Beach is heavily developed, and the parcels near the applicant's site are small and characteristically developed with older or remodeled single family residences. The applicant's lot was created in 1938 while the residence was constructed at an unknown date and appears quite old. An addition was approved on the subject site by the Commission in 1981; according to the Commission's historic aerial photographs the addition appears to be completed by 1986. The applicant's lot includes a fill slope or bluff of about twenty-five (25) feet high above Mean Sea Level seaward of Pacific Coast Highway.

a. Las Tunas Beach is an Eroding Beach

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

in dealing with shoreline processes in California is distinguishing long-term trends in shoreline change from the normal, seasonal variation.

Las Tunas Beach is located within the Dume Littoral Cell, which extends geographically from Point Dume to Redondo Beach, with Malibu Creek and Topanga Canyon Creek as major contributors of sand. The beach in the immediate vicinity of the project site is extremely narrow with an intermittent thin veneer of sand on bedrock. The beach is eroded to bedrock and cobble during and after the winter storm season and was recently observed on August 22, 2000 to also be eroded to bedrock and cobble during the usual summer beach accretion period. Therefore, the existing "unpermitted" seawall is subject to frequent wave attack during both summer and winter high tides and storm waves.

Las Tunas Beach has been identified as an eroding beach. The U.S. Army Corps of Engineers, Los Angeles District, identifies Las Tunas Beach as a narrow to non-existent sandy-rocky beach backed by Pacific Coast Highway with an estimated annual average retreat of about one (1) foot per year from 1971 to 1989 (Reconnaissance Study of the Malibu Coast, 1994). An earlier study, titled Shoreline Constraints Study, by Moffatt and Nichols (June 30, 1992) determined that Las Tunas Beach is retreating at a rate of one-fourth (1/4) to one half (1/2) of a foot per year from 1938 to 1988, and provides confirmation of the Army Corp of Engineers analysis that shows evidence of a long term erosional trend for this beach. In addition, the Moffatt and Nichols study indicates that the mean beach width from 1960 to 1988 is slightly above zero (0) at the subject site which also confirms the narrow to non-existent nature of the beach identified in the Army Corps of Engineers Study.

The applicant submitted a Coastal Engineering Report for the Kilb Residence dated January 28, 1998, prepared by the David Weiss, Structural Engineer and Associates for the proposal to increase the height of the existing seawall. This report concludes that "there are no Coastal Commission or environmental issues to be dealt with in regard to this project, since the wall is existing and all that is being done is to raise the height of the wall." The Report further states that raising the height of the wall stem will have no effect on the "erosion" rate of the beach, or the adjoining properties, or scour at the base, or public access to and along adjacent public tidelines. Unfortunately, this report did not address the effects of the unpermitted 'as built' seawall, the proposed underpinning, the location of the most recent (11/11/97) surveyed Mean High Tide Line at the subject seawall, nor the actual location of the septic system at the top of the bluff in the front yard rather than immediately behind the seawall as initially believed by the applicant's engineer. These issues are discussed further below.

In a subsequent report titled Addendum Coastal Engineering Report, by David Weiss, dated June 4, 1999, the issue of erosion is further addressed. This Addendum Report states that the wall will have no effect on the erosion rate of the beach, however again, no site specific information is provided to justify this conclusion. This Report states that erosion is a result of something up stream from a site blocking or stopping the flow of sand from reaching that site, such as a groin or breakwater located far enough into the

water to cause a shadow of influence across adjacent sites. This Addendum Report states that the construction of walls and houses along this section of beach did not cause the beach to erode. It is noted that Pacific Coast Highway was constructed with a balanced cut/fill method that caused the natural beach to become considerably narrower as the roadway occupied almost 80 feet of the original beach width. This statement appears to lead to the conclusion that the subject seawall may be located on or is very close to public tidelands. This issue is discussed further below.

In a second subsequent report titled, "Letter Requesting Additional Information", by David Weiss, dated August 1, 1999 the issue of erosion is further addressed. In response to the Staff's request for a discussion of an alternative location for the subject seawall in a more landward location, Mr. Weiss provides the following conclusion.

"I stand by my opinion that the wall cannot be moved because I consider it economically unfeasible. Moving this wall could cost the property owner as much as \$400,000 and would have no positive effect. Whether this wall is moved back a few feet or all the way to the toe of the slope will have no positive effect on the beach environment, especially with the two remaining walls on either side. Whether the wall stays where it is or is moved back would neither have an effect on erosion rate of the beach nor will it provide additional lateral public access. It will only cause an impossible economic hardship on the applicant."

This second subsequent Report states that even an alternative wall located landward will have no effect on the erosion rate of the beach, however again, no site specific information is provided to justify this conclusion.

Staff reviewed the proposed project against the above cited shoreline data. The data presented indicates that this section of Las Tunas Beach is an eroding beach. The applicant's consultant provided no analysis to the contrary. Therefore, based on the preponderance of evidence of these studies, considered in conjunction with site-specific evidence of beach erosion, the Commission concludes that the site proposed for placement of the 'unpermitted' seawall is located on a beach that is narrow and eroding.

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

The Commission notes that loss of beach is widely understood to occur when shoreline protective devices are placed on equilibrium or eroding beaches. In order to determine the impacts of the proposed 'unpermitted' seawall on the shoreline, the location of the protective device in relation to the Mean High Tide Line (MHTL) and expected wave runup must be analyzed. The profile data cited below, shows that the position of the seawall does intrude on the areas of wave runup and beach transport. Further, the data also indicates that the seawall is located near or directly on top of a recently surveyed location of the MHTL.

1. Mean High Tide Line

The applicant has submitted data that indicates that the 'as built' seawall is located near and on top of a documented position of the MHTL (see Exhibits 8 & 9). In addition, the applicant has submitted two letters from the State Lands Commission (SLC). The first letter from the SLC dated March 29, 1999 (Exhibit 13) indicates that the SLC asserts no claims that the project intrudes onto sovereign lands or that it would lie in an area that is subject to the public easement in navigable waters. This first letter from the SLC addressed the 'as built' seawall and concrete 'cap'. Staff requested in a letter dated July 2, 1999 to the applicant's agent that the applicant's revised project as identified in plans dated 5/3/99 were prepared subsequent to the SLC review of the project. The revised project, as submitted by the applicant on June 25, 1999, now consisted of the proposed concrete underpinning of the seawall and a seaward protrusion on the western portion of the 'as built' seawall that included a 'stone ledge'. Therefore, an updated SLC review was needed for this revised project. The applicant submitted a second SLC letter dated July 21, 1999 addressing the proposed underpinning of the seawall (Exhibit 14). The SLC letter concludes:

"Your client is proposing to install concrete underpinning to reinforce an existing seawall adjacent to his residence at 19906 Pacific Coast Highway in Malibu. The proposed underpinning will extend down four feet from the toe of the seawall and will extend no further seaward than the existing seawall. This proposed underpinning is an addition to the project reviewed by CSLC staff earlier this year that involved after-the-fact repairs to and legalization of the existing seawall. By letter dated March 29, 1999, you were advised that the CSLC would not be asserting jurisdiction over the existing seawall. Based on the above, the position of CSLC staff as stated in our March 29, 1999 letter remains unchanged."

Because it appeared that the SLC review did not include the 'stone ledge' identified on two plans submitted by the applicant, Staff sent a letter dated July 2, 1999 with the applicant's revised plans to the SLC staff. The July 2, 1999 letter indicated that the revised project included a seaward extension, a stone ledge, located landward and seaward of a known MHTL surveyed on 11/11/97 together with a cement underpinning located very close to this MHTL. The plans sent to the SLC were titled, "Partial Topographic Survey" by Benson & Associates dated June 23, 1999 that identified the 'stone ledge' as part of the existing 'as built' seawall (Exhibit 2). In addition, the revised plans titled, "Underpinning of Existing Rock Masonry Bulkhead Wall" dated June 23, 1999 by David Weiss & Associates also identifies the 'stone ledge' but also includes the surveyed MHTL dated 11/11/97 (Exhibits 8 & 9). This MHTL is located along the top of the 'stone ledge', a small western portion and the central portion of the 'stone ledge' is located seaward of this MHTL, while the remainder of the ledge and all of the 'as built' seawall is located landward of the MHTL. The SLC staff responded on August 4, 1999 indicating that this was only one surveyed MHTL which does not by itself provide enough evidence to identify the MHTL, and that the SLC position had not changed. Therefore, the SLC staff were not going to assert jurisdiction over any portion of the seawall.

It is important to note that the plan titled, "Underpinning of Existing Rock Masonry Bulkhead Wall" dated June 23, 1999 by David Weiss & Associates also identifies two other MHTL's surveyed June 1969 and March 1967. These MHTLs are located 75.5 and 98 feet seaward, respectively, of the applicant's northern property line. Relative to the seawall, these MHTL's are located about five feet and 28 feet seaward of the seaward face of the seawall. The more recent MHTL dated 11/11/97 is located 70 feet from the applicant's northern property line indicating that the subject beach appears to be eroding and narrowing over the past 20 years.

2. Wave Uprush

With respect to inundation of the beach fronting the sections of 'as built' seawall and 'stone ledge' during high tide, mean high tide and low beach profile conditions in the winter, the data provided by David Weiss & Associates, cited below, indicates that such inundation will occur. What remains unclear is the frequency at which the inundation will occur.

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

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 seawall on the beach is its position on the beach profile relative to the surf zone. All other things being equal, the further seaward the wall is, the more often and more vigorously waves interact with it. The best place for a seawall, if one is necessary, is at the back of the beach where it provides protection against the largest of storms. By contrast, a seawall situated too close to the MHTL is likely to cause constant interference with normal shoreline processes, resulting in frontal and end scour of the beach adjacent to and seaward of the wall, in addition to upcoast sand impoundment.

The Wave Uprush Study prepared by David Weiss and Associates, dated August 4, 1999 includes a drawing titled; 'Wave Uprush and Design Beach Profile' dated June 23, 1999. This drawing indicates that the maximum wave uprush at the subject site extends beyond Pacific Coast Highway nearly ten (10) feet landward of the applicant's

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

northern property line which is also co-terminus with the Pacific Coast Highway right of way line. This location is landward of the existing single family residence. As noted above, the subject seawall including the 'stone ledge' is located on or near a surveyed MHTL. Therefore, this data indicates that inundation of the beach fronting the proposed seawall will occur during high tide, mean high tide, and low beach profile conditions in the winter.

Based on the above discussion, the Commission finds that the proposed seawall, at its proposed location, has the potential to encroach into an area of the beach that is currently subject to wave action during mean high tide and high tide, and storm events. As previously discussed, the Commission finds that Las Tunas Beach is a narrow, eroding beach and that the proposed seawall will, at times, be subject to wave action during these tide and storm events. Thus, the following section evaluates the impacts of the proposed seawall on the beach based on the above information that identified the specific structural design, the location of the structure, and the shoreline geomorphology.

c. Effects of the Shoreline Protective Device on the Beach

The proposed 'as built' 55 foot long shoreline protective device or seawall will be constructed on the rocky beach approximately as far seaward of the seaward extent of the existing residential structure (not including the lower deck) as about 20 feet and up to about 34 feet beyond the base of the bluff. This proposed location is about 70 feet seaward of the landward property line along Pacific Coast Highway. An engineered seawall is typically built along straight beaches or low coastal bluffs where fill can be placed landward of the seawall to support roadways and other developments that are constructed on fill land. In this case the seawall is built along the beach to protect the residence and supporting foundation and the slope for the road fill where the sewage disposal system is located on the top of the road fill in the front yard. Therefore, the seawall functions both as protection from wave attack and wave runup.

The proposed project involves a shoreline structure that, as a result of wave interaction, has the potential to affect the configuration of the shoreline and the beach profile and may have an adverse impact on the shoreline. Although the precise impact of a structure on the beach is a persistent subject of debate within the discipline of coastal engineering, and particularly between coastal engineers and marine geologists, it is generally agreed that a shoreline protective device will affect the configuration of the shoreline and beach profile. Adverse impacts upon the shoreline may accrue as the result of beach scour, end scour (undermining of the beach areas at the ends of the seawall), the retention of potential beach material behind the wall, the fixing of the back beach and the interruption of longshore processes. In order to evaluate these potential impacts relative to the proposed structure and its location at Las Tunas Beach, each of the identified effects will be evaluated below.

1. Encroachment on the Beach

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

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

$$A_e = W \times E$$

The applicant proposes to construct an 'as built' shoreline protective device that encroaches further seaward than the existing residence. The seawall will be constructed on the rocky beach approximately 16 feet seaward of the existing residential structure (not including the lower deck). The seawall will be 55 lineal foot long with a new four-foot deep concrete underpinning. The seawall also includes two end walls about fourteen (14) and eleven (11) feet long. The encroachment area is about 431 square feet of beach, including the seawall, 'stone ledge' and two end walls. The beach in this location is a rocky beach with an intermittent thin veneer of sand.

2. Beach Scour

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

Seawalls usually cause accelerated erosion of the beaches fronting them and an increase in the transportation rate of sand along them.²

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

The following quotation summarizes a generally accepted opinion within the discipline of coastal engineering that:

These structures are fixed in space and represent considerable effort and expense to construct and maintain. They are designed for as long a life as possible and hence are not easily moved or replaced. They become permanent fixtures in our coastal scenery but their performance is poor in protecting community and municipalities from beach retreat and destruction. Even more damaging is the fact that these shoreline defense structures frequently enhance erosion by reducing beach width, steepening offshore gradients, and increasing wave heights. As a result, they seriously degrade the environment and eventually help to destroy the areas they were designed to protect.³

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

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

While seawalls may protect the upland, they do not hold or protect the beach which is the greatest asset of shorefront property. In some cases, the seawall may be detrimental to the beach in that the downward forces of water, created by the waves striking the wall rapidly remove sand from the beach.⁴

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

Armoring can cause localized additional storm scour, both in front of and at the ends of the armoring ... Under normal wave and tide conditions, armoring can contribute to the downdrift deficit of sediment through decreasing the supply on an eroding coast and interruption of supply if the armoring projects into the active littoral zone.⁵

It is generally agreed that where a beach is eroding, the erection of a seawall will eventually define the boundary between the sea and the upland. This result can be

³ Saving the American Beach: A Position Paper by Concerned Coastal Geologists (March 1981, Skidaway Institute of Oceanography), pg. 4.

⁴ State Department of Boating and Waterways (formerly called Navigation and Ocean Development), Shore Protection in California (1976), page 30.

⁵ Coastal Sediments '87.

explained as follows. On an eroding shoreline fronted by a beach, a beach will be present as long as some sand is supplied to the shoreline. As erosion proceeds, the entire profile of the beach also retreats. This process stops, however, when the retreating shoreline comes to a seawall. While the shoreline on either end of the seawall continues to retreat, shoreline retreat in front of the seawall stops. Eventually, the shoreline fronting the seawall protrudes into the water, with the winter Mean High Tide Line (MHTL) fixed at the base of the seawall. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the seawall. In this specific case, erosion of the beach has occurred over time as identified by the MHTL's noted above, to a point where the last surveyed MHTL (11/11/97) is located beneath and immediately seaward of the subject seawall (Exhibits 8 & 9).

As set forth in the discussion above, Las Tunas Beach is eroding and, therefore, the seaward encroachment effects of the proposed 'un-permitted' seawall could have potentially adverse impacts as the beach erodes further landward and as the protective device becomes a dominant component of the shoreline system. The above cited studies confirm that beach scour is a likely result of the placement of shoreline protective devices in an area subject to wave runup. In this case, the evidence has demonstrated that Las Tunas Beach is a narrow and eroding beach.

The Wave Uprush Study prepared by the applicant's coastal engineer notes that the maximum wave uprush applicable to the subject site, absent a seawall or other shoreline protective device, goes beyond Pacific Coast Highway. This estimate of wave runup does not take into account worst case storm events. If an eroded beach condition occurs with greater frequency due to the placement of the seawall, this site would also accrete at a slower rate. During periods of beach erosion, this site would erode more. The Commission notes that the proposed seawall will be located about 78 feet seaward of the maximum wave uprush and will therefore be routinely acted upon by wave action.

Staff conducted a site visit on July 30, 1999 at 12:35 p. m., the time the tide was at the 4.1 - 4.2 MSL at a tide elevation approximately equal to the Mean High Tide. Staff observed that small waves were breaking near the base of the seawall's 'stone ledge' and wave runup extended landward of the base of seawall onto the face of the seawall. Therefore, based on the report prepared by the Army Corps of Engineers and the confirming information in the Nobel Consultants report, both noted above, the Commission finds that over time, the proposed seawall would be acted upon more frequently throughout the year. In addition 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. Therefore, this information suggests that the proposed seawall will be routinely subject to wave action year round including the winter season, as the beach erodes over time.

The impacts of potential beach scour is important relative to beach use for two reasons. The first reason involves public access. As explained in the subsequent section relating to public access, Las Tunas Beach has historically been used by the public.

Vertical public access to Las Tunas Beach is located immediately to the west of the subject site along Gorda Canyon through a Caltrans drainage pipe. Although the public uses this drainage to access the beach, it is only feasible to use when water levels are reduced or the drainage is dry and for those members of the public willing or able to walk through a four to six foot diameter pipe located beneath Pacific Coast Highway. Staff has used this drainage pipe to gain access to the project site during a mean high tide event on July 30, 1999 and again on August 22, 2000. Additional vertical public access is located about a quarter (1/4) mile to the west at a public stairway to Big Rock Beach maintained by Los Angeles County since about the 1960's in the 19900 block of Pacific Coast Highway. Vertical public access is also located about a half (1/2) mile to the east at Las Tunas State Beach.

If the beach scours at the base of the seawall, even minimal scouring in front of the 55 foot long wall will translate into loss of beach sand available (i.e. erosion) at a more accelerated rate than would otherwise occur under a normal winter season if the beach were unaltered. The second impact relates to the potential turbulent ocean condition. Scour at the face of the seawall will result in greater interaction with the wall, and thus, make the ocean along Las Tunas Beach more turbulent than it would along an unarmored beach area. Therefore, the Commission finds that the proposed seawall will cause greater erosion than under natural conditions and less rapid sandy beach recovery through accretion.

The applicant's coastal engineering consultant has indicated that the seawall will be acted upon by waves during storm conditions. 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—at a minimum—accrete at a slower rate. The Commission notes that many studies performed on both eroding and oscillating beaches have concluded that loss of beach occurs on both types of beaches where a shoreline protective device exists. Therefore, the Commission notes that the proposed seawall, over time, will result in potential adverse impacts to the beach sand supply resulting in increased seasonal erosion of the beach and longer recovery periods.

3. End Effects

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

In addition, the Commission notes that the literature on coastal engineering repeatedly warns that unprotected properties adjacent to any shoreline protective device may experience increased erosion. Field observations have validated this concern. Although it is difficult to quantify the exact loss of material due to end effects, Gerald G. Kuhn of the Scripps Institute of Oceanography concludes in a paper entitled, "Coastal Erosion along Oceanside Littoral Cell, San Diego County, California," (1981) that erosion on properties adjacent to a rock seawall is intensified when wave runup is high.

The applicant's consultant, David Weiss and Associates, submitted information regarding the potential end effects of the seawall. The Addendum Report dated June 4, 1999 states:

The subject wall will have adverse effect on adjacent sites. As a matter of fact, the subject wall is just one wall in a line of fifteen sites in a row, protected by various types of bulkhead walls.

It is important to note that the "as built" seawall also includes two end walls on each side of the seawall, in addition to the rock seawalls on the adjoining properties. The subject seawall is joined to a Caltrans drain pipe on the west and an existing similar grouted rock seawall on the east. The Commission further notes that end effect erosion may be minimized by locating a proposed shoreline protection device as far landward as possible to reduce the frequency that the seawall is subject to wave action. In the case of the proposed project, and as noted previously, the alternative locations for the subject seawall will be discussed below.

4. Retention of Potential Beach Material

A shoreline protective device's retention of potential beach material impacts shoreline processes simply by depriving beaches of nutrients that would normally be fed into the littoral cell and deposited on beaches through the actions of normal shoreline processes. A seawall functions to keep upland sediments from being carried to the beach by wave action and bluff retreat. In the case of Las Tunas Beach, which is located in the Santa Monica Littoral Cell, the back of the beach is fixed at Pacific Coast Highway. One of the main sources of sediment for beaches are the bluffs themselves, as well as the material that has eroded from inland sources and is carried to the beach by coastal streams. The protective device may be linked to increased loss of material in front of the wall. The net effect is documented in "Responding to Changes in Sea Level, Engineering Implications" which provides:

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

"satisfied" by erosion of the upland on a natural beach or as close as possible to the natural area of erosion on an armored shoreline...⁶

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

In past permit actions, the Commission has required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. In the case of this project, to mitigate any possible adverse effects upon public access along the beach, the applicant proposes to dedicate a new public lateral access easement along the beach. Based on the documented position of the November 11, 1997 MHTL at the base of the seawall, there may be very limited or no beach area between the existing base of the seawall and the MHTL. Therefore, at least at certain times of the year, the applicant's proposed lateral public access dedication between the MHTL and the toe of the existing seawall may offer very little or no actual beach area for public use (Exhibit 9).

d. Sea Level Rise

Sea level has been rising slightly for many years. In the Santa Monica Bay area, the historic rate of sea level rise has been 1.8 mm/yr. or about 7 inches per century⁷. Sea level rise is expected to increase by 8 to 12 inches in the 21st century.⁸ There is a growing body of evidence that there has been a slight increase in global temperature and that an accelerated rate of sea level rise can be expected to accompany this increase in temperature. Mean water level affects shoreline erosion in several ways and an increase in the average sea level will exacerbate all these conditions.

On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. On a relatively flat beach, with a slope of 40:1, every inch of sea level rise will result in a 40-inch landward movement of the ocean/beach interface. For fixed structures on the shoreline, such as a single family residence, pilings, or seawalls, an increase in sea level will increase the inundation of the structure. More of the structure will be inundated or underwater than are inundated now and the portions of the structure that are now underwater part of the time will be underwater more frequently.

⁶ "Responding to Changes in Sea Level: Engineering Implications," National Academy of Sciences, National Academy Press, Washington, D.C., 1987 (at page 74).

⁷ Lyles, S.D., L.E. Hickman and H.A. Debaugh (1988) Sea Level Variations for the United States 1855 - 1986. Rockville, MD: National Ocean Service.

⁸ Field et. al., Union of Concerned Scientists and the Ecological Society of America (November 1999) Confronting Climate Change in California, www.ucsusa.org.

Accompanying this rise in sea level will be increased wave heights and wave energy. Along much of the California coast, the bottom depth controls the nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in wave height can cause a significant increase in wave energy and wave damage. So, combined with the physical increase in water elevation, a small rise in sea level can expose previously protected back shore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces. Structures that are adequate for current storm conditions may not provide as much protection in the future.

A second concern with global warming and sea level rise is that the climatic changes could cause changes to the storm patterns and wave climate for the entire coast. As water elevations change, the transformation of waves from deep water will be altered and points of energy convergence and divergence could shift. The new locations of energy convergence would become the new erosion "hot spots" while the divergence points may experience accretion or stability. It is highly likely that portions of the coast will experience more frequent storms and the historic "100-year storm" may occur every 10 to 25 years. For most of California the 1982/83 El Niño event has been considered the "100-year storm". Certain areas may be exposed to storms comparable to the 1982/83 El Niño storms every few decades. In an attempt to ensure stability under such conditions, the Commission has required that all new shoreline structures be designed to withstand either a 100-year storm event, or a storm event comparable to the 1982/83 El Niño. Also, since it is possible that storm conditions may worsen in the future, the Commission has required that structures be inspected and maintained on a regular basis. The coast can be altered significantly during a major storm and coastal structures need to be inspected on a regular basis to make sure they continue to function as designed. If storm conditions worsen in future years, the structures may require changes or modifications to remain effective. In some rare situations, storm conditions may change so dramatically that existing protective structures may no longer be able to provide any significant protection, even with routine maintenance.

e. Alternative Seawall Locations and Designs

There are numerous alternatives to consider ranging from alternative designs to alternative locations for a shoreline protective device. It has been found that the further landward the seawall is located, the less beach scour will result. The alternative of re-siting of the 'as built' seawall by demolishing and removing it and constructing a new seawall in a more landward location may reduce the effects on the beach caused by wave runup through out the year during mean high and high tides and during winter storms. Lessening the wave energy when it reaches the relocated seawall will minimize the beach scour in front of the seawall and provide for an area for lateral public access along the beach.

In response to the application materials submitted by the applicant, Staff requested, in two letters dated January 15, 1999 and May 27, 1999, a complete discussion of

alternatives to the unpermitted shoreline protective development, the seawall. The applicant submitted four reports. The first is titled; "Addendum Coastal Engineering Report", dated June 4, 1999, by David Weiss & Associates. The second is titled; "Additional Discussion Protective Bulkhead, Alternative Two, dated March 5, 2000, by David Weiss and Associates. The third report is titled; Response to Letter, dated March 5, 2000, by David Weiss & Associates. The fourth report is titled; Coastal Application Number 4-00-111, dated June 7, 2000, by David Weiss & Associates. This fourth report identifies and discusses four alternatives as follows:

"Alternative Number One: No Protective Device At All

The purpose of the seawall is to protect the timber pile system beneath the house. The standard of practice at the time of construction of this house was to drive timber piles to refusal. This beach consists of a layer of sand atop a layer of cobblestone over bedrock. Experience has shown that timber piles on beaches with similar stratification only penetrated a few feet into the cobblestone layer and doesn't reach bedrock. Therefore, during periods of high tides and storm conditions, temporary beach erosion can undermine the piles and cause serious settlement damage, or even collapse of the structure. ...

Alternative Number Two: Construct a Bulkhead at the Seaward Face of the House

This alternative would locate the wall only seven feet landward of the existing seawall. It would also protect the timber piles, the embankment and the sewage disposal system. The construction process would require shoring the existing house, replacing the five timber posts that support the seaward edge of the house, removal of the existing wall and cap and construction of fifty-five feet of bulkhead and two twelve and one-half foot long return walls along the property lines. We estimate that the total cost of this alternative would be approximately \$365,000 which nears or exceeds the value of the existing house. We therefore, conclude that this alternative is economically infeasible.

Alternative Number Three: Construct a Seawall at the Toe of the Slope

This is the most landward position to locate a protective device that will protect the Pacific Coast Highway embankment and the sewage disposal system. This alternative would leave the under story of the house exposed to uplift forces that could damage or destroy the house. That in itself makes this alternative infeasible. Even if uplift were not considered, the timber pile system would remain exposed to temporary beach erosion. This would require the building to be shored, the exposed piles to be replaced with caissons and grade beams, return walls to be constructed and removal of the existing wall and cap. The cost of this alternative

exceeds the value of the house even more than Alternative Number Two discussed above.

Alternative Four: Leave the Wall in its Present Location and Remove the Toe as Proposed

The underlying seawall has been in place for a number of years and was constructed at the same time as the seawalls on either side of the subject property. During the winter of 1997-98, the Kilbs experienced severe overtopping of the existing wall and were granted an emergency permit by the Coastal Commission to construct the existing cap. During discussions with staff, the applicant agreed to explore the option of reducing the seaward encroachment of the existing wall by removing a portion of the toe. My report of Reference Number One concluded that everything seaward of 4.0' Mean Sea Level contour on the wall could be removed without destabilizing the rock masonry wall. This appears to be a maximum of four feet that can be removed. We believe that this alternative is the most feasible.

This is just one short wall in a line of approximately 1200' of bulkhead walls or other protective devices along this section of beach. As stated in past correspondence, this wall has no adverse effect on adjacent properties. There is no evidence that this or any of the other walls on this stretch of beach have had any adverse effects on the beach. There is neither evidence that the subject wall or any of the other walls along this beach have caused the beach to erode nor that this wall or any of the walls on this beach have blocked the littoral drift of sand along the beach and "starved" down stream beaches. The 1994 U. S. Army Corps of Engineers study of the Los Angeles County Beaches is pretty emphatic that the beaches immediately west of Sunset Blvd. have always been fairly narrow and have not changed appreciably since the construction of Pacific Coast Highway. As a matter of fact, if one were to compare the location of the three Mean High Tide Lines plotted on the Design Beach Profile generated for this site by this office, he would find that the location of the November 1997 Mean High Tide line located by W. R. Benson & Associates, surveyors for this project, is only 15' further landward than the June 1969 location surveyed by the Los Angeles County Engineer at the profile location used for this site. That is very close to the 1969 location surveyed by the Los Angeles County Engineer at the profile location used for this site. That is very close to the 1969 location, considering that by November 1997 this area had already sustained effects of El Nino storms.

It has been demonstrated that a device is needed to protect the existing house, Pacific Coast Highway embankment and the sewage disposal system. The only issue is location of the device. Moving the seawall is economically infeasible, as discussed above. The proposed project

(Alternative Number Four) is cost effective and will provide a substantial public benefit by increasing the beach by four feet."

In this Report dated June 7, 2000 noted above, the applicant's consulting engineer addressed four alternatives to the proposed project. The first alternative, the no project alternative, was determined by the consulting engineer to be infeasible as the existing residence, its supporting foundation, and sewage disposal system needs a shoreline protective device to protect them from damage or destruction.

The second alternative, to remove the existing seawall and construct a new seawall at the seaward face of the residence was determined to be financially infeasible by the applicant's engineer. The location of this alternative is seven feet further landward than the existing seawall. This alternative would require replacing five timber posts supporting the seaward edge of the residence and the posts supporting the deck with two piles drilled into bedrock. The applicant's engineer has determined that this alternative is infeasible because the cost to remove and construct a seawall and construct the new piles would be nearly equal to or exceed the value of the existing residential structure. The applicant's engineer estimated in the June 7, 2000 Report that the \$365,000 cost is about the same or more than the value of the residential structure proposed to be protected.

It is important to note that the existing seawall is 'unpermitted' and considered an 'as built' seawall, the applicant has no right to maintain its use without a coastal development permit. In addition, the concrete cap approved through Emergency Coastal Permit Number 4-98-019-G, is a temporary development, the applicant also has no right to maintain its use for the long term without a regular coastal permit. As a result, the estimated cost of about \$51,000 to demolish, remove, and dispose of the subject "unpermitted" rock masonry seawall and the "temporary" concrete cap can not be considered in an analysis of feasibility.

The applicant's agent provided additional information indicating that the value of the residential improvements including the existing seawall is about \$300,000 as determined by recent market value of the real estate on site in a letter dated August 23, 2000. Based on a more detailed review according to the applicant's coastal engineer, David Weiss in a letter dated August 23, 2000, estimated the cost to construct a new 55 foot long seawall with return walls in a location about seven feet further landward is actually about \$530,000 in today's construction costs. (The previous estimate was based on 1999 construction costs and did not include contractor profit, overhead, and contingency factor fees for wet beach construction.) This amount of the project cost for Alternative Two is the result of about \$366,000 for the new 55 foot long seawall and two 12.5 foot long return walls, about \$46,000 for replacing the existing residential foundation on the seaward side with two new piles and one grade beam to re-support the residence, about \$69,000 for demolition of a portion of the lower floor, shoring the remaining upper portion of the residence and reconstructing the residence including required repairs resulting from the demolition. In addition, about \$48,000 is needed for constructing temporary shoring walls to support adjacent properties to prevent their

washout during construction on the subject property. In effect, to construct Alternative Two (and Alternative Three), it is necessary to demolish a portion of the residence to construct the new foundation and a seawall to protect the residence. Removing portions of the residence, shoring it up, and constructing a new foundation also creates the potential risk of damaging other portions of the structure such as wrenching windows and doors into an out of square configuration as noted in the letter dated August 23, 2000 by the applicant's consulting engineer. As a result, the entire residence may need to be remodeled should additional damage occur during the replacement of the foundation. This alternative appears to be infeasible due to the high cost, substantial alteration of the subject residence and foundation, and the need to protect the adjoining properties. By contrast, the applicant's proposal would not require replacing the timber supports for the residence and deck with piles and a grade beam. The applicant's proposal would provide the necessary protection from wave action for the existing timber supports for the residence and deck as determined by the applicant's engineer.

The third alternative is to remove the existing seawall and construct a new seawall at the toe of the slope of the Pacific Coast Highway embankment. This alternative would be the most landward location for a seawall. The location of this alternative would subject the residence to uplift forces and require a new foundation design. With the additional cost of replacing the foundation added to the removal and new construction costs the engineer has determined that the costs are more than those estimated in Alternative Two and exceed the value of the residence.

The fourth alternative proposes to retain the existing 'unpermitted' seawall while a maximum four-foot seaward toe of the seawall would be removed. The removal of the seaward face of the seawall will require a "concrete patch" to cover the stone masonry seawall of about six (6) inches wide along the seaward face of the seawall. This toe is in effect a small base or step of the seawall varying from a few inches to the maximum of four-feet wide located below the 4.0 foot Mean High Tide Line contour of the seawall. Removal of the seaward toe of the seawall will increase the width of the beach a small amount and thereby allowing additional width for public access along the beach (Exhibit 9). The applicant has modified their project description to incorporate this alternative into the project design and is required to be implemented by Special Condition Number One.

Further, the applicant asks that the seawall in the existing location be retained, except for the removal of the seaward toe, to protect the existing older structure. In the event the residential structure is remodeled involving demolition of 50% or more of exterior walls or an addition to the residence resulting in an increase of 10% or more of structural size, the foundation modified or changed such as repairs or replacement of support piles or caissons, the septic system upgraded, relocated, or abandoned, construction of a new residential structure, or relocation or removal of any or all structures on the lot, the applicant agrees that at that time the shoreline protective device will be removed unless the Commission issues a new coastal permit for the

existing or modified shoreline protective device. The applicant's agreement is required to be implemented as Special Condition Number Two.

f. Conclusion

Coastal Act sections 30235 and 30250(a) set forth the Commission's mandate relative to permitting shoreline protective devices and beachfront development. In order for the Commission to permit the proposed project, which includes a 55 ft. long seawall, concrete 'cap, removal of the seaward toe, and return walls at each end, and underpinning, it must find the project consistent with the Chapter 3 policies of the Coastal Act.

Coastal Act section 30235, cited above, states that shoreline protective devices such as seawalls and other construction that would alter natural shoreline processes shall be permitted when those structures are necessary to serve coastal-dependent uses or to protect existing structures or to protect public beaches in danger from erosion and when they are designed to eliminate or mitigate adverse impacts on local shoreline sand supply. In the case of this project, a seawall is necessary to protect the supporting piles of an existing residence, a fill slope and sewage disposal system located at the top of the slope. Further, as previously discussed in detail, the Commission finds that the subject site is located on a beach that is narrow and eroding, the proposed seawall would protect an existing residence in danger due to erosion.

In addition, in past permit actions, the Commission has required that all new development on a beach, including shoreline protective devices, be designed to reduce adverse impacts to the sand supply and beach scour resulting from the development. The Commission notes that the applicant has reviewed four alternatives and identified a feasible alternative to allow the "as built" seawall to be modified in a manner that locates the seawall a few feet further landward. This alternative proposes to remove the toe of the seawall and construct a concrete cap on the face of the seawall, thereby moving up to three and one half feet of the seawall further landward. Special Condition Number One requires the applicant to implement this alternative. Providing this additional 3.5 feet of beach area will minimize beach scour and adverse impacts to the shoreline.

In past permit actions, the Commission has required a lateral public access easement for shoreline protective devices to mitigate adverse impacts to beach sand supply and public access. In this case, the applicant proposes to remove up to a four-foot seaward toe of the existing seawall, construct a concrete patch on the seaward face, and construct a concrete underpinning all of which will not extend further seaward the existing seawall. In addition to the removal of the seaward toe of the seawall, as proposed by the applicant to mitigate any potential erosion, sand supply, and public access impacts, the applicant also proposes an offer to dedicate lateral public access easement. Further, as proposed by the applicant, and required by Special Condition Number Five, some mitigation for any resulting impacts on sand supply and public access will be provided, at least at certain times of year, by the applicant's offer to

dedicate lateral public access along the beach between the seaward base of the modified seawall, as conditioned to remove its toe, and the Mean High Tide Line.

Therefore, the Commission finds that the proposed seawall meets the first and second tests of Section 30235 which allow such seawalls to be permitted when required to protect existing structures in danger from erosion and when designed to mitigate adverse impacts on local shoreline sand supply.

As explained in the preceding section regarding past Commission action on residential development, the proposed project is located on a fully developed stretch of beach and would be considered infill development. Therefore, the Commission finds that the proposed seawall does meet Section 30250(a) of the Coastal Act as its location is on a developed beach that is able to accommodate its.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30235 and 30250 of the Coastal Act.

C. Hazards and Geologic Stability

Coastal Act Section 30253 states in part:

New development shall:

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

Section 30253 of the Coastal Act mandates that new development provide for geologic stability and integrity and minimize risks to life and property in areas of high geologic, flood, and fire hazard. The proposed development is located along the coast of the Santa Monica Mountain area, an area that is generally considered subject to an unusually high amount of natural hazards. Geologic hazards common to beachfront sites include landslides, and erosion and flooding from storm waves.

1. Storm, Wave and Flood Hazard

The Malibu coast has been subject to substantial damage as a result of storm and flood occurrences, geological failures and firestorms. Therefore, it is necessary to review the proposed project and project site against the area's known hazards. The proposed project involves the construction of a seawall along a developed stretch of Las Tunas Beach. The site is susceptible to flooding and/or wave damage from storm waves and storm surge conditions and from liquefaction during an earthquake. Along the Malibu

coast, significant damage has also occurred to coastal areas from high waves, storm surge and high tides. In the El Nino winter of 1997-98, storms triggered mudslides and landslides and caused significant damage along the coast.

The 1997 - 1998 El Nino conditions produced wave overtopping and splashup to the residence and deck prompting the applicant to request and obtain an emergency coastal permit to construct a concrete cap on the "as built" masonry seawall. Experience from historic storm events in Malibu, particularly the high surf and storm wave conditions experienced during the winter of 1997 through 1998, indicates that this protection is essential to the long-term stability of the existing single family residence.

The applicant's submittal includes a Coastal Engineering Report (with three addendums) prepared by David C. Weiss, Structural Engineer and Associates dated January 28, 1998 which concludes that a shoreline protective device is necessary to protect the existing residence, foundation, and septic disposal system from wave erosion damage.

During the winter season, the proposed seawall will extend into an area exposed to wave attack, flooding, and erosion hazards that in the past have caused significant damage to development along the California coast, including the Malibu coastal zone and the beach area nearby the subject property. The Coastal Act recognizes that new development, such as the proposed seawall, may involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property. In addition, the applicant's consultant has further stated in the Coastal Engineering Report that "the owner should realize that one living in the hostile marine environment must always expect some damage due to ocean wave action. There is always the possibility just due to the "odds", that a larger wave than anticipated will wash onto the beach on a higher tide than normally encountered; however, the chances of this happening are rare enough that to design for higher waves on higher tides than now considered is impractical and unnecessary."

As such, the Commission finds that due to the unforeseen possibility of wave attack, erosion, and flooding, the applicant shall assume these risks as a condition of approval. Because this risk of harm cannot be completely eliminated, Special Condition number Three requires the applicant to waive any claim of liability on the part of the Commission for damage to life or property which may occur as a result of the permitted development. The applicant's assumption of risk, when executed and recorded on the property deed, will show that the applicant is aware of and appreciated the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

Lastly, as noted above, the project involves some demolition and construction on a beachfront lot subject to tidal influence. The proposed development, with its limited excavation of sandy beach and terrace deposits with beach level construction activity, may result in disturbance of the offshore rocky intertidal and kelp bed habitat through erosion, siltation, and debris deposition. Construction equipment, materials and demolition debris could pose a significant hazard to beachgoers or swimmers if used or stored where subject to wave contact or situated in a manner that creates a hazard for beach users or marine life. Although a portion of this proposed project has been completed on both an "unpermitted" and emergency basis, the construction of the underpinning and the removal of the seaward portion of the toe and construction of the concrete patch on the seaward face of the seawall is still a concern. As required by Special Condition Number One (1), this seaward toe must be removed by April 30, 2002 and therefore, the applicant needs to ensure that the project contractor; (a) not store any construction/demolition materials or waste where it may be subject to wave erosion and dispersion; (b) not allow any machinery in the intertidal zone at any time; and (c) remove promptly from the beach any and all debris that results from the construction/demolition activities, as required by Special Condition Number Seven. The Commission finds that the construction of the proposed project will minimize risks to life and property in this public beach area that is subject to wave hazards and the applicant will protect coastal resources during the modifications to the seawall.

The Commission finds that based on the findings of the applicant's coastal engineer, that the project as conditioned above, is consistent with Section 30253 of the Coastal Act.

D. Public Access.

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

Coastal Act Section 30210 states that:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Coastal Act Section 30211 states that:

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

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

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

Coastal Act Section 30220 states that:

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

Coastal Act sections 30210 and 30211 mandate that maximum public access and recreational opportunities be provided and that development not interfere with the public's right to access the coast. Likewise, section 30212 of the Coastal Act requires that adequate public access to the sea be provided to allow use of dry sand and rocky coastal beaches. The major access issue in this permit application is the occupation of rocky and sandy beach area by a structure and potential effects on shoreline sand supply and public access in contradiction of Coastal Act policies 30211 and 30221.

As proposed the seawall would extend up to about sixteen (16) feet further onto the sandy beach than the footprint of the existing single family residence and ten (10) feet further onto the sandy beach than the dripline of the existing deck. As stated previously, the proposed project is located on Las Tunas Beach, approximately ¼ mile east of the nearest public vertical coastal accessway maintained by the County of Los Angeles and adjacent to a public accessway available through a Caltrans drain located beneath Pacific Coast Highway. All projects requiring a coastal development permit must be reviewed for compliance with the public access and recreation provisions of Chapter 3 of the Coastal Act. Based on the access, recreation and development sections of the Coastal Act, the Commission has required public access to and along the shoreline in new development projects and has required design changes in other projects to reduce interference with access to and along the shoreline.

The beaches of Malibu are extensively used by visitors of both local and regional origin and most planning studies indicate that attendance of recreational sites will continue to increase significantly over the coming years. The public has a right to use the shoreline under the public trust doctrine, the California Constitution and California common law. The Commission must protect those public rights by assuring that any

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proposed shoreline development does not interfere with or will only minimally interfere with those rights.

As noted above, interference by a seawall has a number of effects on the dynamic shoreline system and the public's beach ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile which results from reduced beach width, alter the usable area under public ownership. A beach that rests either temporarily or permanently at a steeper angle than under natural conditions will have less horizontal distance between the mean low water and mean high water lines. This reduces the actual area in which the public can pass on their own property. The second effect on access is through a progressive loss of sand as shore material is not available to nourish the bar. The lack of an effective bar can allow such high wave energy on the shoreline that materials may be lost far offshore where it is no longer available to nourish the beach. The effect of this on the public are 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 seawall is only acted upon during severe storm events, beach scour during the winter season will be accelerated because there is less beach area to dissipate the wave's energy. 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 year.

Due to the aforementioned adverse impacts of shoreline protective structures on public access, the proposed shoreline protection device must be judged against the public access and recreation policies of the State Constitution, Sections 30210, 30211, 30212 and 30220 of the Coastal Act. Along the California coast, the line between land and ocean is complex and constantly moving.

The State owns tidelands that are those lands below the Mean High Tide Line as it exists from time to time. By virtue of its admission into the Union, California became the owner of all tidelands and all lands lying beneath inland navigable waters. These lands are held in the State's sovereign capacity and are subject to the common law public trust. The public trust doctrine restricts uses of sovereign lands to public trust purposes, such as navigation, fisheries, commerce, public access, water oriented recreation, open space, and environmental protection. The public trust doctrine also severely limits the ability of the State to alienate these sovereign lands into private ownership and use free of the public trust. Consequently, the Commission must avoid decisions that improperly compromise public ownership and use of sovereign tidelands.

Where development is proposed that may impair public use and ownership of tidelands, the Commission must consider where the development will be located in relation to tidelands. The legal boundary between public tidelands and private uplands

is relation to the ordinary high water mark. In California, where the shoreline has not been affected by fill or artificial accretion, the ordinary high water mark of tidelands is determined by locating the existing "mean high tide line". The Mean High Tide Line is the intersection of the elevation of mean high tide with the shore profile. Where the shore is composed of sandy beach whose profile changes as a result of wave action, the location at which the elevation of mean high tide line intersects the shore is subject to change. The result is that the Mean High Tide Line (and therefore the boundary) is an "ambulatory" or moving line that moves seaward through the process known as accretion and landward through the process known as erosion.

Consequently, the position of the mean high tide line fluctuates seasonally as high wave energy (usually but not necessarily) in the winter months causes the mean high tide line to move landward through erosion, and as milder wave conditions (generally associated with the summer) cause the mean high tide line to move seaward through accretion. In addition to ordinary seasonal changes, the location of the mean high tide line is affected by long term changes such as sea level rise and diminution of sand supply.⁹

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

To avoid approving development that will encroach on public tidelands during any time of the year, the Commission, usually relying on information supplied by the State Lands Commission, will look to whether the project is located landward of the most landward known location of the mean high tide line. In this case, the State Lands Commission presently does not assert a claim that the project intrudes onto sovereign lands as discussed in two SLC letters noted above. However, a portion of the unpermitted seawall is located on top of or adjacent to a surveyed Mean High Tide Line. As noted in Exhibits 8 & 9, a MHTL surveyed on 11/11/97 is located along the seaward base and below a portion of the 'stone ledge'. Therefore, the Commission finds that at certain times of year, the proposed project may encroach on public tidelands.

Since a portion of the seawall is located below and a portion is located above a recent surveyed location of the Mean High Tide Line, impacts on shoreline processes including wave energy reflected by those structures contributes to erosion and steepening of the shore profile, and ultimately to the extent and availability of

⁹ The legal location of the tidelands boundary was the subject of litigation involving the Coastal Commission, the State Lands Commission and an owner of private uplands. (See *Lechuza Villas West v. California Coastal Commission*, ___ Cal. App. 4th ___, 97 Daily Journal D. A. R. 15277 (Dec. 19, 1997).

tidelands. That is why the Commission also must consider whether a project will have direct and indirect impacts on public ownership and public use of shorelands. The applicant is proposing to retain an 'unpermitted' seawall, make permanent a temporary permitted concrete 'cap' and construct an underpinning to the seawall. As discussed elsewhere in the Commission's findings above, there is some evidence that this project may result in direct and indirect impacts on tidelands because the proposed seawall is located in an area that is subject to wave attack and wave energy. However, the beach area located seaward of the seawall is generally rocky and sloped. It is somewhat difficult for the public to walk along the beach at this location due to the physical characteristics of the beach. As conditioned to require removal of the toe of the seawall, the proposed project will be located as far landward as feasible to protect the existing residence, slope and septic system. The applicant has offered a lateral public access easement, to provide some mitigation for any adverse effects on coastal access or recreation that the proposed seawall may have. Although this may only provide mitigation during certain times of the year, given the size of the lot and location of the existing development, this appears to be the only feasible mitigation that is available.

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

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

In past permit actions, the Commission has required that new shoreline protective devices be located as landward as possible to reduce adverse impacts to the sand supply and public access resulting from development. In the case of the proposed project, the applicant has not demonstrated that the proposed seawall is located as far landward as feasible to protect the existing residence, slope, and septic system on top of the slope. However, as conditioned to remove the toe of the seawall, the proposed project will be located as far landward as feasible to protect the existing residence, and older structure, a slope and septic system.

If proposed, such changes would raise the possibility that the development footprint could be moved landward, potentially obviating the need for the presently proposed seawall, or at a minimum, offering the potential to relocate the seawall even further landward and thereby mitigating the seawall's adverse effects upon public access to the beach. In the event any changes to the structures on site are proposed a new coastal permit is required to seek continued authorization of the seawall as required in Special Condition Number Two. The Commission further notes that the residential structure the proposed seawall is designed to protect is an older structure that was constructed some time after the creation of the subject lot in 1938. Due to the age of the residential structure, it is anticipated that the applicant or successors in interest may propose to construct changes to the foundation, further upgrade or modify the septic system, substantially remodel the residence, construct a new residence, or relocate or remove all or a portion of the structures on the property. In addition, the septic disposal system the seawall protects in part will be outdated and that such systems may be banned in the future, or become obsolete altogether should a sewer system become available for the Malibu area in the future. As such, the proposed seawall in its proposed location may not be necessary to protect the existing structures are modified as noted above, or its septic system abandoned, for example, in the future. Therefore, the Commission finds it necessary to impose Special Condition Number Two to ensure that future development or changes to the existing structures on the subject site would require the applicant or successor in interest to seek a new permit from the Commission for the seawall that is the subject of this present coastal development permit application.

In addition, in past permit actions, the Commission has also required a lateral public access easement for new shoreline protection devices to mitigate adverse impacts to beach sand supply and public access. In the case of this project, to conclude with absolute certainty what impacts the proposed development would cause on the shoreline processes and public access, a historical shoreline analysis based on site-specific studies would be necessary. Although this level of analysis has not been submitted by the applicant, the applicant has proposed to offer a dedication of a public lateral access easement along the beach to mitigate any possible adverse impacts the proposed seawall may have on public access. The applicants offer proposes the easement as measured from the toe of the rock seawall to the MHTL. However, based on the 1997 surveyed MHTL a portion of the area where the seawall is located may already be at certain times of the year, public tidelands. However, as conditioned to remove the seaward maximum of four feet of the toe of the seawall, a small portion of the beach landward of the November 1997 Mean High Tide Line will be subject to the applicant's offer to dedicate lateral public access. Therefore, the Commission finds that the proposed lateral access easement will provide some mitigation for impact of the proposed seawall on public access and there is no other feasible mitigation that is available. Special Condition Number Five ensures the implementation of the applicant's offer, which will include the beach located along the entire width of the property from the Mean High Tide Line to the face of the seawall at the 4.0 foot Mean Sea Level contour. The Commission also notes that the new lateral access easement, which the applicant has offered to dedicate as part of this project, will

accurately describe the ambulatory nature of the easement's width in relation to the mean high tide line and will be consistent with other lateral access easements which have been recorded on other properties along Las Tunas Beach. In addition, Special Condition Number Six is needed to notify the applicant that approval of this permit does not constitute a waiver of any public rights that may exist on the property. Thus, the project, as conditioned, is consistent with the public access policies of the Coastal Act.

Further, as noted above, beachgoers who access the beach from the public accessways along Las Tunas Beach, walk along the shore past the applicant's proposed project. Given the ambulatory nature of the mean high tide line, and thus the boundary between public and private lands, there have been conflicts and confusion between the beach users and private property owners regarding which portions of Las Tunas Beach are private and which are public. The placement of signs on residential beachfront property which state "PRIVATE BEACH" or "PRIVATE PROPERTY" or contain similar such message prohibiting public use of the beach have routinely caused members of the public to believe that they do not have the right to use the shoreline along Las Tunas Beach. In effect, these signs have served to contradict the public's rights to use the shoreline pursuant to the California Constitution and California common law. In order to ensure that the general public is not precluded from using the shoreline, the Commission finds it necessary to impose Special Condition Number Four which would prohibit the landowner from placing any signs which explicitly or implicitly indicate that the beach is private or like messages that attempt to prohibit public use of the beach. Furthermore, it is necessary that any signs posted on the applicant's property be subject to the review and approval of the Executive Director prior to posting.

For all of these reasons, therefore, the Commission finds that as proposed, the project is not consistent with Sections 30210, 30211, 30212, 30220, and 30251 of the Coastal Act.

E. Violation of the Coastal Act

Although development has taken place prior to the filing of this permit application, consideration of the application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Review of this permit does not constitute a waiver of any legal action with regard to any violation of the Coastal Act that may have occurred.

The proposed 'as built' rock masonry seawall located on a sandy beach requires a coastal permit in order to be in conformance with the Coastal Act. The Commission finds it necessary to require the applicant to fulfill all of the Special Conditions as a prerequisite to the issuance of this permit, as required by Special Condition Number Eight (8) within a reasonable period of time, within 180 days of Commission action. Only as conditioned is the proposed development consistent with the Coastal Act.

F. Local Coastal Program

Section 30604 of the Coastal Act states that:

(a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with Chapter 3 (commencing with Section 30200) and that the permitted development will not prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200). A denial of a coastal development permit on grounds it would prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200) shall be accompanied by a specific finding which sets forth the basis for that conclusion.

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

G. CEQA

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

The Commission finds that the proposed project, as conditioned, will not have significant adverse effects on the environment, within the meaning of the California Environmental Quality Act of 1970 and that there are no feasible alternatives that could lessen these significant adverse effects on the environment. Therefore, the proposed project has been adequately mitigated and is consistent with CEQA and the policies of the Coastal Act.

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

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

Adopted City of Malibu General Plan. November 1995

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

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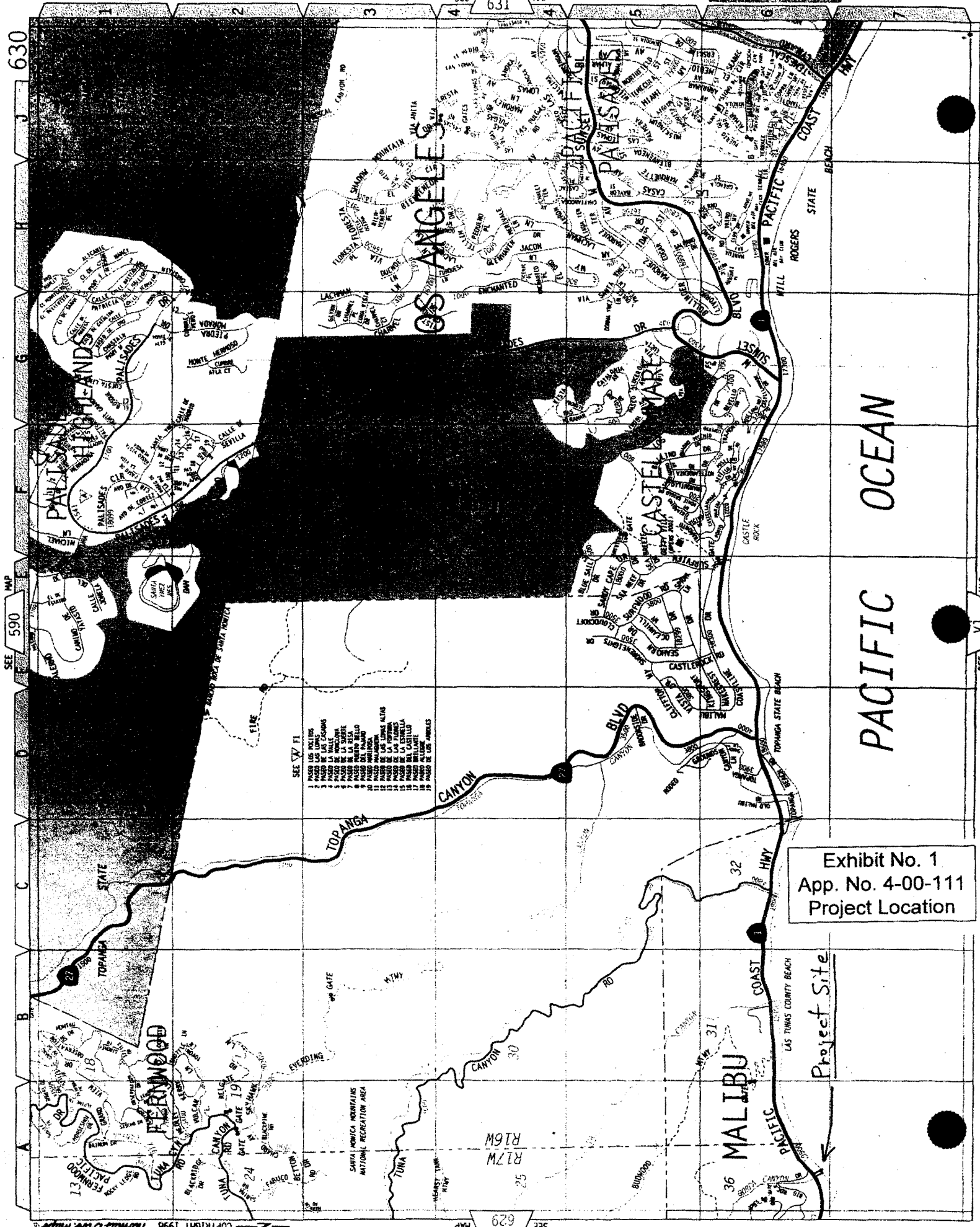
State of California. State Department of Boating and Waterways (formerly Navigation and Ocean Development). Shore Protection in California, 1976.

Weiss, David Structural Engineer & Associates, Coastal Engineering Report for Kilb Residence, dated January 28, 1998; Addendum Coastal Engineering Report, dated June 4, 1999; Proposal to Obtain Approval, dated August 1, 1999; Coastal Application Number 4-98-019, dated February 2, 2000; Additional Discussion Protective Bulkhead, dated March 5, 2000; Coastal Application Number 4-00-111, dated June 7, 2000; Additional Information letter on Alternatives, dated August 23, 2000.

LETTER

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

COASTAL PERMIT APPLICATIONS Staff Report Lechuza Villas West 2/4/97; Coastal Permit Number 4-94-200, Dussman; Coastal Permit Number 4-97-191, Kim; Coastal Permit Number 4-97-171, Sweeney; Coastal Application Number 4-98-158, O'Conner, Coastal Permit Number 4-98-056, O'Toole.



PARTIAL TOPOGRAPHIC SURVEY

11/11/97

FOUND NAIL & TAG
"RCE 18216" NO REF.

FOUND NAIL & TAG
"RCE 18216" NO REF.

A=2°50'03"

R=1040.00'

L=51.44'



W.R. Benson & Associates, Inc.
10121
11/11/97

W.R. Benson & Associates, Inc.
10121
11/11/97

W.R. Benson & Associates, Inc.
10121
11/11/97

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W.R. Benson & Associates, Inc.
10121
11/11/97

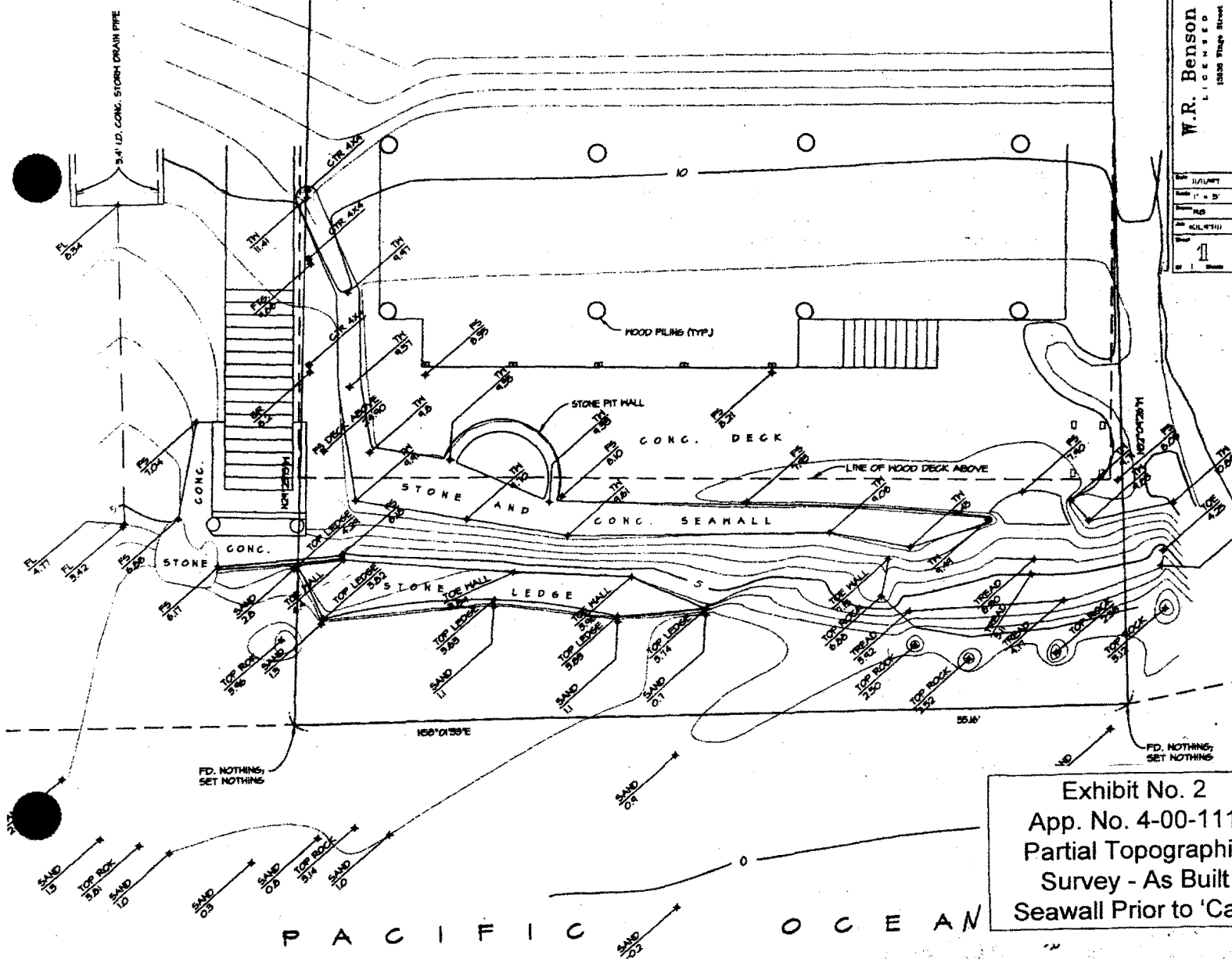
W.R. Benson & Associates, Inc.
10121
11/11/97

W.R. Benson & Associates, Inc.
10121
11/11/97

W.R. Benson & Associates, Inc.
10121
11/11/97

W.R. Benson & Associates, Inc.
10121
11/11/97

14406 PACIFIC COAST HIGHWAY




W.R. Benson & Associates, Inc.
LICENSED LAND SURVEYORS
10330 Third Street, Suite 101, San Diego, CA 92121 (619) 597-1884

Scale: 1" = 30'
North Arrow

Exhibit No. 2
App. No. 4-00-111
Partial Topographic
Survey - As Built
Seawall Prior to 'Ca

DATE	BY



LAINES ASSOCIATES
CONCRETE STRUCTURAL SYSTEMS
2000 CLEVELAND BLVD., S.W. (10th FLOOR) MIAMI, FL 33135
305-375-1014 FAX 305-437-0845

BRIAN KILB RESIDENCE

PLAN & DETAILS

GENERAL NOTES

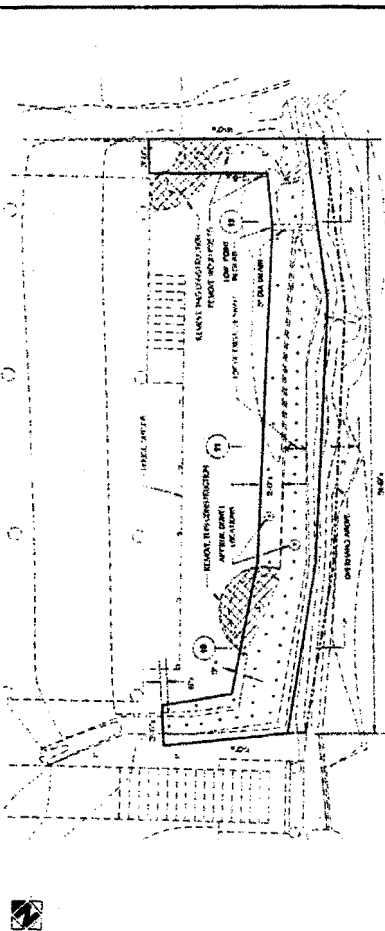
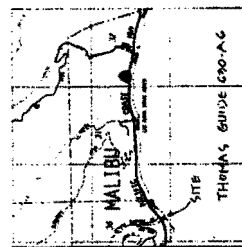
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GENERAL NOTES

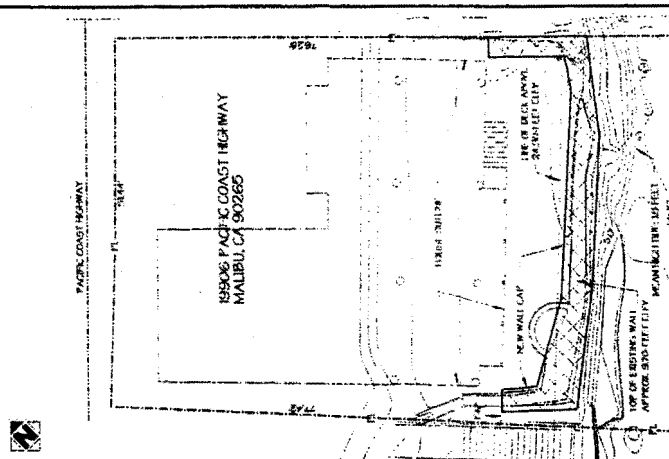
- [illegible]

ASTORIA

1. Epoxy anchoring of reinforcing steel shall be in accordance with the COVERT OPERATIONS, Inc. C&G-7000, in strict accordance with the manufacturer's installation requirements. ICBO Report No. 4848, Los Angeles RIR 75113.

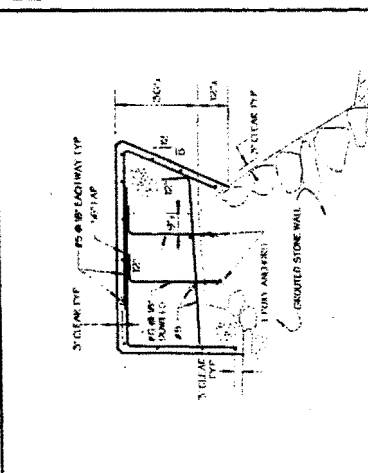


PLAN AT SEAWALL CAP

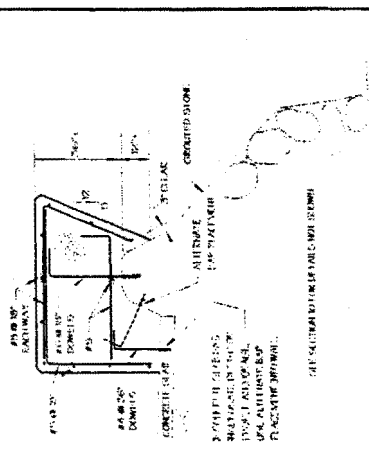


PLOT PLAN

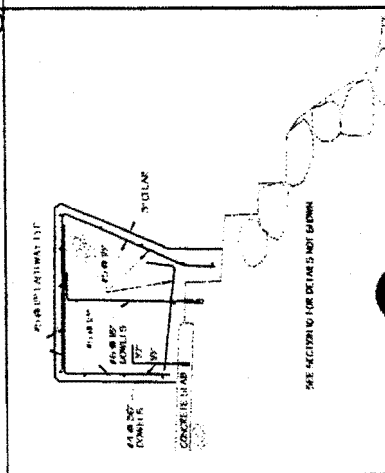
Exhibit No. 3
App. No. 4-00-111
Concrete Cap
Plan



SECTION 12 - 1'-0"



SECTION 1.2-1.8



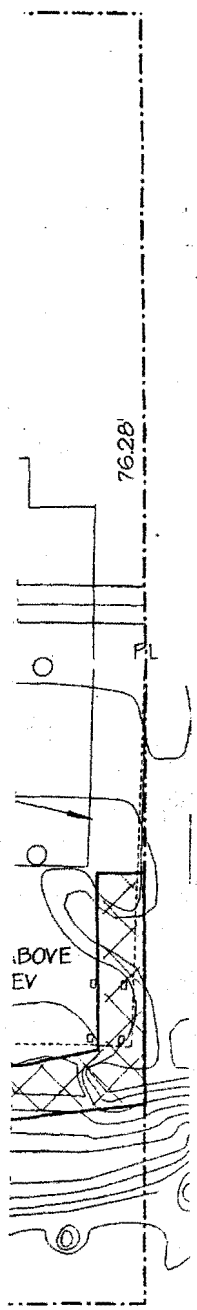
100

4

D3963-96. Bending of bars shall be accomplished before the epoxy is applied. Any damage to the epoxy coating during shipping, handling, or placement shall be repaired with an epoxy patch.

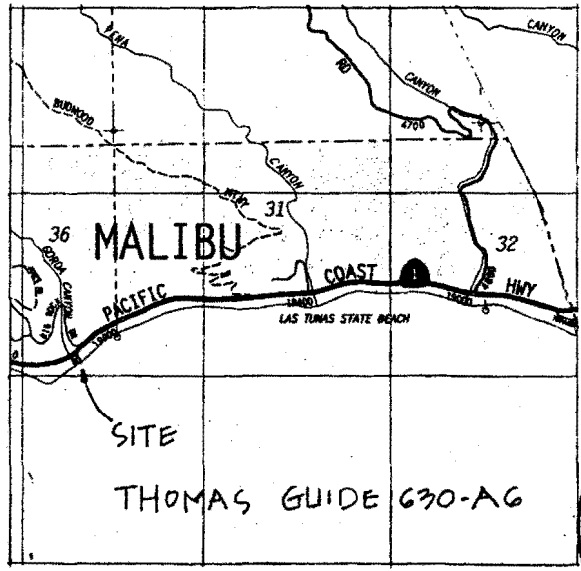
FASTENERS

1. Epoxy anchoring of reinforcing steel shall be in accordance with the COVERT OPERATIONS, Inc. CIA-Gel 7000, in strict accordance with the manufacturer's installation requirements. ICBO Report No. 4846, Los Angeles RR 25113.



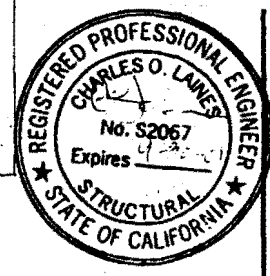
CITY OF MALIBU
PLANNING DEPARTMENT
APPROVAL IN CONCEPT
SIGNATURE _____
DATE 2.6.98
PLANNING REVIEW NO. PPR 98-021
THIS IS NOT A PERMIT
AND IS SUBJECT TO ANY
CONDITIONS LISTED BELOW
*THIS APPROVAL IS VALID FOR 1 YR FROM THE DATE STAMPED.

3' HIGH CAP TO EXISTING
SEAWALL



RECI
FEB 0
PLANNING

Exhibit No. 4
App. No. 4-00-111
Concrete Cap
Plan Approval



Date	1-12-98
Scale	NOTED
Drawn	CL
Job	97024
Sheet	K1

SEAWALL CAP FOR
BRIAN KILB RESIDENCE
19906 PACIFIC COAST HIGHWAY, MALIBU CA 90026

RECEIVED
FEB 05 1998
CALIFORNIA
COASTAL COMMISSION
SOUTH CENTRAL COAST DIST

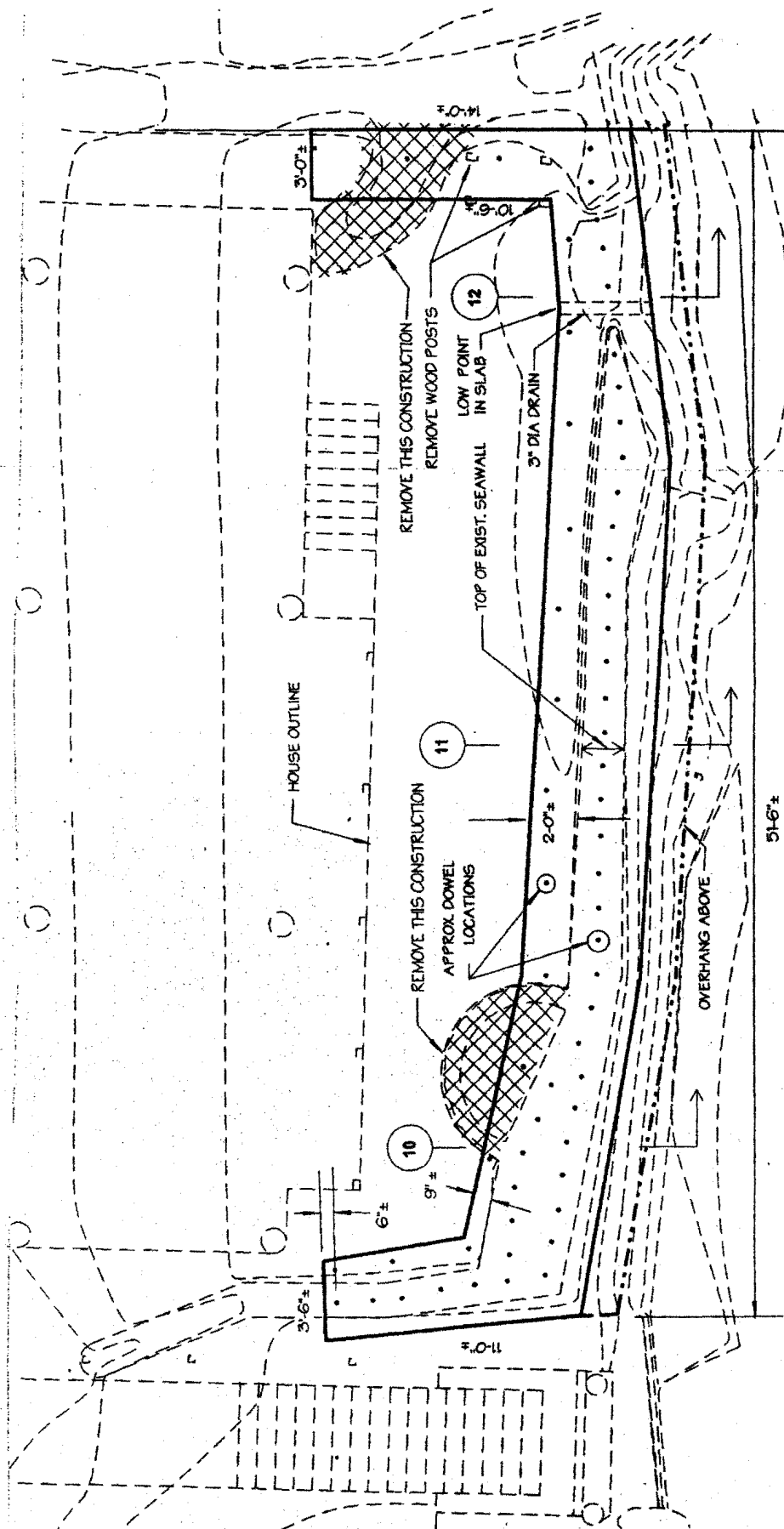
PLAN & DETAILS
GENERAL NOTES

GENERAL NOTES

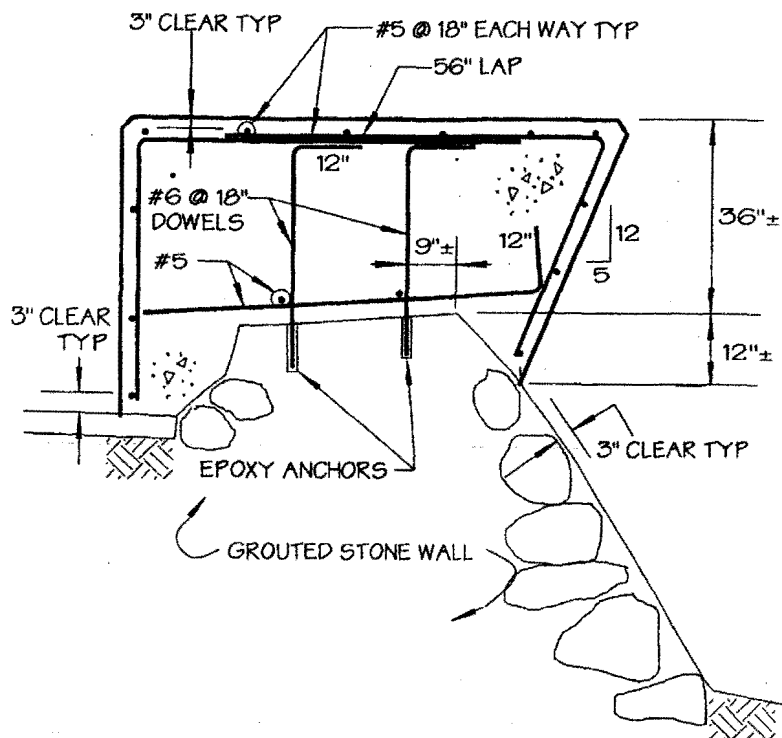
6

3

Of Sheets



1" = 5'-0" (50 SCALE) PLAN AT SEAWALL CAP



1/2" = 1'-0"

SECTION

10

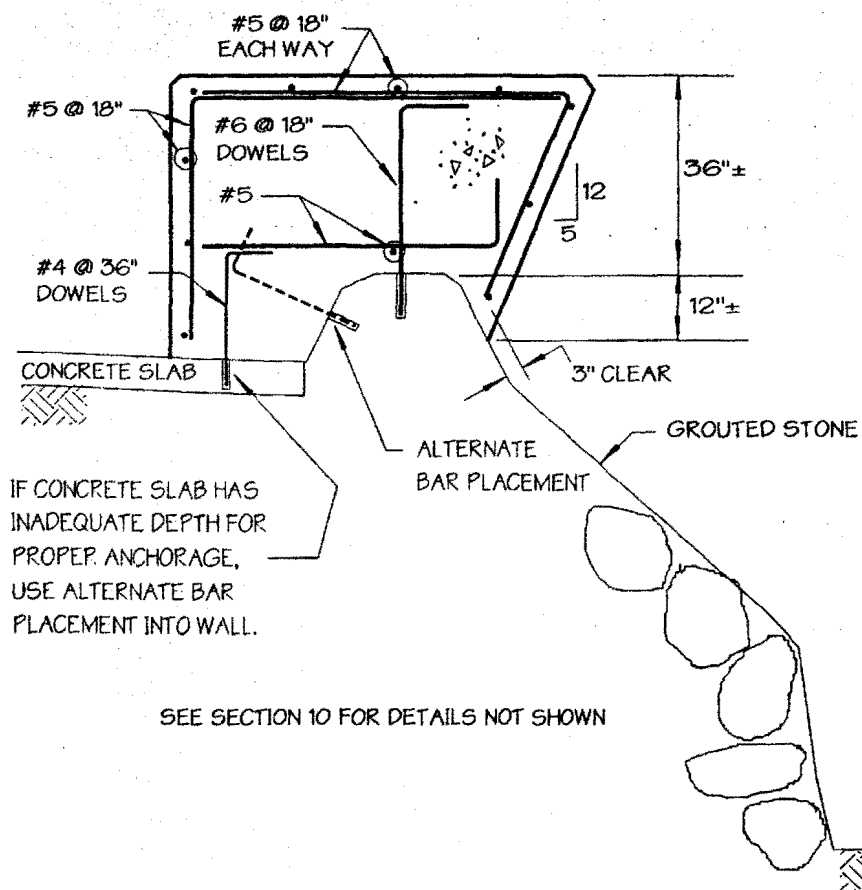
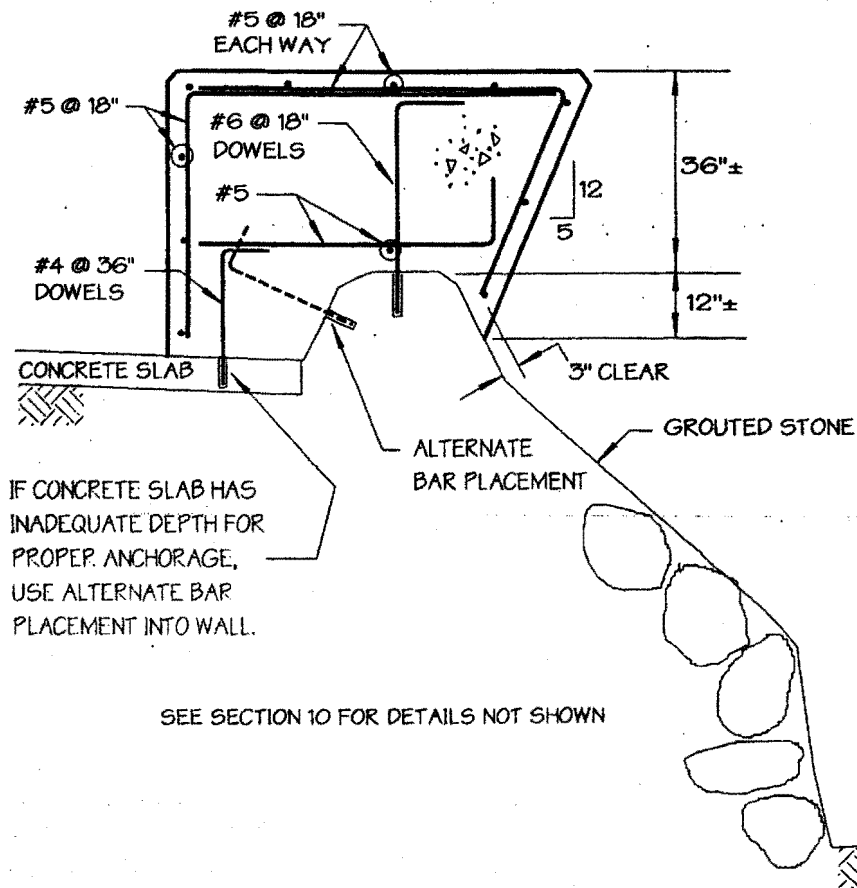


Exhibit No. 6
App. No. 4-00-11
Concrete Cap
Plan - Detail

1/2" = 1'-0"

SECTION

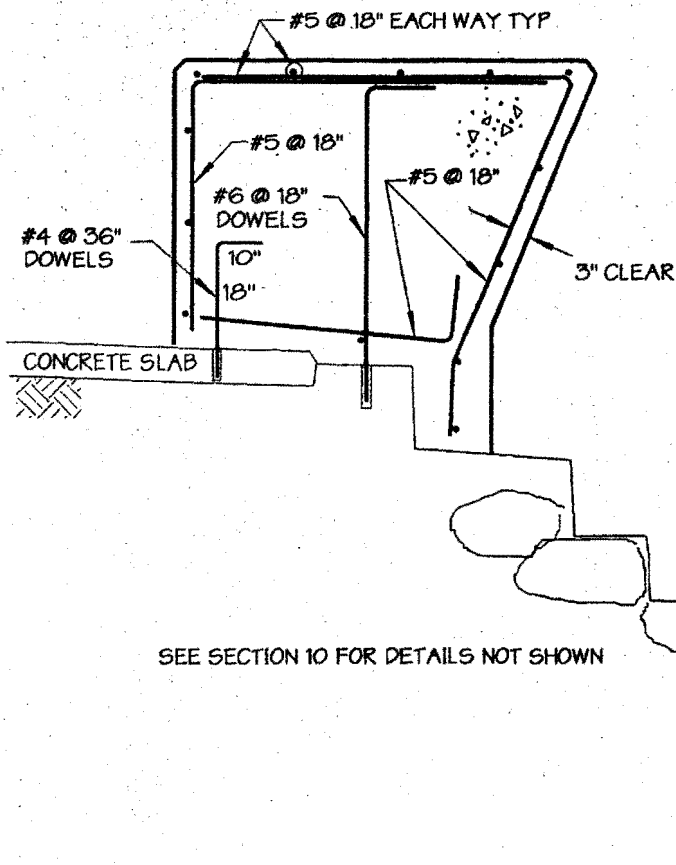
(10)



1/2" = 1'-0"

SECTION

(11)

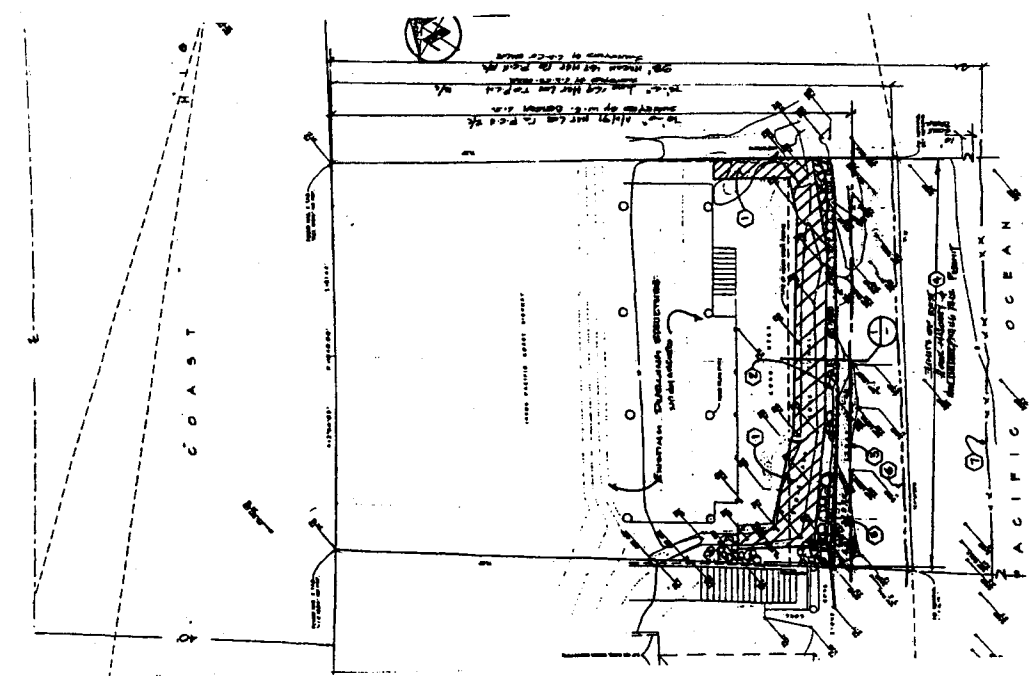
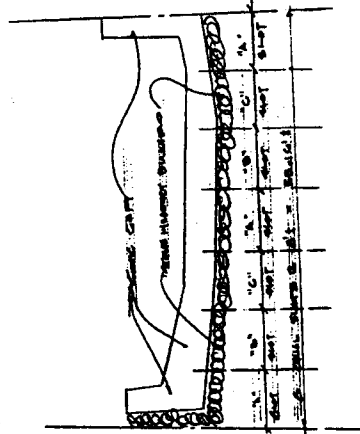
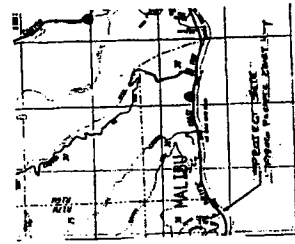


1/2" = 1'-0"

SECTION

(12)

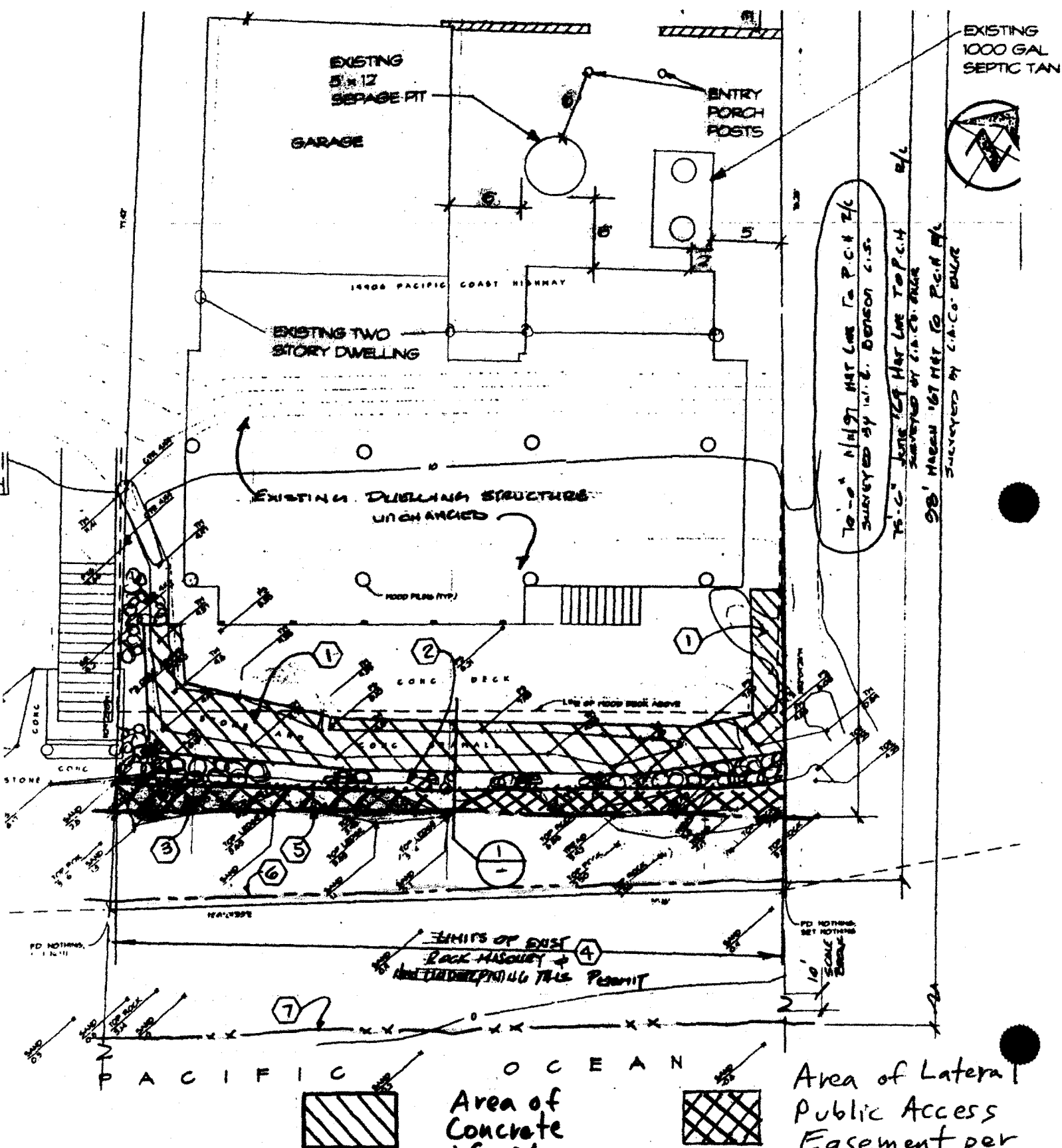
Exhibit No. 4-00-11
App. No. 4-00-11
Concrete Cap
Plan - Detail



Underpinning Shot Cut Excavation Plan
Scale 1/4" = 1'

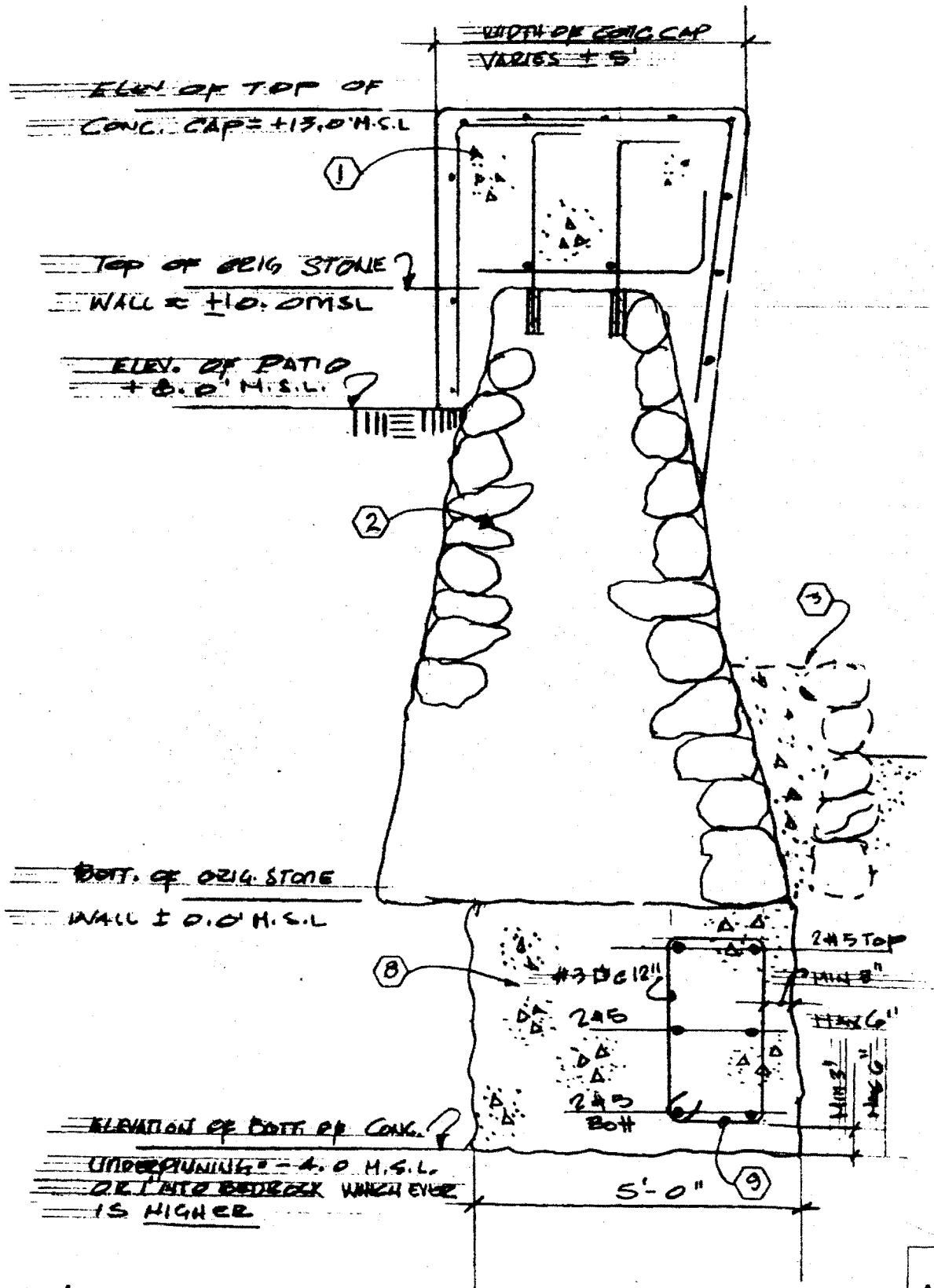
Existing Rock Bulkhead, Concrete Cap & Underpinning Plan

Exhibit No. 8
App. No. 4-00-11
Underpinning of
Existing Wall



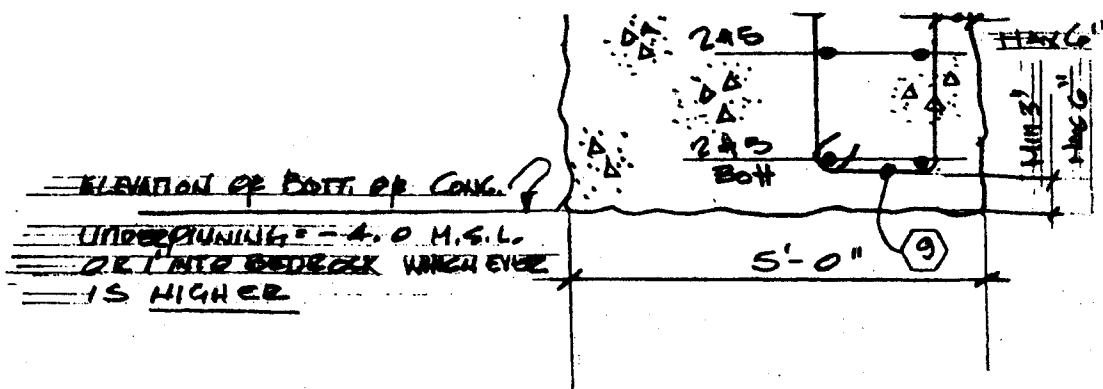
Existing Rock Bulkhead, Concrete Cap & Underpinning Plan

Area of Lateral
Public Access
Easement per
11/11/97 MHTL



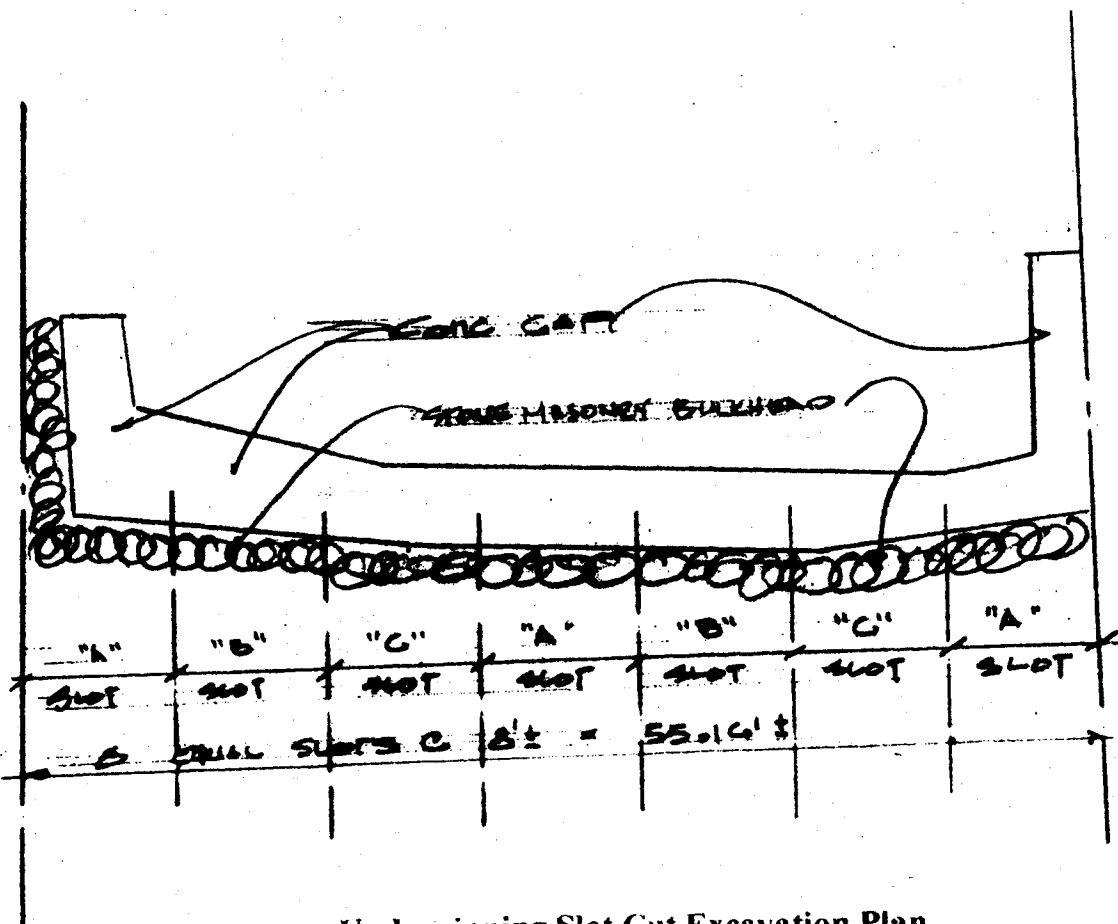
Masonry Rock bulkhead, Conc. Cap & Underpinning Sect.

Exhibit No. 10
 App. No. 4-00-111
 Underpinning of
 Existing Wall -
 Detail



Masonry Rock bulkhead, Conc. Cap & Underpinning Sect.

Scale: 1/2" = 1'



Underpinning Slot Cut Excavation Plan

Scale: 1/8" = 1'

Underpinning Installation:

1. Wall underpinning to "A", "B", "C" slot method. width of slots to be 8'.
2. All excavations deeper than 4 feet must descend in accordance with all local safety regulations.
3. Contractor shall be responsible for safety at all times, no exceptions.

Exhibit No. 1
App. No. 4-00-111
Underpinning of
Existing Wall -
Detail

19906 PACIFIC COAST HWY.
MALIBU, CA 90265

S.F.D.: 1 Bedroom (E)
SEPTIC TANK: 1000 Gallon (N)
PRESENT: 1 - 5' X 12' BI w/2' Cap (N)
FUTURE: None
PERC RATE: Unknown

NOTES:

1. This approval is for a new private sewage disposal system, a new perimeter wall, and a new entryway, as shown. The existing private sewage disposal system shall be properly removed.
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 for one year or until City of Malibu Uniform Plumbing Code and/or Administrative Policy changes render it noncomplying.

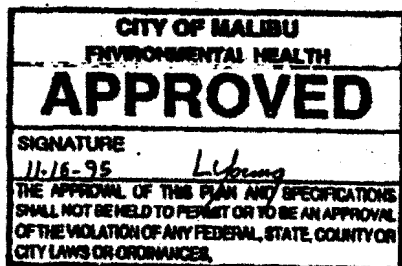
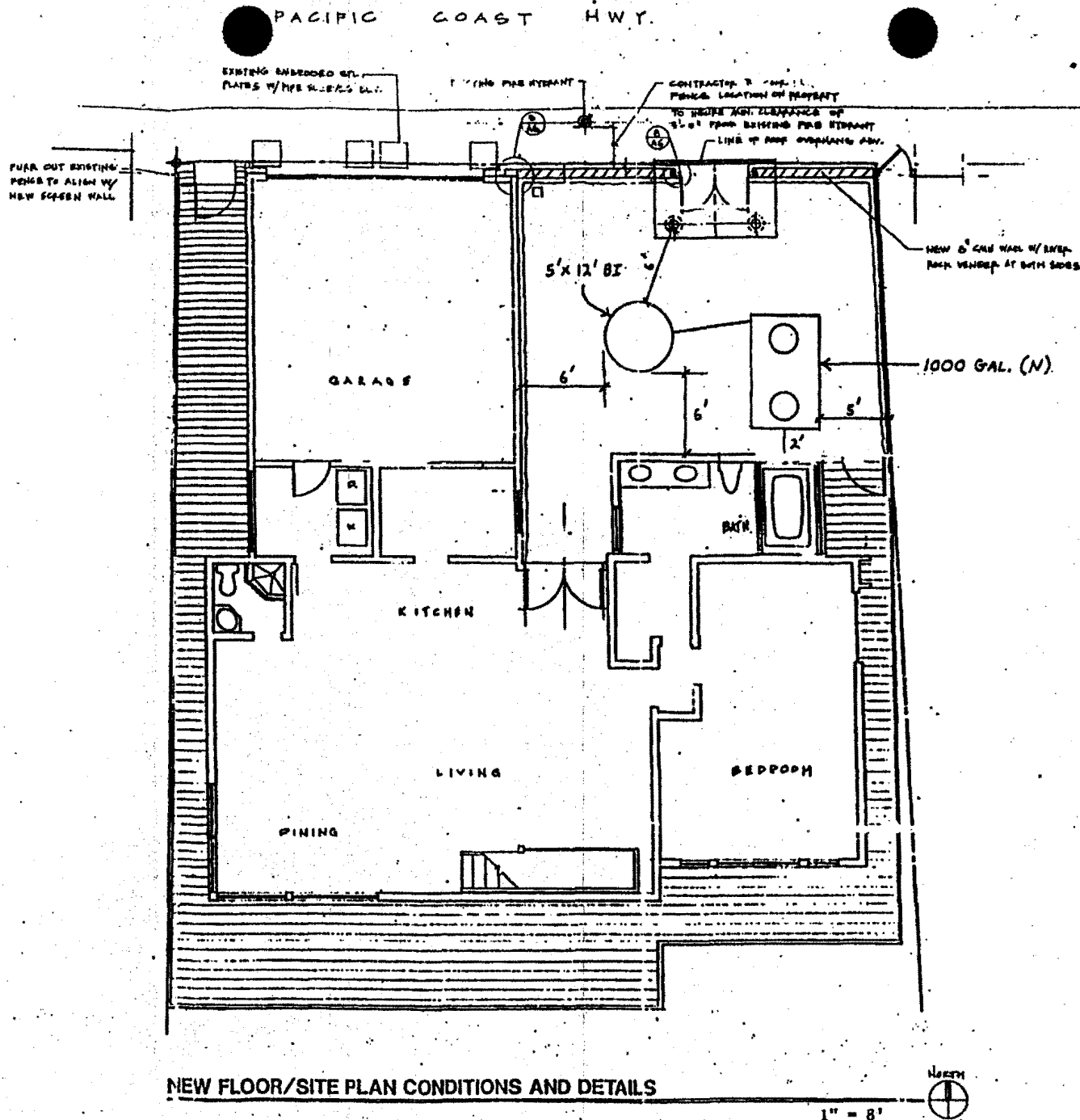


Exhibit No. 12
App. No. 4-00-111
Replacement
Sewage System



CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

**ROBERT C. HIGHT, Executive Officer**

California Relay Service From TDD Phone 1-800-735-2927
from Voice Phone 1-800-735-2927

Contact Phone: (916) 574-1892

Contact FAX: (916) 574-1925

RECEIVED

March 29, 1999

JUN 17 1999 Ref: SD 99-02.05.10

Susan McCabe
1930 Purdue Avenue, #10
Los Angeles CA 90025

CALIFORNIA
COASTAL COMMISSION
SOUTH CENTRAL COAST DISTRICT

Dear Ms. McCabe:

SUBJECT: Coastal Development Project Review for After-the-Fact Repairs to Existing Seawall at 19906 Pacific Coast Highway, Malibu

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

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

Your client is requesting after-the-fact approval for repairs to an existing grouted stone seawall at 19906 Pacific Coast Highway in the Big Rock Beach area of Malibu. The repairs were authorized by the California Coastal Commission pursuant to emergency permit #4-98-019G issued on February 10, 1998, and involved the construction of a concrete cap atop the existing seawall. You indicate that the seawall was apparently installed some years ago by a previous property owner. Based on the January 12, 1998 plans prepared by Laines Associates, the seawall structure is located between the seven and ten foot contour elevation. This is a well-developed stretch of beach with the adjacent residences all having similar stone protective structures.

We do not at this time have sufficient information to determine whether this project will intrude upon state sovereign lands or interfere with other public rights. Development of information sufficient to make such a determination would be expensive and time-consuming. We do not think such an expenditure of time, effort and money is

Exhibit No. [redacted]
App. No. 4-00-111
State Lands
Commission
Letter 3/29/99
Page 1 of 2

March 29, 1999

warranted in this situation, given the limited resources of this agency and the circumstances set forth above. This conclusion is based on the size and location of the property, the character and history of the adjacent development, and the minimal potential benefit to the public, even if such an inquiry were to reveal the basis for the assertion of public claims and those claims were to be pursued to an ultimate resolution in the state's favor through litigation or otherwise.

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

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

Sincerely,



Robert L. Lynch, Chief
Division of Land Management

cc: Craig Ewing, City of Malibu

CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202



PAUL D. THAYER, Executive Officer

(916) 574-1800 FAX (916) 574-1810

California Relay Service From TDD Phone 1-800-735-2925
from Voice Phone 1-800-735-2925

Contact Phone: (916) 574-1892

Contact FAX: (916) 574-1925

July 21, 1999

File Ref: SD 99-02-05.10

Susan McCabe
1930 Purdue Avenue, #10
Los Angeles, CA 90025

Dear Ms. McCabe:

SUBJECT: Coastal Development Project Review for Underpinning of Existing
Seawall at 19906 Pacific Coast Highway, Malibu

This is in response to the letter from James Johnson of the California Coastal Commission requesting that the staff of the California State Lands Commission (CSLC) review the revised project of your client, Brian Kilb, to determine whether the CSLC asserts a sovereign title interest in the property that the subject project will occupy and whether it asserts that the project will intrude into an area that is subject to the public easement in navigable waters.

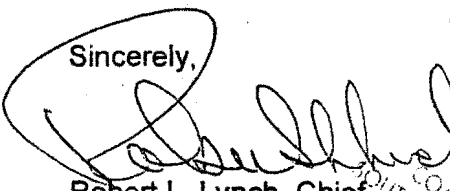
The facts pertaining to your client's revised project, as we understand them, are these:

Your client is proposing to install concrete underpinning to reinforce an existing seawall adjacent to his residence at 19906 Pacific Coast Highway in Malibu. The proposed underpinning will extend down four feet from the toe of the seawall and will extend no further seaward than the existing seawall. This proposed underpinning is an addition to the project reviewed by CSLC staff earlier this year that involved after-the-fact repairs to and legalization of the existing seawall. By letter dated March 29, 1999, you were advised that the CSLC would not be asserting jurisdiction over the existing seawall.

Based on the above, the position of CSLC staff as stated in our March 29, 1999 letter remains unchanged.

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

Sincerely,


Robert L. Lynch, Chief
Division of Land Management

cc: James Johnson, CCC/Ventura

RECEIVED
AUG 18 1999
CALIFORNIA STATE LANDS COMMISSION
DIVISION OF LAND MANAGEMENT

Exhibit No. 14
App. No. 4-00-111
State Lands
Commission
Letter 7/21/99

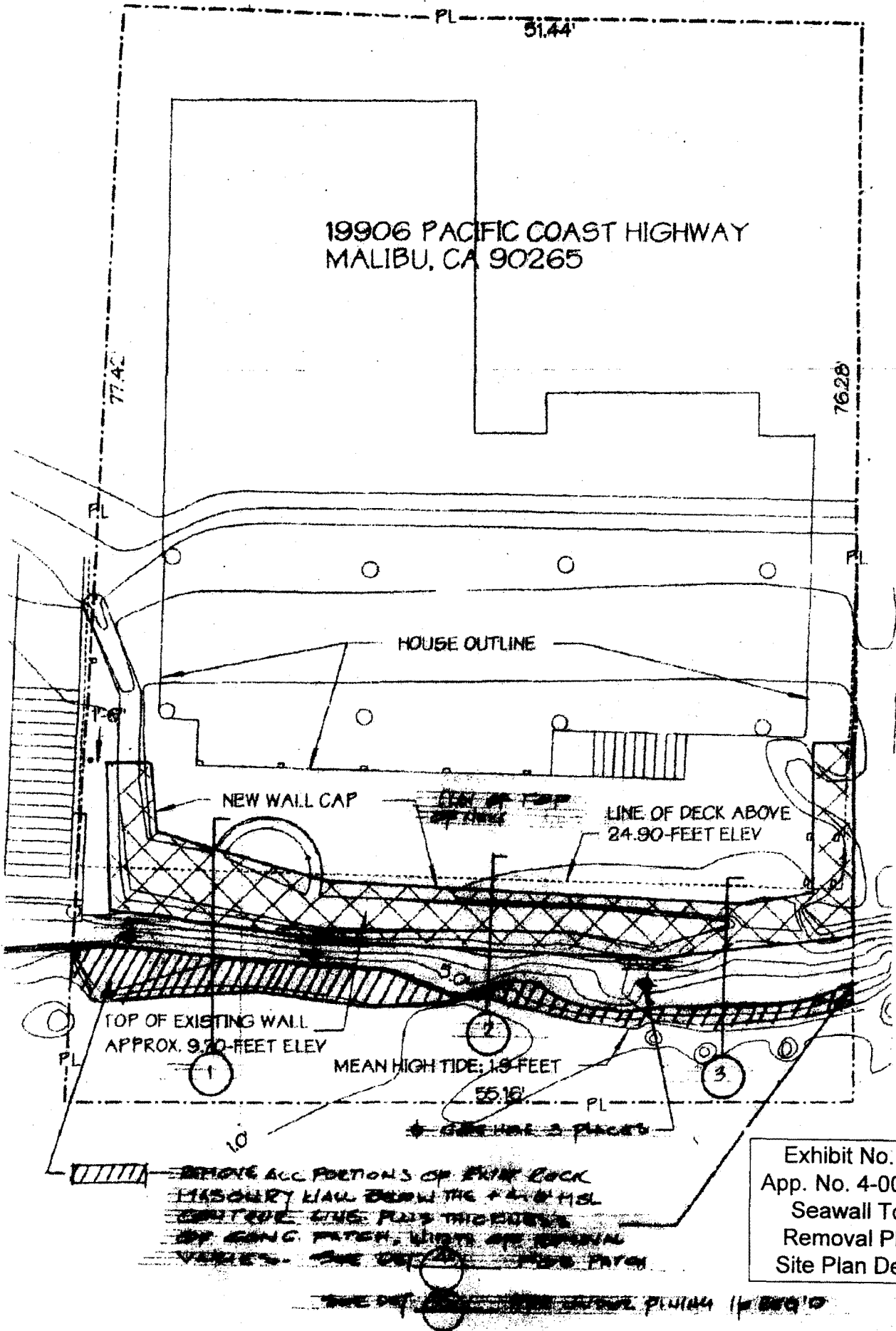


Exhibit No. 18
App. No. 4-00-111
Seawall Toe
Removal Plan
Site Plan Detail