CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
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SAN DIEGO, CA 92108-4402
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F 8b

Addendum

January 12, 2010

To: Commissioners and Interested Persons

From: California Coastal Commission
San Diego Staff

Subject: Addendum to **F 8b** Coastal Commission Permit Application **#6-88-464-A1 (Lynch and Frick)**, for the Commission Meeting of Friday, January 15, 2010

Staff recommends the following changes be made to the above-referenced staff report:

1. On Page 10 of the staff report, Special Condition #17 shall be added as follows:

   17. Removal of Unpermitted Development. **WITHIN 90 DAYS OF ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, or within such additional time as the Executive Director may grant for good cause, the applicants shall remove all portions of the unpermitted 4 ft.-diameter concrete footings that surround the telephone pole supports of the existing seawall. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

2. On Page 37 of the staff report, Section 6 shall be revised as follows:

   6. Unpermitted Development. Development including, but not limited to, 4 ft.-diameter concrete footings around the 15 telephone poles that have been integrated in the existing seawall, has taken place without benefit of a coastal development permit. Although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the policies of the certified LCP and the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations, nor does it constitute an implied statement of the Commission's position regarding the legality of any development undertaken on the subject site without a coastal permit, or that all aspects of the violation have been fully resolved. Accordingly, the applicants remain subject to enforcement action just as they were prior to the approval of this permit for engaging in unpermitted development, unless and until the conditions of approval

included in this permit are satisfied, the permit is issued, and the unpermitted development is removed. To assure the unpermitted development is resolved in a timely manner, Special Condition #16 has been attached to require the applicants to comply with all Special Conditions of approval within 120 days of Commission action or within such additional time granted by the Executive Director for good cause. In addition, Special Condition #17 has been attached to require that the unpermitted 4 ft.-diameter concrete footings that have been integrated in the existing seawall around the 15 telephone poles be removed in their entirety within 90 days of issuance of the subject coastal development permit or within such additional time granted by the Executive Director for good cause.

(G:\San Diego\Reports\Amendments\1980s\6-88-464-A1 Addendum Frick and Lynch.doc)

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F8b

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Length of Extension:	90 Days
Final Date for Commission Action:	January 22, 2010
Staff:	G. Cannon-SD
Staff Report:	December 30, 2009
Hearing Date:	January 14-15, 2010

AMENDMENT REQUEST
STAFF REPORT AND PRELIMINARY RECOMMENDATION

Application No.: 6-88-464-A1

Applicant: Mrs. Barbara Lynch
Mr. and Mrs. Thomas Frick

Agent: Jennifer Lynch

Original Description: After-the-fact construction of seawall, upper bluff retaining wall and private access stairway between two lots. Development also includes subdivision of an 18,490 sq. ft. parcel into two parcels of 9,245 sq. ft. and the construction of a 4,140 sq. ft. home on the northern lot. An existing duplex on the southern lot will remain.

Proposed Amendment: Demolish existing seawall, construct new seawall, remove portions of mid-bluff wall, install new tiebacks to mid-bluff wall and color and texture mid-bluff wall to blend with the natural slope. Project also includes reconfiguring slope area between seawall and mid-bluff wall to enable landscaping. The lower portion of the existing private access stairway is proposed to be removed during construction and reconstructed to tie into the new seawall and mid-bluff wall.

Site: 1500 and 1520 Neptune Avenue, Encinitas, San Diego County
APN 254-040-34 and 35

STAFF NOTES:

Summary of Staff's Preliminary Recommendation: Staff is recommending approval of only that portion of the proposed seawall reconstruction below 1500 Neptune Avenue because it has been demonstrated that a seawall is necessary to protect the existing duplex at the top of the bluff. However, staff is not recommending the Commission approve the

reconstruction of the seawall below 1520 Neptune Avenue, the proposed mid-bluff wall or the reconstruction of the private access stairway on the face of the bluff. The Commission's coastal engineer and geologist have reviewed the applicant's geotechnical information and have concluded that it demonstrates an approximately 50 foot-long seawall, or the minimum wall length necessary to provide slope stability for 1500 Neptune Avenue, is the only portion of the proposed development that is necessary to protect the existing duplex structure at 1500 Neptune Avenue. The Commission's coastal engineer and geologist have determined that the proposed mid-bluff wall is not required at this time to protect the existing structures and that the home at 1520 Neptune Avenue is not currently threatened by erosion, so that the proposed seawall below it is also not required. Since the entire mid-bluff wall and the portion of the seawall below 1520 Neptune is not required to protect the homes, their reconstruction cannot be found to be consistent with the requirements of the LCP or public access/recreation policies of the Coastal Act. In addition, the reconstruction of the private access stairway is inconsistent with the LCP requirements that prohibit the construction of new private access stairways over the bluff and that existing private accessways over the bluff be discouraged and phased out over time.

The proposed development has been designed and conditioned to mitigate its impact on coastal resources such as scenic quality, geologic concerns, and shoreline sand supply. The applicants are proposing to pay an in-lieu fee for the associated impacts of the development on regional sand supply ($22,693.00 for the seawall below 1500 Neptune Ave). The proposed seawall will be located inland of the mean high tide line within the City's jurisdiction and, according to the Commission's coastal engineer, the seawall is unlikely to result in direct impacts to public access and recreational use over its estimated 30 year lifetime. Therefore, in this case and at the present time, no mitigation for impacts to public access and recreational use is recommended. However, in order to re-assess potential impacts after 30 years, the permit has been conditioned to require the applicant to submit an amendment application to the Commission 29 years after the seawall construction to re-evaluate the need for mitigation to address direct impacts to public access and recreational use associated with the presence of the seawall.

In addition, a special condition has been attached which requires the applicants to acknowledge that should additional stabilization be proposed in the future, the applicants will be required to identify and address the feasibility of all alternative measures which would reduce the risk to the blufftop structures and provide reasonable use of the property for the life of the existing home and any seawall, but would avoid further alteration of the natural landform of the public beach or coastal bluffs,. The condition also requires acknowledgment that any future redevelopment on the lots will not rely on the subject seawall to establish geological stability or protection from hazards. Other conditions involve the timing of construction, the appearance of the seawall, approval from other agencies and submission of final plans eliminating the reconstruction of a portion of the seawall, the mid-bluff wall and private access stairway.

Standard of Review: The City of Encinitas has a certified LCP and the proposed development will occur within the City's permit jurisdiction. However, because the

proposed development represents an amendment to a previously approved coastal development permit issued by Commission, the Commission has jurisdiction over the subject development. In this case, the standard of review is the certified Encinitas LCP and the public access and recreation policies of Chapter 3 of the Coastal Act.

Substantive File Documents: Certified City of Encinitas Local Coastal Program (LCP); "Geotechnical Basis of Design, 1500 and 1520 Neptune Avenue" by TerraCosta Consulting Group dated 11/14/05; Letter from Jennifer Lynch dated April 27, 2009 ;"Landslide Hazards in the Encinitas Quadrangle, San Diego County, California", Open File Report, dated 1986 by the California Division of Mines and Geology; Emergency Permit Nos. 6-00-171-G/Brown, Sonnie, 6-01-005-G/Okun, 6-01-040-G/Okun, 6-01-041/Sorich, 6-01-42-G/Brown, Sonnie and 6-01-62-G/Sorich; CDP Nos. 6-93-181/Steinberg, 6-81-205/Lynch, 6-88-464/Lynch, Frick, 6-92-212/Wood, 6-92-82/Victor, 6-89-297-G/Englekirk, 6-89-136-G/Adams, 6-85-396/Swift, 6-00-009/Ash, Bourgault, Mahoney, 6-02-84/Scism, 6-02-02/Gregg, Santina, 6-03-33/Surfsong, 6-04-83/Johnson, Cumming, 6-07-134/Brehmer, Caccavo, 6-08-122/Winkler.

I. PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

MOTION: ***I move that the Commission approve the proposed amendment to Coastal Development Permit No. 6-88-464-A1 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

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

RESOLUTION TO APPROVE A PERMIT AMENDMENT:

The Commission hereby approves the coastal development permit amendment on the grounds that the development as amended and subject to conditions, will be in conformity with the policies of the Certified Local Coastal Plan and the public access and recreation policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit amendment complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any

significant adverse effects of the amended development on the environment, or 2) there are no feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the amended development on the environment.

II. Special Conditions.

The permit is subject to the following conditions:

1. Revised Final Plans. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit for review and written approval of the Executive Director, final plans for the project that are in substantial conformance with the submitted plans dated 11/14/08 by TerraCosta Consulting Group with the following revisions. Said plans shall first be approved by the City of Encinitas and shall be revised as follows:

a. Reconstruction of the seawall below 1520 Neptune Avenue, reconstruction of the mid-bluff wall below 1500 and 1520 Neptune Avenue and reconstruction of the private access stairway shall be deleted from the plans.

b. Inclusion of sufficient detail regarding any construction techniques or structures necessary to assure worker safety during construction of the seawall.

c. Any existing permanent irrigation system located on the bluff top site(s) shall be removed or capped.

d. All runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street.

e. Inclusion of sufficient detail regarding the construction method and technology utilized for constructing the seawall so as to demonstrate that the design will gradually blend into the adjacent natural bluff. The north side of the seawall shall be designed and constructed to minimize the erosive effects of the approved seawall on the adjacent bluffs.

f. Inclusion of sufficient detail regarding the construction method and technology utilized for texturing and coloring the seawall to confirm, and be of sufficient detail to verify, that the seawall and return wall's color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the color of the fill material.

g. Existing accessory improvements (i.e., decks, patios, walls, windscreens, etc.) located in the geologic setback area on the site(s) shall be detailed and drawn to scale on the final approved site plan and shall include measurements of the distance between the accessory improvements and the bluff edge (as defined by Section 13577 of the California Code of Regulations) taken at 3 or more locations. The locations for these measurements shall be identified through

permanent markers, benchmarks, survey position, written description, or other method that enables accurate determination of the location of structures on the site. Any existing accessory structures located within 5 ft. of the bluff edge, if removed, shall not be replaced in a location closer than 5 feet landward of the natural bluff edge. Any new Plexiglas or other glass wall shall be non-clear, tinted, frosted or incorporate other elements to inhibit bird strikes.

The permittees shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. Mitigation for Impacts to Sand Supply. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of $22,693.00 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing the total amount of sand to replace the sand and beach area that will be lost due to the impacts of the proposed protective structures. All interest earned by the account shall be payable to the account for the purposes stated below.

The developed mitigation plan covers impacts only through the identified 30-year design life of the seawall. No later than 29 years after the issuance of this permit, the permittees or their successors in interest shall apply for and obtain an amendment to this permit that either requires the removal of the seawall within its initial design life or requires mitigation for the effects of the seawall on shoreline sand supply and, if applicable, public access and recreational use for the expected life of the seawall beyond the initial 30-year design life. The length of time proposed for retention of the seawall shall correspond to and not exceed the remaining life of the subject blufftop structures. If, within the initial design life of the seawall, the permittees or their successors in interest obtain a coastal development permit or an amendment to this permit to enlarge or reconstruct the seawall or perform repair work that extends the expected life of the seawall, the permittees shall provide mitigation for the effects of the seawall on shoreline sand supply and, if applicable, public access and recreational use for the expected life of the seawall beyond the initial 30-year design life.

The purpose of the account shall be to establish a beach sand replenishment fund to aid SANDAG, or a Commission-approved alternate entity, in the restoration of the beaches within San Diego County. The funds shall be used solely to implement projects which provide sand to the region's beaches, not to fund operations, maintenance or planning studies. The funds shall be released only upon approval of an appropriate project by the Executive Director of the Coastal Commission. The funds shall be released as provided for in a MOA between SANDAG, or a Commission-approved alternate entity, and the Commission, setting forth terms and conditions to assure that the in-lieu fee will be expended in the manner intended by the Commission. If the MOA is terminated, the Commission may appoint an alternative entity to administer the fund.

3. Monitoring Program. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit to the Executive Director for review and written approval, a monitoring program prepared by a licensed civil engineer or geotechnical engineer to monitor the performance of the seawall which requires the following:

a. An annual evaluation of the condition and performance of the seawall addressing whether any significant weathering or damage has occurred that would adversely impact the future performance of the structures. This evaluation shall include an assessment of the color and texture of the seawall comparing the appearance of the structure to the surrounding native bluffs.

b. Annual measurements of any differential retreat between the natural bluff face and the seawall face, at the north and south ends of the seawall and at 20-foot intervals (maximum) along the top of the seawall face/bluff face intersection. The program shall describe the method by which such measurements shall be taken.

c. Provisions for submittal of a report to the Executive Director of the Coastal Commission by May 1 of each year (beginning the first year after construction of the project is completed) for a period of three years and then, each third year following the last the annual report, for the life of the approved seawall. However, reports shall be submitted in the Spring immediately following either:

    1. An "El Niño" storm event – comparable to or greater than a 20-year storm.

    2. An earthquake of magnitude 5.5 or greater with an epicenter in San Diego County.

    Thus, reports may be submitted more frequently depending on the occurrence of the above events in any given year.

d. Each report shall be prepared by a licensed civil, geotechnical engineer or geologist. The report shall contain the measurements and evaluation required in sections a, and b above. The report shall also summarize all measurements and analyze trends such as erosion of the bluffs or changes in sea level and the stability of the overall bluff face, including the upper bluff area, and the impact of the seawall on the bluffs to either side of the walls. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the project.

e. An agreement that the permittees shall apply for a coastal development permit within 90 days of submission of the report required in subsection c. above for any necessary maintenance, repair, changes or modifications to the project recommended by the report that require a coastal development permit.

The permittees shall undertake monitoring in accordance with the approved monitoring program. Any proposed changes to the approved monitoring program shall be reported to the Executive Director. No changes to the monitoring program shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. Storm Design/Certified Plans. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit certification by a registered civil engineer that the proposed shoreline protective device has been designed to withstand storms comparable to the winter storms of 1982-83.

In addition, **within 60 days following construction**, the permittees shall submit certification by a registered civil engineer, acceptable to the Executive Director, verifying the seawall has been constructed in conformance with the approved plans for the project.

5. Future Response to Erosion. If in the future the permittees seek a coastal development permit to construct additional bluff or shoreline protective devices, the permittees shall be required to include in the permit application information concerning alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, public access and recreation and shoreline processes. Alternatives shall include but not be limited to: relocation of all or portions of the principal structure that are threatened, structural underpinning, and other remedial measures capable of protecting the principal residence and allowing reasonable use of the property, without constructing additional bluff or shoreline stabilization devices. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission or the applicable certified local government to evaluate the feasibility of each alternative, and whether each alternative is capable of protecting the existing principal structure for the remainder of its economic life. No additional bluff or shoreline protective devices shall be constructed on the adjacent bluff face above the approved seawall or on the beach in front of the proposed seawall unless the alternatives required above are demonstrated to be infeasible. No shoreline protective devices shall be constructed in order to protect ancillary improvements (patios, decks, fences, landscaping, etc.) located between the principal residential structures and the ocean. Any future redevelopment on the lots shall not rely on the subject shoreline protective devices to establish geological stability or protection from hazards.

6. Future Maintenance. The permittees shall maintain the permitted seawall in its approved state. Maintenance of the seawall shall include maintaining the color, texture and integrity. Any change in the design of the project or future additions/reinforcement of the seawall beyond exempt maintenance as defined in Section 13252 of the California Code of Regulations to restore the structure to its original condition as approved herein, will require a coastal development permit. **However, in all cases, if after inspection, it is apparent that repair and maintenance is necessary, including maintenance of the color of the structures to ensure a continued match with the surrounding native bluffs, the permittees shall contact the Executive Director to determine whether a**

coastal development permit or an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit or permit amendment for the required maintenance. In addition, the permittees shall also be responsible for the removal of debris resulting from failure of, or damage to, the shoreline protective devices (seawall and mid-bluff wall) and stairs in the future as well as the removal of any construction debris (including non-soil backfill material) that reaches the beach from any structure landward of the seawall.

7. Other Permits. **PRIOR TO COMMENCEMENT OF CONSTRUCTION**, the applicants shall provide to the Executive Director copies of all other required local, state or federal discretionary permits, except for the State Lands Commission (see Special Condition #8) for the development authorized by CDP #6-088-464-A1. The applicants shall inform the Executive Director of any changes to the project required by other local, state or federal agencies. Such changes shall not be incorporated into the project until the applicants obtain a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.

8. State Lands Commission Approval. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit to the Executive Director for review and written approval, a written determination from the State Lands Commission that:

a) No state lands are involved in the development; or

b) State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or

c) State lands may be involved in the development, but pending a final determination of state lands involvement, an agreement has been made by the applicant with the State Lands Commission for the project to proceed without prejudice to the determination.

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

10. Assumption of Risk, Waiver of Liability and Indemnity Agreement. By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards from erosion and coastal bluff collapse; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands,

damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

11. Other Special Conditions of the City of Encinitas Permit #03-035 MUPMOD. Except as provided by this coastal development permit, this permit has no effect on conditions imposed by the City of Encinitas pursuant to an authority other than the Coastal Act.

12. Prior Conditions of Approval. All prior conditions of approval of coastal development permit #6-88-464, not specifically revised herein, shall remain in full force and effect.

13. Best Management Practices. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit for review and written approval of the Executive Director, a Best Management Plan that effectively assures no shotcrete or other construction byproduct will be allowed onto the sandy beach and/or allowed to enter into coastal waters. The Plan shall apply to both concrete pouring/pumping activities as well as shotcrete/concrete application activities. During shotcrete/concrete application specifically, the Plan shall at a minimum provide for all shotcrete/concrete to be contained through the use of tarps or similar barriers that completely enclose the application area and that prevent shotcrete/concrete contact with beach sands and/or coastal waters. All shotcrete and other construction byproduct shall be properly collected and disposed of off-site.

The applicant shall undertake the development in accordance with the approved Plan. Any proposed changes to the approved Plan shall be reported to the Executive Director. No changes to the Plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

14. Storage and Staging Areas/Access Corridors. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicants shall submit to the Executive Director for review and written approval, final plans approved by the City of Encinitas indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that:

a. No overnight storage of equipment or materials shall occur on sandy beach or public parking spaces. During the demolition and construction stages of the project, the permittees shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seawall. Construction equipment shall not be washed on the beach or public parking lots or access roads.

b. Construction access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.

c. No work shall occur on the beach on weekends, holidays or between Memorial Day weekend and Labor Day of any year.

d. The applicant shall submit evidence that the approved plans/notes have been incorporated into construction bid documents. The staging site shall be removed and/or restored immediately following completion of the development.

The permittees shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

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

16. Condition Compliance. **WITHIN 120 DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT AMENDMENT**, or within such additional time as the Executive Director may grant for good cause, the applicants shall satisfy all requirements specified in the conditions of the subject permit that the applicants are 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.

III. Findings and Declarations.

The Commission finds and declares as follows:

1. Project History/Amendment Description. The proposed amendment request involves demolition of an existing seawall, construction of a new seawall and substantial renovation to an existing mid-bluff retaining wall and private access stairway below two residential blufftop lots. The residence on the north subject lot consists of an approximately 4,140 sq. ft. home that lies between 28 and 32 ft. from the edge of the bluff. The duplex located on the southern lot lies approximately 28 ft. from the bluff edge. The applicants propose to: 1) demolish the existing 100 ft.-long seawall which currently consists of eighteen, 20 ft.-long telephone poles sunk into the ground with railroad ties installed between the poles with each pole anchored into the bluff by a single 20 ft.-long steel cable. The applicants also propose to remove 4 ft.-diameter concrete footings around each telephone pole which were installed in 2001 without required permits; 2) construct 100 ft.-long, 2 ½ ft.-wide tiedback concrete seawall in same location as existing permitted seawall; 3) demolish portions of the existing approximately 100 ft.-long mid-bluff retaining wall which currently consists of seventeen, 30 ft.-long telephone poles sunk approximately 10 feet into the bluff face with railroad ties installed between the poles and each pole anchored into the bluff with 20 ft.-long steel cables. Most of the existing mid-bluff wall would remain but would be covered-up by a new shotcrete covered tiedback wall that is also proposed to be naturally colored, textured and landscaped; 4) remove lower half of existing private access stairway from the face of the bluff and reconstruct demolished portions of private access stairway following construction of seawall and mid-bluff retaining wall; and 5) grade and recompact the soil between the lower seawall and the mid-bluff wall to facilitate landscaping within that area.

The residential structure located on the southern blufftop lot was constructed prior to the Coastal Act. In 1982, the Commission approved reconstruction and an addition to the residence in order to convert it into a duplex (Ref. CDP #6-81-205/Lynch). In 1989, the Commission approved after-the-fact construction of the above-described seawall, mid-bluff retaining wall and private access stairway. In addition to the after-the-fact developments, the Commission at the same time approved the subdivision of the lot at the top of the bluff into two lots and the construction of a new residence on the new northern lot. The Commission required that the new residence install 22 ft.-long caissons below the home to provide stability in the event the approved seawall and mid-bluff wall should fail (Ref. CDP #6-88-464/Lynch, Frick). Because the area seaward of the seawall may have been on private property, the Commission also required the applicants to offer a lateral public access dedication seaward of the seawall in order to protect potential prescriptive rights that may have existed. The lateral access dedication was subsequently recorded and, in 2008, the organization “Access for All” formally accepted the lateral access responsibilities. The proposed seawall will be constructed in the same location as the existing seawall and will not extend any further seaward than the existing seawall. Therefore, public access seaward of the proposed seawall will remain protected for public use by the previously recorded access dedication which will remain in effect.

The proposed development lies inland of the mean high tide line below two existing residential structures. The proposed development lies within the City of Encinitas’

coastal permit jurisdiction. However, because the project involves a material amendment to the original permit issued by the Commission, the Commission has permit review authority over the proposed development. The standard of review for the project is therefore the certified LCP and the public access and recreation policies in Chapter 3 of the Coastal Act.

2. Geologic Conditions and Hazards. The following Local Coastal Program polices relate to the proposed development:

Resource Management (RM) Policy 8.5 of the certified Encinitas LUP states:

> The City will encourage the retention of the coastal bluffs in their natural state to minimize the geologic hazard and as a scenic resource. Construction of structures for bluff protection shall only be permitted when an existing principal structure is endangered and no other means of protection of that structure is possible. Only shoreline/bluff structures that will not further endanger adjacent properties shall be permitted as further defined by City coastal bluff regulations. Shoreline protective works, when approved, shall be aligned to minimize encroachment onto sandy beaches. Beach materials shall not be used as backfill material where retaining structures are approved. Approved devices protecting against marine waves shall be designed relative to a design wave, at least equal to 1982-83 winter storm waves.

In addition, RM Policy 8.6 states that:

> The City will encourage measures which would replenish sandy beaches in order to protect coastal bluffs from wave action and maintain beach recreational resources. The City shall consider the needs of surf-related recreational activities prior to implementation of such measures.

In addition RM Policy 8.7 states that:

> The City will establish, as primary objectives, the preservation of natural beaches and visual quality as guides to the establishment of shoreline structures. All fishing piers, new boat launch ramps, and shoreline structures along the seaward shoreline of Encinitas will be discouraged.

Public Safety (PS) Policy 1.7 of the certified LUP states, in part, that:

> The City shall develop and adopt a comprehensive plan, based on the Beach Bluff Erosion Technical Report (prepared by Zeiser Kling Consultants Inc., dated January 24, 1994), to address the coastal bluff recession and shoreline erosion problems in the City. . . .In addition, until such a comprehensive plan is approved by the City of Encinitas and the Coastal Commission as an amendment to the LCP, the City will not permit the construction of seawalls, revetments, breakwaters, cribbing, or similar structures for coastal erosion except under

> circumstances where an existing principal structure is imminently threatened and, based on a thorough alternatives analysis, an emergency coastal development permit is issued, and all emergency measures authorized by the emergency coastal development permit are designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

Section 30.34.020(B)(2)(9) of the certified Implementation Plan (IP) includes similar language:

> . . . In addition, until such a comprehensive plan is approved by the City of Encinitas and the Coastal Commission as an amendment to the LCP, the City shall not permit the construction of seawalls, revetments, breakwaters, cribbing, or similar structures for coastal erosion except under circumstances where an existing principal structure is imminently threatened and, based on a thorough alternative analysis, an emergency permit is issued and emergency measures authorized by the emergency coastal development permit are designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

In addition, Section 30.34.020(C)(2)(b) states the following:

> When a preemptive measure is proposed, the following findings shall be made if the authorized agency determines to grant approval:
>
> (1) The proposed measure must be demonstrated in the soils and geotechnical report to be substantially effective for the intended purpose of bluff erosion/failure protection, within the specific setting of the development site's coastal bluffs. The report must analyze specific site proposed for development.
>
> (2) The proposed measure must be necessary for the protection of a principal structure on the blufftop to which there is a demonstrated threat as substantiated by the site specific geotechnical report.
>
> (3) The proposed measure will not directly or indirectly cause, promote or encourage bluff erosion failure, either on site or for an adjacent property, within the site-specific setting as demonstrated in the soils and geotechnical report. Protection devices at the bluff base shall be designed so that additional bluff erosion will not occur at the ends because of the device.
>
> [. . .]

In addition, Section 30.34.020 (D)(8) of the City's Certified IP requires the submission of a geotechnical report for the project site that includes, among other things:

> Alternatives to the project design. Project alternatives shall include, but not be limited to, no project, relocation/removal of threatened portions of or the entire home and beach nourishment.

The Certified IP also requires that shoreline protective structures be designed to be protective of natural scenic qualities of the bluffs and not cause a significant alteration of the bluff face. In particular, Section 30.34.020(B)(8) states:

> The design and exterior appearance of buildings and other structures visible from public vantage points shall be compatible with the scale and character of the surrounding development and protective of the natural scenic qualities of the bluffs.

and Section 30.34.020.C.2.b.(4) states:

> The proposed measure in design and appearance must be found to be visually compatible with the character of the surrounding area; where feasible, to restore and enhance visual quality in visually degraded areas; and not cause a significant alteration of the natural character of the bluff face.

In addition, the LCP includes policies which require that new development on the blufftop be designed to avoid the need for shoreline protection over its lifetime. Section 30.34.020(D) of the certified Implementation Plan (IP) states in part:

> APPLICATION SUBMITTAL REQUIREMENTS. Each application to the City for a permit or development approval for property under the Coastal Bluff Overlay Zone shall be accompanied by a soils report, and either a geotechnical review or geotechnical report as specified in paragraph C "Development Processing and Approval" above. Each review/report shall be prepared by a certified engineering geologist who has been pre-qualified as knowledgeable in City standards, coastal engineering and engineering geology. <u>The review/report shall certify that the development proposed will have no adverse affect on the stability of the bluff, will not endanger life or property, and that any proposed structure or facility is expected to be reasonably safe from failure and erosion over its lifetime without having to propose any shore or bluff stabilization to protect the structure in the future.</u> . . [emphasis added]

The proposed development involves the removal of an existing and permitted 100 ft.-long tied-back timber pole and wood lagging system that lies at the toe of the bluff and construction of a 100 ft.-long tiedback concrete seawall in its place. (The applicants' geotechnical report identifies that the existing timber pole and wood lagging seawall and mid-bluff wall are essentially erosion control structures, not bluff retention devices.) In addition, the project involves removal of all unpermitted 4 ft.-diameter concrete footings that extend seaward of the existing permitted seawall. The new seawall will not extend any further seaward than the permitted sections of the existing seawall. In addition, the applicants propose to remove portions of the mid-bluff timber pole and wood lagging wall and to cover remaining sections of the wall with tiedback shotcrete, effectively installing a new mid-bluff wall to cover an existing and permitted timber pole and wood lagging wall (telephone poles and railroad ties). In order to perform the above-described construction, the applicants will need to remove the lower half of a private beach access stairway which they propose to reconstruct following construction of the lower and mid-bluff walls. Finally, the applicants propose to recompact the soil between the lower seawall and mid-bluff wall in order to facilitate landscaping.

Resource Management (RM) Policy 8.5 acknowledges that shoreline protective devices alter natural shoreline processes. Thus, such devices are required to be approved only when necessary to protect existing structures in danger from erosion and, pursuant to RM Policy 8.6 of the LUP and Section 30.34.020(B)(2)(9) of the IP, when designed to eliminate or mitigate adverse impacts on shoreline sand supply. The LCP does not require approval of shoreline altering devices to protect vacant land or in connection with construction of new development. A shoreline protective device proposed in those situations is likely to be inconsistent with various other LCP policies.

In addition, the RM Policy 8.5 only requires approval of shoreline protection when an existing principal structure is endangered and no other means of protection of that structure is possible. The Commission must always consider the specifics of each individual project but has found in many instances that accessory structures such as patios, decks and stairways are not required to be protected or can be protected from erosion by relocation or other means that do not involve shoreline protection. The Commission has historically permitted at grade structures within the geologic setback area, recognizing they are expendable and capable of being removed rather than requiring a protective device that alters natural landforms along bluffs and cliffs.

In addition, RM Policy 8.5 and Section 30.34.020(B)(2)(9) only allow new shoreline protective devices following an authorized emergency permit. In this case, no emergency permit has been issued.

The proposed development is located at the base of a coastal bluff in the City of Encinitas that currently contains a seawall on the south side of the subject site, with the bluffs to the north remaining in its natural state. Continual bluff retreat and the formation and collapse of seacaves have been documented in northern San Diego County, including the Cities of Solana Beach and Encinitas. Bluffs in this area are subject to a variety of erosive forces and conditions (e.g., wave action, reduction in beach sand, landslides). As a result of these erosive forces, the bluffs and blufftop lots in the Encinitas area are considered a hazard area. Furthermore, in 1986 the Division of Mines and Geology mapped the entire Encinitas shoreline as an area susceptible to landslides, i.e., mapped as either “Generally Susceptible” or “Most Susceptible Areas” for landslide susceptibility (ref. Open File Report, “Landslide Hazards in the Encinitas Quadrangle, San Diego County, California”, dated 1986). Several properties approximately ¾ miles south of the subject site have experienced significant landslides that have threatened residences at the top of the bluff and resulted in numerous Executive Director approved emergency permits for seawalls and upper bluff protection devices (ref. Emergency Permit Nos. 6-00-171-G/Brown, Sonnie, 6-01-005-G/Okun, 6-01-040-G/Okun, 6-01-041/Sorich, 6-01-42-G/Brown, Sonnie and 6-01-62-G/Sorich). In addition, documentation has been presented in past Commission actions concerning the unstable nature of the bluffs in these communities and nearby communities (ref. CDP Nos. 6-93-181/Steinberg, 6-92-212/Wood, 6-92-82/Victor, 6-89-297-G/Englekirk, 6-89-136-G/Adams, and 6-85-396/Swift, 6-00-009/Ash, Bourgault, Mahoney). Bluff retreat along this portion of the Encinitas coast has been a recognized coastal process for many years.

Pursuant to Section 30.34.020(D) of the certified Implementation Plan, in approving new development on blufftop lots, structures are required to be setback an appropriate distance (based on a site specific geotechnical report) from the edge of the bluff that will allow for the natural process of erosion without triggering the need for a seawall. This "geologic setback area" is so designated to accommodate the natural erosion of the bluff. In other words, on blufftop lots, residences are set back from the bluff edge to allow the natural process of erosion to occur on the site without causing the residence to be threatened. Thus, at some future point when evidence of some erosion of the setback area is identified (even undercutting and subsequent block failures), this does not necessarily confirm the need for bluff or shore protection to protect the residence.

As previously described, the existing erosion control walls and stairway below 1500 and 1520 Neptune Avenue were constructed sometime in the late 1980's without permits. In 1989, the Commission approved an after-the-fact permit for the structures after determining that they could not be removed without threatening the duplex at the top of the bluff (Ref. Revised Findings Staff Report #6-88-464 attached as Exhibit 6). Special Condition #7 of CDP No. 6-88-464 required that the applicants be responsible for maintenance of the permitted structures:

> Maintenance Activities/Future Alterations. The property owner shall also be responsible for maintenance of the permitted shoreline protective and upper bluff stabilization devices. Any change in the design of the revetment or future additions/reinforcements seaward of the device will require a coastal development permit. If after inspection, it is apparent repair or maintenance is necessary, the applicant should contact the Commission office to determine whether permits are necessary. The applicant shall also be responsible for the removal of debris that is deposited on the beach or in the water as a result of the failure of the shoreline protective device.

In 2001, the applicants' representative identified that the property owners installed concrete footings around the base of the seawall's telephone pole timbers without necessary permits. The representative asserts that the unpermitted work:

> . . . was triggered by the supporting soldier timbers' decay causing pole fracturing, rotting and splintering. Concerns of a sudden shift within a period of two weeks and the potential of the imminent collapse of the existing structures required immediate repairs. The fractures were a sudden, unexpected occurrence, which demanded immediate action to prevent or mitigate loss or damage to life and property. (Ref. Letter from Jennifer Lynch dated April 27, 2009)

Although required by Special Condition #7 of CDP #6-88-464 to contact the Commission prior to any maintenance or repair of the approved structures, the applicants failed to do so until after the Commission's enforcement division had issued a "Stop Work Notice" to the subject property owners on March 29, 2002. In July of 2002, the property owners applied for a coastal development permit to authorize the retention of the unpermitted concrete footings that extended approximately 2 feet seaward of the existing permitted

seawall (Ref. CDP #6-02-113/Frick, Lynch). This application was subsequently withdrawn by the applicants following redesign of the project so as to remove the concrete footings and damaged seawall and construct a new seawall in its place along with the request to construct a new mid-bluff wall over the face of the existing timber mid-bluff wall and to reconstruct the private access stairway. Subsequently the applicants submitted the subject permit amendment application.

In documenting the need for the proposed development, the applicants' geotechnical engineer has identified that the existing soldier pile and timber walls are in disrepair and provide limited protection:

> Both the mid-bluff and the seawall show indications of seaward movement and deterioration of the timber and steel members. Although not designed as retaining structures, erosion control being their primary purpose, both walls contribute some capacity for retention, albeit limited, despite their present condition. Both of the walls are in need of repair to avert a much larger failure or series of smaller progressive failures that could eventually undermine the bluff-top structures. The northern four seawall concrete cylinders have been undermined by erosion and appear to offer little in protection of the timber soldier beams. Loss of the lower seawall would allow flanking and eventually undermine both the existing mid-bluff and the adjacent seawall on the south. Both of these walls are in urgent need of repair to preclude additional bluff failures. (Ref. "Geotechnical Basis of Design, 1500 and 1520 Neptune Avenue" by TerraCosta Consulting Group dated 11/14/05).

While the applicants describe the proposed developments as repair and maintenance, the Commission's coastal engineer describes that the maintenance is so extensive it will essentially result in a new seawall. In the case of the seawall, the applicants are removing the existing timber seawall in its entirety and constructing a new tiedback concrete seawall in its place. The seawall will be changed from a timber wall to a concrete wall and all the materials for the repair and maintenance will be new. In the case of the mid-bluff timber wall, the applicants are generally encasing the existing wall with a tiedback concrete wall. In addition, the applicants' geotechnical engineer has identified that while portions of the mid bluff wall would remain, "those portions would not be relied upon for soil retention after completion of the project."

In 1989, the Commission approved the existing soldier pile/timber seawall and mid-bluff wall and found the development consistent with the Coastal Act. Subsequently, the Commission approved the City of Encinitas' LCP which the City has been implementing since 1995 meaning that the proposed new structures, which all lie within the City of Encinitas' coastal permit jurisdiction, are subject to the requirements of the certified LCP.

As cited above, Resource Management Policy 8.5 requires that bluff protection devices shall only be permitted when existing principal structures are endangered and there is no other means of protecting the structures. In this case, the applicants have submitted a detailed geotechnical report which, according to the Commission's Technical Services Division, demonstrates that the existing structure at 1500 Neptune Avenue is threatened

by erosion but not that the residence at 1520 Neptune Avenue is threatened (Ref. "Geotechnical Basis of Design, 1500 and 1520 Neptune Avenue" by TerraCosta Consulting Group dated 11/14/05).

While the existing permitted soldier pile/timber walls provide some level of erosion control, the applicants' geotechnical engineer prepared a slope stability analysis that assumes the existing shoreline protective structures are not providing any quantifiable stability to the slope. The existing residences are set back from the bluff edge approximately 28 feet, and the slope stability analysis performed by the applicants' engineer indicates that further collapse of the upper bluff would threaten the residence located at 1500 Neptune Avenue. The factor of safety against sliding along the most likely slide planes were estimated to be at approximately 1.06 for the home at 1500 Neptune Avenue and 1.29 for the home at 1520 Neptune. (The factor of safety is an indicator of slope stability where a value of 1.5 is the industry-standard value for new development. In theory, failure should occur when the factor of safety drops to 1.0, and no slope should have a factor of safety less than 1.0.) Based on this information, the Commission's coastal engineer identifies that the residence at 1500 Neptune Avenue, with a factor of stability against sliding of approximately 1.06, is currently threatened by erosion such that shoreline protection is required.

However, the Commission's coastal engineer has concluded that with a factor of stability against sliding of approximately 1.29, the residence at 1520 Neptune Avenue is not currently threatened by erosion such that shoreline protection is required. In addition, in approving the residence at 1520 Neptune Avenue in 1989, along with after-the-fact approval of the soldier pile/timber walls, the Commission required that the applicant install a deepened foundation system of piers 22 feet below grade to assure that the new home would remain stable "even if the in-place wall system fails". The Commission specifically determined that only with the proposed setback from the bluff edge of approximately 30 feet and the installation of the 22 foot-long below grade pier foundation, could the approval of the new residence at 1520 Neptune Avenue be consistent with Section 30253 of the Coastal Act which requires new development not require the construction of bluff retention devices (Ref. Revised Findings Staff Report #6-88-464 attached as Exhibit 6). The modified foundation design was also required "to insure the ultimate stability of the structure even if the in-place wall system fails." Therefore, based on the applicants' slope stability analysis and the existing 22 foot-long below grade pier foundation, the applicants have not demonstrated that the residence at 1520 Neptune Avenue either is currently threatened by erosion or is in need of shoreline protection (including the existing shoreline protective devices) at this time. However, the applicants have demonstrated that the residence at 1500 Neptune Avenue is threatened by erosion and is in need of some level of protection. Therefore, at this time, the only portion of the proposed reconstruction that can be found consistent with the certified LCP is some level of shoreline protection for the residence at 1500 Neptune Avenue.

Although the applicants' geotechnical report only documents that one of the two homes is currently threatened to the degree that shoreline protection is required, the applicants' geotechnical engineer asserts that both residences require all elements of the proposed

development in order to "satisfy the City of Encinitas Municipal Code requirement of a minimum factor of safety of 1.5". In addition, the applicants' geotechnical report identifies that:

"[r]ehabilitation of both the mid-bluff and the seawall will preserve the overall stability of the bluff, resulting in both a computed deep-seated (global) and superficial factor of safety that exceeds the minimum requirements of the City of Encinitas Municipal Code, i.e., a minimum of 1.5."
(Ref. Page 13-14, "Geotechnical Basis of Design, 1500 and 1520 Neptune Avenue" by TerraCosta Consulting Group dated 11/14/05).

However, the application of the 1.5 factor of safety is the standard for siting of new development at the top of the bluff, not the standard for installing new or additional shoreline protection. In approving shoreline protection that is necessary to protect an existing threatened structure, the LCP requires that all alternatives be thoroughly examined so as to minimize the adverse impacts of the structures on geologic and visual resources. The LCP limits the protection to that which is necessary to protect the threatened residence. It does not require that existing development be afforded protection to assure a 1.5 factor of safety against sliding.

The applicants' geotechnical report identifies that removal of the existing seawall and construction of a new seawall in its place (without repairs to the mid-bluff wall) will increase the factor of safety against sliding below 1500 Neptune Avenue to approximately 1.26, which according the Commission's Technical Services Division, will greatly improve slope stability at the site. According to the Commission's Technical Services Division, removing the existing seawall and constructing a new seawall below 1500 Neptune Avenue will provide adequate erosion protection, consistent with the requirements of the LCP, although sometime in the future (years, not months), additional shoreline or slope protection may be required. However, based on the information provided in the applicants' geotechnical report, the only shoreline protection needed at this time is a seawall at the base of the bluff below 1500 Neptune Avenue.

At the time the Commission approved the after-the-fact seawall and mid-bluff wall in 1989, it was not known if the shoreline protective devices were necessary to protect the existing duplex or the proposed home. For the 1989 hearing, the applicants provided a geotechnical analysis that indicated the walls could not be removed without destabilizing the bluffs and increasing the danger to the blufftop lots. The Commission determined in 1989 that the shoreline devices could not be removed and that no alternatives to the shoreline devices were available. The Commission also required that the foundation of the structure at 1520 Neptune Avenue be modified to protect the structure even if the existing seawall system were to fail sometime in the future. However, the applicants' current geotechnical report documents several alternatives that now exist, including the removal of the previously approved soldier-pile/timber seawall, construction of a new seawall and the covering of the mid-bluff wall with a colored and textured mid-bluff wall. In addition, the applicants' geotechnical report documents that only one of the two residential structures is currently threatened so as to require protection consistent with

LCP. In spite of that documentation, the applicants are requesting an amendment to the previously authorized permit for the seawall and mid-bluff wall to construct a level of protection for the homes that exceeds what is necessary to protect the existing threatened residential structure.

In addition, the proposed development exceeds the type of repair and maintenance that was contemplated in Special Condition #7 of CDP #6-88-464 and instead represents a request to construct a new 100 ft.-long seawall and 100 ft.-long mid-bluff wall. The determination that the proposed development should be considered new is based on the proposed wall design changing from timber to concrete and the proposed use of all new materials in the proposed construction. Since the only documented need at this time is a seawall at the base of the bluff below 1500 Neptune Avenue, that is the only portion of the proposed development that can be found to be consistent with the requirements of the LCP. Therefore, Special Condition #1 has been attached which requires the applicant to submit final plans that eliminate the proposed new mid-bluff wall in its entirety and limits the size of the seawall to approximately 50 feet in length so as to protect only the residence at 1500 Neptune Avenue. The actual length of the wall shall be the minimum necessary to protect 1500 Neptune Avenue from erosion, to provide slope stability and to minimize adverse impacts to the adjacent properties. Documentation for the final wall length shall accompany the final plans, but the overall wall length shall be limited to approximately 50 feet. Special Condition #1 also requires that the northern end of the new seawall be designed to mitigate any end effects of the wall to the adjacent natural bluffs.

In addition, as previously described above, until the City has an approved Comprehensive Plan to address coastal bluff recession and shoreline erosion problems in the City, Public Safety Policy 1.7 of the LUP and Section 30.34.020(B)(2)(9) of the certified Implementation Plan (IP) prohibit shoreline protective devices unless the existing principle structure is "imminently threatened" and an emergency permit is issued. Although the applicant has demonstrated the existing residential duplex at 1500 Neptune is threatened by erosion such that a seawall is required, an emergency permit has not first been authorized, as required by the LCP, before a new seawall can be approved. At the time the Commission approved the City of Encinitas LCP in 1994, it was anticipated that the City would develop and seek Commission approval for a Comprehensive Plan that addressed shoreline management within a few short years. Unfortunately, at this time it is uncertain when the plan will come before the Commission as an LCP amendment or when it will be scheduled for local review by the Encinitas City Council. Again, until the Comprehensive Plan is approved, the LCP prohibits the City and, thereby the Commission, from issuing coastal development permits for shoreline protective structures unless and until an emergency permit is authorized.

Although the LCP prohibits new shoreline protective devices unless an emergency permit has first been issued, the proposed development represents a replacement of an existing permitted seawall. In this case, an emergency permit is not necessary because the proposed development represents a significant repair/replacement to an existing permitted seawall, not an entirely new shoreline device or repair to an unpermitted

structure. Under these specific circumstances, the Commission finds that the LCP requirement of an emergency permit is not applicable. In addition, the resulting approximately 50 ft.-long colored and textured seawall will have fewer impacts on coastal resources than allowing the existing timber seawall to remain and/or be repaired.

Thus, given the significant bluff and structural failures that have occurred at the subject site over recent years, and the low factor of safety on the subject bluffs below the residence at 1500 Neptune Avenue, substantial evidence has been provided to document that the existing primary blufftop structure at 1500 Neptune Avenue is in danger from erosion. Under the policies of the LCP and Chapter 3 policies of the Coastal Act for projects between the sea and first coastal roadway, if shoreline protective devices are necessary, the project must still eliminate or mitigate adverse effects on shoreline sand supply and minimize adverse effects on public access, recreation, and the visual quality of the shoreline.

Sand Supply/In Lieu Mitigation Fee

Although construction of a seawall is required to protect the existing principal structure (duplex) at 1500 Neptune Avenue, PS Policy 1.7 of the LUP and Section 30.34.020(B)(2)(9) of the certified Implementation Plan (IP) requires that the shoreline protection be designed to eliminate or mitigate adverse impacts on local shoreline sand supply. There are a number of adverse impacts to public resources associated with the construction of shoreline protection. The natural shoreline processes referenced in PS Policy 1.7 and Section 30.34.020(B)(2)(9) of the IP, such as the formation and retention of sandy beaches, can be significantly altered by construction of a seawall, since bluff retreat is one of several ways that beach area and beach quality sand is added to the shoreline. This retreat is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse, saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration. When a seawall is constructed on the beach at the toe of the bluff, it directly impedes these natural processes.

Some of the effects of a shoreline protective structure on the beach such as scour, end effects and modification to the beach profile are temporary or difficult to distinguish from all the other actions which modify the shoreline. Seawalls also have non-quantifiable effects to the character of the shoreline and visual quality. However, some of the effects that a structure may have on natural shoreline processes can be quantified. Three of the effects from a shoreline protective device which can be quantified are: 1) loss of the beach area on which the structure is located; 2) the long-term loss of beach which will result when the back beach location is fixed on an eroding shoreline; and 3) the amount of material which would have been supplied to the beach if the back beach or bluff were to erode naturally.

A beach is the result of both sandy material and a physical area between the water and the back beach. Thus, beach area is not simply a factor of the quantity of sandy beach material. The loss of beach material that will be a direct result of this project can be

balanced or mitigated by obtaining similar quality and quantity of sediment from outside the littoral cell and adding this sediment to the littoral cell. There are sources of beach quality sediment that can be drawn upon to obtain new sediment for the littoral cell.

The following is the typical methodology used by Commission staff to calculate the impacts to natural shoreline processes and develop the amount of fee that should be required in-lieu of actual deposition of new sand on the region's beaches. The methodology uses site-specific information provided by the applicant as well as estimates, derived from region-specific criteria, of both the loss of beach material and beach area which could occur over the life of the structure, and of the cost to purchase an equivalent amount of beach quality material and to deliver this material to beaches in the project vicinity.

The following is a description of the methodology.

Fee = (Volume of sand for mitigation) x (unit cost to buy and deliver sand)

$\mathbf{M} = \mathbf{V_t} \times \mathbf{C}$

where

M = Mitigation Fee

$\mathbf{V_t}$ = Total volume of sand required to replace losses due to the structure, through reduction in material from the bluff, reduction in nearshore area and loss of available beach area (cubic yards). Derived from calculations provided below.

C = Cost, per cubic yard of sand, of purchasing and transporting beach quality material to the project vicinity ($ per cubic yard). Derived from the average of three written estimates from sand supply companies within the project vicinity that would be capable of transporting beach quality material to the subject beach, and placing it on the beach or in the near shore area.

$\mathbf{V_t} = \mathbf{V_b} + \mathbf{V_w} + \mathbf{V_e}$

where

$\mathbf{V_b}$ = Volume of beach material that would have been supplied to the beach if natural erosion continued, based on the long-term regional bluff retreat rate, design life of the structure, percent of beach quality material in the bluff, and bluff geometry (cubic yards). This is equivalent to the

long-term reduction in the supply of bluff material to the beach resulting from the structure.

$\mathbf{V_W}$ = Volume of sand necessary to replace the beach area that would have been created by the natural landward migration of the beach profile without the seawall, based on the long-term regional bluff retreat rate, and beach and nearshore profiles (cubic yards)

$\mathbf{V_e}$ = Volume of sand necessary to replace the area of beach lost due to encroachment by the seawall; based on the seawall design and beach and nearshore profiles (cubic yards)

$$\mathbf{V_b} = (S \times W \times L/27) \times [(R\ h_S) + (\mathbf{h_u}/2 \times (R + (R_{cu} - \mathbf{R_{cs}})))]$$

where

R = Long-term regional bluff retreat rate (ft./yr.), based on historic erosion, erosion trends, aerial photographs, land surveys, or other accepted techniques. For the Solana Beach area, this regional retreat has been estimated to be 0.27 ft./year. This value may be used without further documentation. Alternative retreat rates must be documented by the applicant and should be the same as the predicted retreat rate used to estimate the need for shoreline armoring.

L = Design life of armoring without maintenance (yr.) If maintenance is proposed and extends the life of the seawall beyond the initial estimated design life, a revised fee shall be determined through the coastal development permit process.

W = Width of property to be armored (ft.)

h = Total height of armored bluff (ft.)

S = Fraction of beach quality material in the bluff material, based on analysis of bluff material to be provided by the applicant

h_S = Height of the seawall from the base to the top (ft)

h_u = Height of the unprotected upper bluff, from the top of the seawall to the crest of the bluff (ft)

R_{cu} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming no seawall were installed (ft/yr). This value can be assumed to be the same as R unless the applicant provides site-specific geotechnical information supporting a different value.

R_{cs} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming the seawall has been installed (ft/yr). This value will be assumed to be zero unless the applicant provides site-specific geotechnical information supporting a different value.

NOTE: For conditions where the upper bluff retreat will closely follow the lower bluff, this volume will approach a volume of material equal to the height of the total bluff, the width of the property and a thickness equal to the total bluff retreat that would have occurred if the seawall had not been constructed. For conditions where the upper bluff has retreated significantly and would not be expected to retreat further during the time that the seawall is in place, this volume would approach the volume of material immediately behind the seawall, with a thickness equal to the total bluff retreat that would have occurred if the seawall had not been constructed.

$\mathbf{V_W} = \mathbf{R} \times \mathbf{L} \times \mathbf{v} \times \mathbf{W}$

where

R = Long-term regional bluff retreat rate (ft./yr.), based on historic erosion, erosion trends, aerial photographs, land surveys, or other accepted techniques. For the Encinitas area, this regional retreat has been estimated to be 0.27 ft./year. This value may be used without further documentation. Alternative retreat rates must be documented by the applicant and should be the same as the predicted retreat rate used to estimate the need for shoreline armoring.

L = Design life of armoring without maintenance (yr.) If maintenance is proposed and extends the life of the seawall beyond the initial estimated design life, a revised fee shall be

determined through the coastal development permit process.

v = Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall; based on the vertical distance from the top of the beach berm to the seaward limit of reversible sediment movement (cubic yards/ft of width and ft. of retreat). The value of v is often taken to be 1 cubic yard per square foot of beach. In the report, Oceanside Littoral Cell Preliminary Sediment Budget Report" (December 1987, part of the Coast of California Storm and Tide Wave Study, Document #87-4), a value for v of 0.9 cubic yards/square foot was suggested. If a vertical distance of 40 feet is used for the range of reversible sediment movement, v would have a value of 1.5 cubic yards/square foot (40 feet x 1 foot x 1 foot / 27 cubic feet per cubic yard). These different approaches yield a range of values for v from 0.9 to 1.5 cubic yards per square foot. The value for v would be valid for a region, and would not vary from one property to the adjoining one. Until further technical information is available for a more exact value of v, any value within the range of 0.9 to 1.5 cubic yards per square foot could be used by the applicant without additional documentation. Values below or above this range would require additional technical support.

W = Width of property to be armored (ft.)

$\mathbf{V_e} = \mathbf{E} \times \mathbf{W} \times \mathbf{v}$

where

E = Encroachment by seawall, measured from the toe of the bluff or back beach (ft.)

W = Width of property to be armored (ft.)

v = Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall, as described above;

In this case, the applicant is proposing to mitigate any adverse impacts associated with the proposed seawall by participating in the Commission's in-lieu fee program that is administered by the San Diego Association of Governments (SANDAG). Relying on the

typical Commission sand fee calculations cited above, the applicant is proposing the payment of $45,385.92 for the proposed 100 foot-long seawall's associated impacts on regional sand supply.

The San Diego Association of Governments (SANDAG) has adopted the Shoreline Preservation Strategy for the San Diego region and is currently working on techniques toward its implementation. The Strategy considers a full range of shoreline management tactics, but emphasizes beach replenishment to preserve and enhance the environmental quality, recreational capacity, and property protection benefits of the region's shoreline. Funding from a variety of sources will be required to implement the beach replenishment and maintenance programs identified in the SANDAG Strategy. In San Diego County, SANDAG has agreed to administer a program which would identify projects which may be appropriate for support from the beach sand replenishment fund, through input from the Shoreline Erosion Committee which is made up of representatives from all the coastal jurisdictions in San Diego County. The Shoreline Erosion Committee is currently monitoring several large scale projects, both in and out of the coastal zone, they term "opportunistic sand projects", that will generate large quantities of beach quality material suitable for replenishing the region's beaches. The purpose of the account is to aid in the restoration of the beaches within San Diego County. One means to do this would be to provide funds necessary to get such "opportunistic" sources of sand to the shoreline.

It has been argued that regional approaches to shoreline erosion are environmentally preferable to building separate seawalls to protect individual structures, and the City of Encinitas has been urged by the Commission to develop a comprehensive shoreline management strategy as part of its certified LCP. PS Policy 1.7 and Section 30.34.020(B)(2)(9) of the IP, however, requires the City and Commission to approve shoreline protection for existing structures in danger from erosion when the shoreline protection is designed to eliminate or mitigate effects on local shoreline sand supply. In this particular case, the Commission finds that the residential structure at 1500 Neptune Avenue is faced with an immediate threat from erosion and requires protection prior to implementation of a comprehensive regional shoreline erosion strategy.

The applicants are proposing to pay a fee in-lieu of directly depositing the sand on the beach, because the benefit/cost ratio of the latter approach would be too low. Many of the adverse effects of the seawall on sand supply will occur gradually. In addition, the adverse effects impact the entire littoral cell but to different degrees in different locations throughout the cell (based upon wave action, submarine canyons, etc.) Therefore, mitigation of the adverse effects on sand supply is most effective if it is part of a larger project that can take advantage of the economies of scale and result in quantities of sand at appropriate locations in the affected littoral cell in which it is located. As required by Special Condition # 2, the funds will be used only to implement projects that benefit the area where the fee was derived, and provide sand to the region's beaches, not to fund operations, maintenance or planning studies. Such a fund will aid in the long-term goal of increasing the sand supply and thereby reduce the need for additional armoring of the shoreline in the future. The fund also will insure available sandy beach for recreational uses.

For the past decade, the Commission has relied upon the Beach Sand In-Lieu Mitigation Program to address impacts to local sand supply and some of the impacts from the loss of beach area[1]. The Beach Sand In-Lieu Fee Mitigation Program was established to mitigate for persistent losses of recreational beach and has been administered by the San Diego Association of Governments (SANDAG) for many years. However, the Commission has long recognized that while beach nourishment can address some of the losses that are directly attributable to seawall projects, the one-time provision of beach through nourishment does not adequately address the long-term and persistent impacts of shoreline protective devices. The main coastal resource concerns for these impacts arise from the losses in recreational use and recreational value that result from the loss of available shoreline area.

The applicant has proposed to make a contribution to the mitigation program as discussed above in the amount of $45,385.92 for the proposed 100 foot-long seawall. However, as identified previously, the applicants have only documented the need for a seawall below one of the residences, and the Commission is only authorizing the construction of a 50 foot-long seawall (half the proposed length). Therefore, the applicants' proposed mitigation fee of $45,385.92 needs to be divided in half. Special Condition #2 requires the applicants to deposit an in-lieu fee of $22,693.00 to fund beach sand replenishment as mitigation for the impacts of the proposed shoreline protective device on beach sand supply and shoreline processes over the 30-year design life of the project.

Special Condition #2 also requires the applicants to amend the subject permit before the end of the 30-year design life to either remove the seawall or extend the mitigation fee (including mitigation for any public access/recreational use impacts) based on the proposed life of the seawall which should correspond to and not exceed the remaining life of the duplex structure.

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[1] The above-described impacts on the beach and sand supply have previously been found to result from seawalls in other areas of North County. In March of 1993, the Commission approved CDP #6-93-85/Auerbach, et al for the construction of a seawall fronting six non-continuous properties located in the City of Encinitas. In its finding for approval, the Commission found the proposed shoreline protection would have specific adverse impacts on the beach and sand supply and required mitigation for such impacts as a condition of approval. The Commission made a similar finding for several other seawall developments within San Diego County including an August 1999 approval (ref. CDP No. 6-99-100/Presnell, et. al) for the approximately 352-foot-long seawall project located approximately ¼ mile south of the subject development and a March 2003 approval (ref. CDP No. 6-02-84/Scism) located 2 lots south of the subject site. (Also ref. CDP Nos. 6-93-36-G/Clayton, 6-93-131/Richards, et al, 6-93-136/Favero, 6-95-66/Hann, 6-98-39/Denver/Canter and 6-99-41/Bradley; 6-00-138/Kinzel, Greenberg; 6-02-02/Gregg, Santina and 6-03-33/Surfsong).

If the proposed wall were damaged in the future (e.g. as a result of wave action, storms, etc.) it could threaten the stability of the site, which could lead to the need for more bluff alteration. In addition, damage to the seawall could adversely affect the beach by resulting in debris on the beach and/or creating a hazard to the public using the beach. Therefore, in order to find the proposed seawall consistent with the LCP and Coastal Act, the Commission finds that the condition of the seawall in its approved state must be maintained for the estimated life of the seawall. Further, in order to ensure that the permittees and the Commission know when repairs or maintenance are required, the permittees must monitor the condition of the seawall annually. The monitoring will ensure that the permittees and the Commission are aware of any damage to or weathering of the seawall and can determine whether repairs or other actions are necessary to maintain the seawall in its approved state.

Accordingly, Special Condition #6 requires the permittees to maintain the seawall in its approved state. In addition, Special Condition #6 advises the applicants that ongoing maintenance and repair activities which may be necessary in the future could require permits. Section 30610(d) exempts repair and maintenance activities from coastal development permit requirements unless such activities enlarge or expand a structure or the method of repair and maintenance presents a risk of substantial adverse environmental impact. The Commission's regulations identify those methods of repair and maintenance of seawalls that are not exempt (see California Code of Regulations Section 13252). Special Condition #3 requires that the applicants monitor the wall on an annual basis to determine if repairs/maintenance are necessary, Special Condition #6 requires the applicants to consult with the Commission to determine whether any proposed repair and maintenance requires a permit.

There may also be other local, state or federal agencies having jurisdiction over this project. Conditions of approval and/or mitigation measures may be required from these agencies. As such, Special Condition #7 has been imposed. This condition requires the applicants to submit copies of any discretionary permits obtained from other local, state or federal entities before the coastal development permit is issued. Should any project modifications be required as a result of any of these permits, the applicants are further advised that an amendment to this permit may be necessary to incorporate such mitigation measures into the project.

The Commission typically requires that any proposed shore/bluff protection be constructed to withstand serious episodic storms. Special Condition #4 has been attached which requires the applicants to submit certification by a registered civil engineer verifying that the seawall, as proposed herein, has been designed to withstand storms comparable to the winter storms of 1982-83.

Special Condition #5 requires that feasible alternative measures which would avoid additional alteration of the natural landform of the public beach or coastal bluffs must be considered by the property owners in the future, should additional destabilization occur. The condition will ensure that future property owners acknowledge the hazardous condition on the subject site and are aware that any proposals for additional protection, such as an augmented seawall or bluff stabilization measures, will require an alternatives analysis, including measures designed to reduce the risk to the principal residence

without additional shoreline or bluff protective devices. Potential alternatives include, but are not limited to, relocation of all or portions of the principal structure that are threatened, structural underpinning, and other remedial measures capable of protecting the principal residence for the remainder of its economic life. To avoid additional impacts on visual quality, sand supply and public access and recreation, the Commission can require the property owners to implement those alternatives. The condition also states that no shore or bluff protection shall be permitted for ancillary improvements located within the blufftop setback area (such as decks, patios, etc.).

Through this condition, the property owners are required to acknowledge the risks inherent in the subject property and that there are limits to the structural protective measures that may be permitted on the adjacent public property in order to protect the existing development in its current location. Special Condition #5 also requires the applicants and future property owners to acknowledge that future redevelopment of the site cannot rely on the subject seawall for its protection. In other words, the proposed seawall is in a hazardous location and not a permanent structure. It has been approved for the protection of the existing residence at 1500 Neptune Avenue to meet the requirements of the certified LCP and is not approved in order to accommodate future redevelopment of the site in the same location. If a new home or residential addition is proposed in the future, it must be located in an area where the development is consistent with the Coastal Act and/or applicable LCP requirements regarding geologic safety and protection from hazards, as if the seawall does not exist.

The applicants are proposing to construct the development in an area subject to wave and storm hazards. Although the applicants' geotechnical report asserts that the proposed development can withstand such hazards and protect existing development from such hazards, the risk of damage to the structure and the existing development cannot be eliminated entirely. The Commission finds that in order for the proposed development to be consistent with the certified LCP, the applicants must assume the risks of damage from flooding and wave action. As such, Special Condition #10 requires the applicant to waive any liability on the part of the Commission for approving the proposed development. In addition, this condition requires the applicants to indemnify the Commission in the event that third parties bring an action against the Commission as a result of failure of the proposed development to withstand and protect against the hazards. Special Condition #15 requires the applicants to record a deed restriction imposing the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of their respective properties. Only as conditioned can the proposed project be found consistent with the certified LCP and public access and recreation policies of the Coastal Act.

In summary, the applicants have documented that the existing duplex on the blufftop is in danger from erosion and bluff failure. Thus, the Commission is required to approve protection for the residential structure at 1500 Neptune Avenue, pursuant to the certified LCP. The applicants have presented information which documents that there are no other less damaging feasible alternatives available to reduce the risk from bluff erosion and provide the necessary protection. Since the proposed seawall will have adverse impacts on beach sand supply and the applicants have chosen to mitigate for those permits by

participating in the SANDAG administered in-lieu fee program, Special Condition #2 requires the applicants to pay an in-lieu mitigation fee prior to issuance of the coastal development permit. Therefore, as conditioned, the Commission finds that the proposed seawall is consistent with PS Policy 1.7 of the LUP and Section 30.34.020(B)(2)(9) of the certified Implementation Plan (IP).

3. Public Access/Recreation. In addition to the adverse impacts on local sand supply, shoreline protective devices can also have significant adverse impacts to public access and recreation. Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." The proposed project is located seaward of the first through public road (Neptune Avenue) and the Pacific Ocean. Coastal Act Sections 30210 through 30213, as well as Sections 30220 and 30221 specifically protect public access and recreation, and state:

> Section 30210: In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.
>
> Section 30211: Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.
>
> Section 30212(a): Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects…
>
> Section 30213: Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. …
>
> Section 30220: Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.
>
> Section 30221: Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

Coastal Act Section 30240(b) also protects parks and recreation areas such as the adjacent public beach park. Section 30240(b) states:

> Section 30240(b). Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts

which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

The project site is located adjacent to the public beach which is utilized by local residents and visitors for a variety of recreational activities such as swimming, surfing, jogging, walking, surf fishing, beachcombing and sunbathing. The site is located approximately ½ mile north of "Beacon's" public access path and approximately ¼ mile south of Grandview stairway, one of the City's public access stairways to the beach. The proposed seawall, which will be 50 ft.-long and approximately 2 ½ ft.-wide, will be constructed adjacent to and inland of the mean high tide line at Leucadia State Beach. Unlike the subject application request, most if not all of the seawall applications approved by the Commission in Encinitas and in nearby Solana Beach have been located on the public beach, seaward of the mean high tide line.

Development along the shoreline which may burden public access in several respects has been approved by the Commission. However, when impacts can't be avoided and have been reduced to the maximum extent feasible, mitigation for any remaining adverse impacts of the development on access and public resources is always required. The Commission's permit history reflects the experience that development can physically impede public access directly, through construction adjacent to the mean high tide line in areas of narrow beaches, or through the placement or construction of protective devices, seawalls, rip-rap, and revetments. Since physical impediments adversely impact public access and create a private benefit for the property owners, the Commission has found in such cases (in permit findings of CDP 4-87-161,Pierce Family Trust and Morgan; CDP 6-87-371, Van Buskirk; CDP 5-87-576, Miser and Cooper; CDP 3-02-024, Ocean Harbor House; 6-05-72, Las Brisas, 6-07-134/Caccavo, 6-03-33-A5/Surfsong, 6-08-73/DiNoto, et.al and 6-08-122/Winkler) that a public benefit must arise through mitigation conditions in order for the development to be consistent with the access policies of the Coastal Act, as stated in Sections 30210, 30211, and 30212.

In cases where the seawall is located on the public beach, appropriate mitigation could be installation of public access/recreational improvements and/or creation of additional public beach area in close proximity to the impacted beach area. In addition to the more qualitative social benefits of beaches (recreational, aesthetic, habitat values, etc.), beaches provide significant direct and indirect revenues to local economies, the state, and the nation. There is little doubt that the loss of public beach in an urban area represents a significant impact to public access and recreation, including a loss of the social and economic value of this recreational opportunity. The question becomes how to adequately mitigate for these qualitative impacts on public recreational beach use and in particular, how to determine a reasonable value of this impact to serve as a basis for mitigation.

However, in this particular case, the proposed seawall will not be located directly on public beach, but rather will be located upland of the mean high tide. According to the Commission's Technical Services Division, the seawall will not directly impede the public access or recreational uses typically considered by the Commission over its

estimated 30 year lifetime because there will be no direct encroachment of the proposed development onto public beach area. And, since the proposed wall and the beach platform upon which the proposed wall be constructed are both inland of the mean high tide line, the creation of beach area inland of the proposed seawall location would, for the foreseeable future, also be inland of the mean high tide line. Thus, while the proposed seawall will fix the back of the beach, the effects of the back beach fixing will not have an adverse impact upon available public beach area. Over time, the mean high tide elevation may be adjusted to a higher level and the beach platform will be worn down due to repeated wave attack, and the current wall location may become the inland limit for the mean high tide line. Therefore, in this case, the Commission is not requiring mitigation for direct public access/recreational use impacts at this time. However, because the proposed seawall will be located no further seaward than the existing permitted seawall, the previously required lateral access easement seaward of the seawall will remain in full effect to protect existing public access. Also, at the end of the 30 year time period, the beach conditions and mean high tide elevation should be re-evaluated to determine if this condition has changed.

However, the construction of the seawall could have temporary impacts to public access during the construction period. The use of the beach or public parking areas for staging of construction materials and equipment can also impact the public's ability to gain access to the beach. Because the applicants have not identified the location of the staging and storage area, Special Condition #14 has been attached to mitigate the impact on public parking areas and public access. Special Condition #14 prohibits the applicants from storing vehicles on the beach overnight, using any public parking spaces for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in public lots. The condition also prohibits construction on the beach during weekends and holidays and during the summer months (between Memorial Day to Labor Day) of any year.

This stretch of beach seaward of the proposed seawall has historically been used by the public for access and recreation purposes. Special Condition #9 acknowledges that the issuance of this permit does not waive the public rights that may exist on the property. To assure that the seawall does not actually lie on State Lands property, Special Condition #11 requires the applicant to obtain any necessary permits or identification from the State Lands Commission that no State Lands are involved.

With Special Conditions addressing any potential adverse impacts to public access and recreation, impacts to the public will be minimized to the greatest extent feasible. Thus, as conditioned, the Commission finds the project consistent with the public access and recreation policies of the Coastal Act.

4. Private Stairway/Conservation of Bluff. The City's certified LCP includes provisions that not only prohibit the construction of private stairways on the bluff but also provide for the "phase out" of existing private access stairs. Public Safety Element (PS) Policy 1.6 of the City's Land Use Plan (LUP) states, in part:

> The City shall provide for the reduction of unnatural causes of bluff erosion, as detailed in the Zoning Code, by:
>
> a. Only permitting public access stairways and no private stairways, and otherwise discouraging climbing upon and defacement of the bluff face;
>
> [. . .]
>
> f. . . . no structures, including walkways, patios, patio covers, cabanas, windscreens, sundecks, lighting standards, walls, temporary buildings not exceeding 200 square feet in area, and similar structures shall be allowed within five feet of the bluff top edge; . . .
>
> g. Permanently conserving the bluff face within an open space easement or other suitable instrument. . . .

In addition, Circulation Policy 6.7 states as follows:

> Discourage and phase out private access to the beach over the bluffs. New private accessways shall be prohibited. (emphasis added)

In order to demolish the existing seawall and construct a new seawall, the applicants will need to demolish the lower portion of the existing private access stairway. Following completion of the new seawall, the applicants are requesting authorization to reconstruct the lower portion of the seawall and tie it into the face of the new seawall leading to the beach below. The existing stairway is a permitted structure since the Commission approved it after-the-fact in 1989. However, in approving the stairway, the Commission did not specifically provide for future maintenance or repair if the structure should fail in the future. Subsequently, the Encinitas LCP became the standard of review, and it provides for the phasing out of private access over the bluffs.

As previously identified, the Division of Mines and Geology has mapped the entire Encinitas shoreline as an area susceptible to landslides and mapped the area as either "Generally Susceptible" or "Most Susceptible Areas" for landslide susceptibility. Because the bluffs are hazardous and susceptible to failure, the LCP includes policies that reduce and eliminate activities or structures that could adversely affect bluff stability. As cited above, the LCP specifically prohibits private access stairways and provides for existing stairways to be phased-out. Therefore, Special Condition #1a includes a requirement that the reconstruction of any demolished or removed portion of the private access stairway be removed from the final plans so as to not authorize their reconstruction.

As indicated in Section 2 above, Commission staff is recommending that the proposed concrete wall designed to cover the existing and failing mid-bluff timber wall be eliminated from the project because neither the proposed new concrete wall nor the existing timber wall are necessary to protect the existing structures at the top of the bluff.

Without a new concrete wall constructed over the face of the existing mid-bluff wall, it is anticipated that over time, the mid-bluff wall will fail which will lead to the failure of portions of the private access stairway. Special Condition #7 of the CDP #6-88-464 requires the applicants to remove any debris that is deposited on the beach or in the water as a result of such future failures. Special Condition #6 of the subject amendment request reinforces that responsibility. Therefore, while the immediate effect of the subject development will be the elimination of only the lower section of the existing private access stairway, over time as the mid-bluff wall and stairway begin to fail, most, if not all, of the remaining portions of the private access stairway will be eliminated from the face of the bluff consistent with the requirements of PS Policy 1.7 of the certified LUP.

Since the bluff at this location has been determined to be highly unstable and since private stairways are prohibited by PS Policy 1.6 of the City's LCP and their phasing out over time is required by PS Policy 1.7, the Commission finds that the reconstruction of any portion of the private access stairway is inconsistent with the certified LCP and must removed from the project design.

5. Visual Resources. Resource Management (RM) Goal 8 of the LUP states the following:

> The City will undertake programs to ensure that the Coastal Areas are maintained and remain safe and scenic for both residents and wildlife.

In addition, RM Policy 8.5 of the LUP states, in part, that:

> The City will encourage the retention of the coastal bluffs in their natural state to minimize geologic hazards and as a scenic resource. Construction of structures for bluff protection shall only be permitted when an existing principal structure is endangered and no other means of protection of that structure is possible.

In addition, RM Policy 8.7 of the LUP states, in part, that:

> The City will establish, as primary objectives, the preservation of natural beaches and visual quality as guides to the establishment of shoreline structures. . . .

Section 30.34.020B.8 of the Implementation Program states:

> The design and exterior appearance of buildings and other structures visible from public vantage points shall be compatible with the scale and character of the surrounding development and protective of the natural scenic qualities of the bluffs.

Section 30.34.020.C.2.b.(4) of the IP states:

> The proposed measure in design and appearance must be found to be visually compatible with the character of the surrounding area; where feasible, to restore and enhance visual quality in visually degraded areas; and not cause a significant alteration of the natural character of the bluff face.

As stated above, the proposed development will occur adjacent to Leucadia State Beach, a public park and recreational area. Following construction, the natural appearance of the bluffs at this site will be substantially altered. To mitigate the visual impacts of the proposed seawall, the applicants propose to color and texture the seawall. The visual treatment proposed is similar to the visual treatment approved by the Commission in recent years for shoreline devices along the Solana Beach shoreline. (ref. CDP #6-02-84/Scism; 6-02-02/Gregg, Santina; 6-03-33/Surfsong; 6-04-83/Johnson, Cumming; 6-07-134/Brehmer, Caccavo; 6-08-122/Winkler). The technology in design of seawalls has improved dramatically over the last two decades. Today, seawalls typically involve sculpted and colored concrete that upon completion closely mimic the natural surface of the lower bluff face.

In addition, to address other potential adverse visual impacts, Special Conditions Nos. 4 and 7 have been attached which require the applicants to monitor and maintain the proposed seawall in its approved state. In this way, the Commission can be assured that the proposed structure will be maintained so as to effectively mitigate its visual prominence.

Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the maximum extent feasible and the proposed development will include measures to prevent impacts that would significantly degrade the adjacent park and recreation area (beach area). Thus, with the proposed conditions, the project is consistent with the visual resource protection policies of the LCP.

5. Protection of Ocean Waters/BMP's. Resource Management (RM) policies 2.1 and 2.3 of the certified LUP require that new development be designed so that ocean waters and the marine environment be protected from polluted runoff and accidental spill of hazardous substances. The following RM goals and policies are applicable:

> Quality of the Ocean Waters.
>
> The coastal areas not only serve as resources for recreation and relaxation for both residents and visitors to the City, but also provide homes to many forms of marine life. As with groundwater, a major threat to the quality of our coastal waters comes from pollution. Policies listed in the following section focus on the importance of eliminating those practices that contribute to degradation and pollution of the coastal waters. In addition, these policies support the aims and objectives of the Coastal Act that relate to the improvement of water quality in coastal waters.
>
> GOAL 2: The City shall make every effort to improve ocean water quality.
>
> POLICY 2.1: In that ocean water quality conditions are of utmost importance, the City shall aggressively pursue the elimination of all forms of potential unacceptable pollution that threatens marine or human health.

> POLICY 2.3: To minimize harmful pollutants from entering the ocean environment from lagoons, streams, storm drains and other waterways containing potential contaminants, the City shall mandate the reduction or elimination of contaminants entering all such waterways; pursue measures to monitor the quality of such contaminated waterways, and pursue prosecution of intentional and grossly negligent polluters of such waterways.

The construction of the proposed seawall will occur adjacent to the Leucadia State Beach, a public beach and recreational area within a few feet of ocean waters. Construction activities will only occur at low tides when access along the beach is available. However, at high tides ocean waters could extend up to the face of the seawall such that the seawall at times will be subject to wave action. The method of construction of the seawall involves the multiple application of shotcrete that is sprayed (at high pressure) over the face of the seawall structure. This shotcrete material will eventually be sculpted and colored to closely match the appearance of the natural bluffs. According to the engineers for similar seawall projects, approximately 10 to 15% of this shotcrete (concrete) material rebounds off the structure onto the beach as it is being applied. Because the material is wet, the applicant's representative indicates it cannot be picked up until it hardens. The Commission is aware that in previously constructed seawalls along the Solana Beach shoreline, this shotcrete "rebound" has not been removed before the ocean waters rise and mix with the wet shotcrete material. After the return of low tides, any remaining hardened shotcrete is then picked up by the construction crews and removed from the beach. According to the Commission's water quality division and staff of the State Regional Water Quality Control Board, San Diego Region, the mixing of this rebound shotcrete with ocean waters is a violation of the State Water Quality Act since it would involve the unauthorized discharge of a pollutant into ocean waters.

Along other sections of the coast, shotcrete is applied without the associated rebound problems. Contractors place tarps on the beach to collect material that drops from the wall. They also use backdrops or drapes along the face of the bluff to contain splatter and rebound and prevent scatter of shotcrete material all around the beach. These and other techniques are possible ways to control shotcrete debris and prevent discharge into the marine environment.

Special Condition #14 is attached which requires that during the construction of the project, "the permittees shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion". This is a standard requirement for all seawall projects approved by the Commission. However, based on information supplied by the applicants' engineer, this special condition has not effectively served to prohibit the contamination of ocean waters by rebounded shotcrete. To assure that the subject development will not result in the pollution of the ocean waters, Special Condition #13 has been attached. Special Condition #13 requires the applicant to submit a Polluted Runoff Control Plan that incorporates structural and nonstructural Best Management Practices (BMPs), for Executive Director approval, for the construction of the proposed seawall. Construction methods must be devised to assure this rebound shotcrete material does not mix with or pollute ocean waters. With appropriate BMPs, the potential for this polluted material from the site making its way

into the ocean will be eliminated. Therefore, as conditioned, the Commission finds the proposed development consistent with the marine and water quality protection policies of the certified LCP.

6. Unpermitted Development. Development including, but not limited to, 4 ft.-diameter concrete footings around the 15 telephone poles that have been integrated in the existing seawall, has taken place without benefit of a coastal development permit. Although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the policies of the certified LCP and the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations, nor does it constitute an implied statement of the Commission's position regarding the legality of any development undertaken on the subject site without a coastal permit, or that all aspects of the violation have been fully resolved. Accordingly, the applicants remain subject to enforcement action just as they were prior to the approval of this permit for engaging in unpermitted development, unless and until the conditions of approval included in this permit are satisfied, the permit is issued, and the unpermitted development is removed. To assure the unpermitted development is resolved in a timely manner, Special Condition 16 has been attached to require the applicants to comply with all Special Conditions of approval within 120 days of Commission action or within such additional time granted by the Executive Director for good cause.

7. Local Coastal Planning. Section 30604 (a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

The subject site is located adjacent to the beach within the City of Encinitas. In November of 1994, the Commission approved, with suggested modifications, the City of Encinitas Local Coastal Program (LCP). Subsequently, on May 15, 1995, coastal development permit authority was transferred to the City. Although the site is within the City of Encinitas, the proposed project represents an amendment to an earlier approved Coastal Commission permit and requires approval by the Coastal Commission. However, because the site is located in the City's permit jurisdiction area and seaward of the first coastal roadway, the standard of review is the Certified LCP and public access and recreation policies of Chapter 3 of the Coastal Act.

As shoreline erosion along the coast rarely affects just one individual property, it is imperative that a region wide solution to the shoreline erosion problem be addressed and solutions developed to protect the beaches. Combined with the decrease of sandy supply from coastal rivers and creeks and armoring of the coast, beaches will continue to erode without being replenished. This will, in turn, decrease the public's ability to access and recreate on the shoreline.

Based on specific policy and ordinance language requirements placed in the LCP by the Commission, the City of Encinitas is in the process of developing a comprehensive program addressing the shoreline erosion problem in the City. The intent of the plan is to look at the shoreline issues facing the City and to establish goals, policies, standards and strategies to comprehensively address the identified issues. To date, the City has conducted several public workshops and meetings on the comprehensive plan to identify issues and present draft plans for comment. However, at this time it is uncertain when the plan will come before the Commission as an LCP amendment or when it will be scheduled for local review by the Encinitas City Council.

In the case of the proposed project, site specific geotechnical evidence has been submitted indicating that one existing structure above the project site is in danger. This project emphasizes the critical need for a comprehensive planning effort such that seawalls are not constructed in an emergency situation, with a design that may not be the least environmentally damaging alternative in the future.

Based on the above findings, the proposed seawall development has been found to be consistent with the Certified LCP and relevant Chapter 3 policies of the Coastal Act in that the need for the seawall has been documented, its adverse impacts on beach sand supply and visual resources will each be mitigated. Therefore, the Commission finds that approval of the proposed seawall, as conditioned, will not prejudice the ability of the City of Encinitas to prepare a comprehensive plan addressing the City's coastline as required in the certified LCP and consistent with Chapter 3 policies of the Coastal Act.

8. Consistency with the California Environmental Quality Act (CEQA).

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, 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 may have on the environment.

The proposed project has been conditioned in order to be found consistent with the geologic stability, visual quality, and water quality protection policies of the certified LCP and the public access and recreation policies of Chapter 3 of the Coastal Act. Mitigation measures, including conditions addressing payment of an in-lieu fee for impacts to sand supply, requirements for minimizing impacts to public access and recreation, monitoring and maintenance of the structures over the lifetime of the project, color of construction materials, timing of construction and the use of BMP’s will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

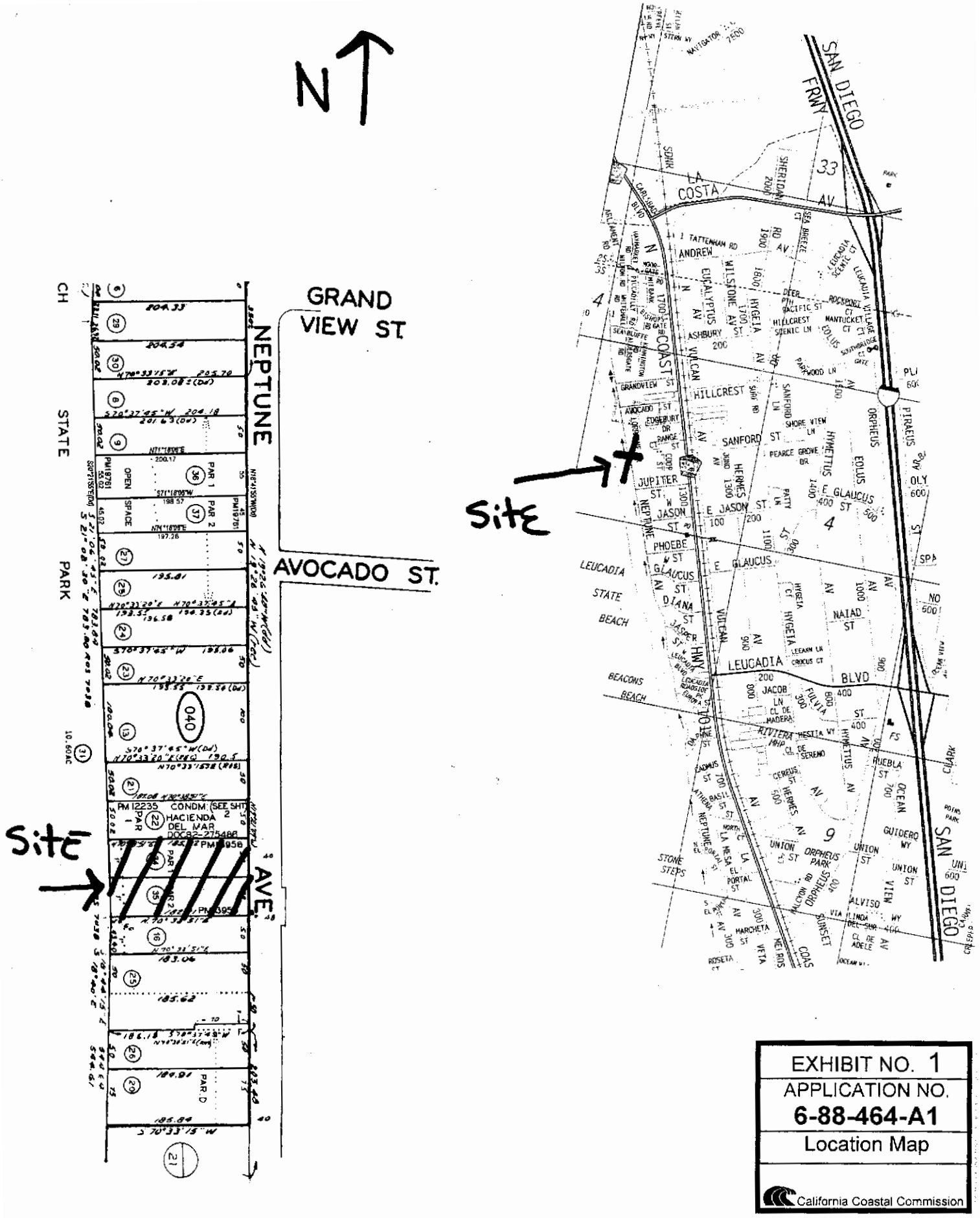
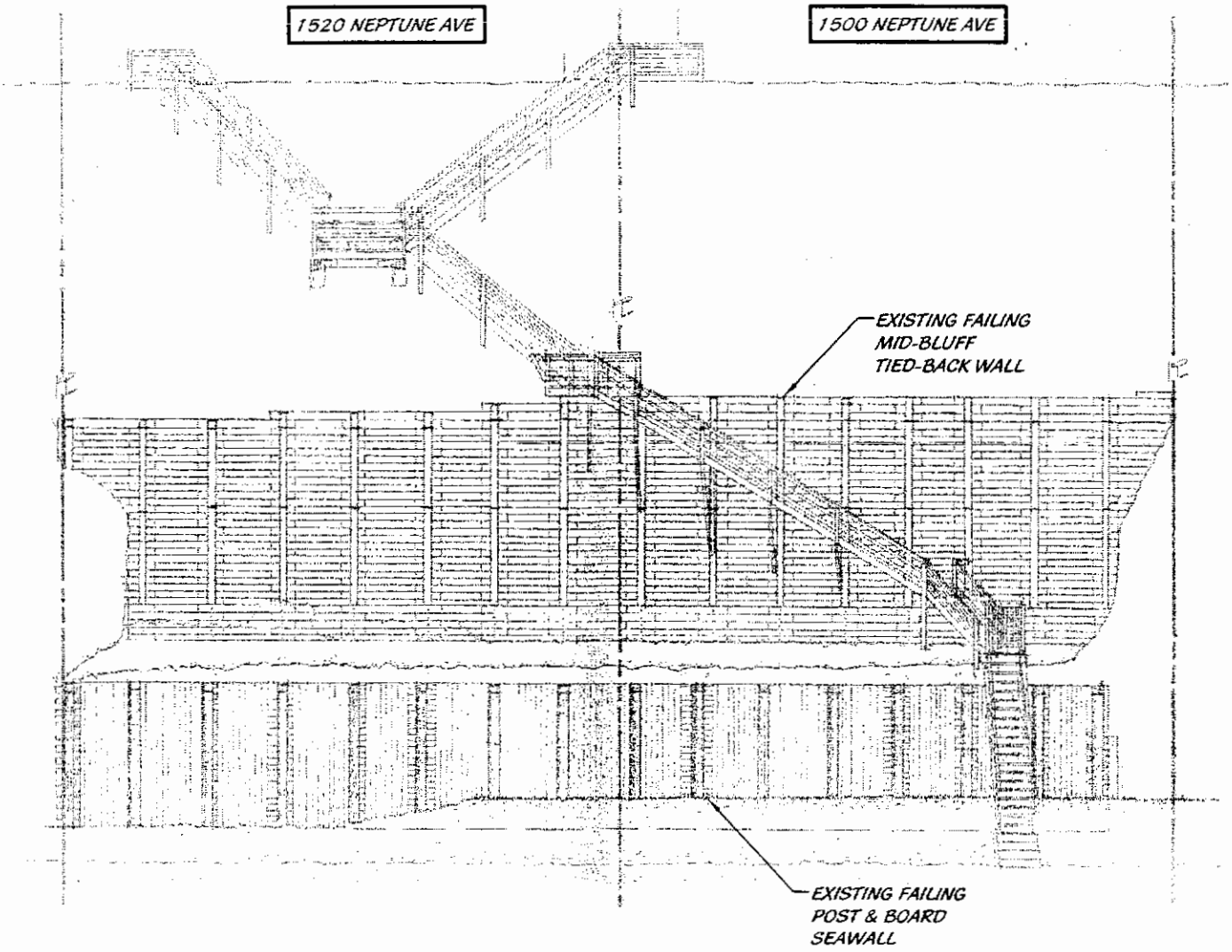


EXHIBIT NO. 1
APPLICATION NO. **6-88-464-A1**
Location Map
California Coastal Commission



EXISTING SEAWALL - ELEVATION

2
C-4

SCALE: 1"=8' (HORIZ.:VERT.)

NOTE: IF DRAWING IS NOT FULL SIZE (24X36)
THEN REDUCE SCALE ACCORDINGLY

0 1 2 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LOWER AND MID-BLUFF TIED-BACK WALLS-1500/1520 NEPTUNE AVE

EXISTING SECTION & ELEVATION

CITY OF ENCINITAS

RECOMMENDED FOR APPROVAL	APPROVED F
BY:	BY:
R.C.E.: EXP.:	CITY ENGINEER R.C.E.:

EXHIBIT NO. 2
APPLICATION NO.
6-88-464-A1
Existing Site Plan

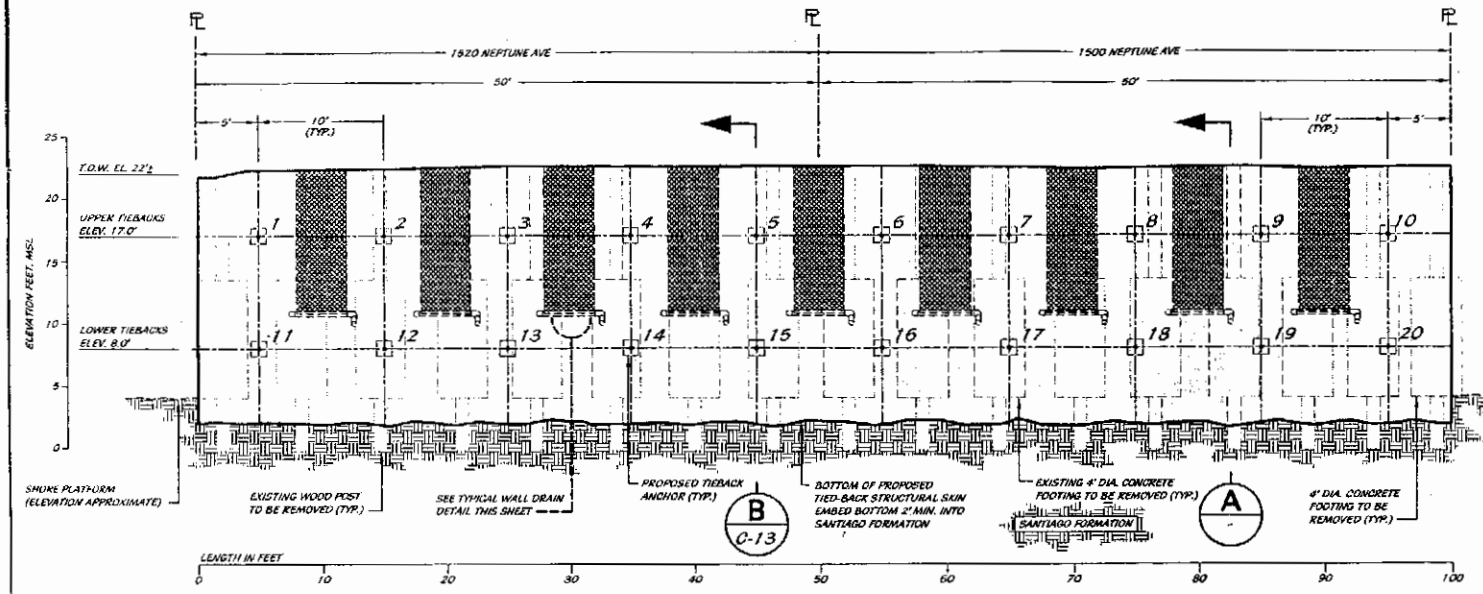
California Coastal Commission

11-14-08

NOTE: IF DRAWING IS NOT FULL SIZE (24X36) THEN REDUCE SCALE ACCORDINGLY

0 1 2 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

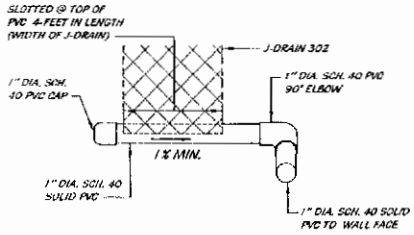


NOTES

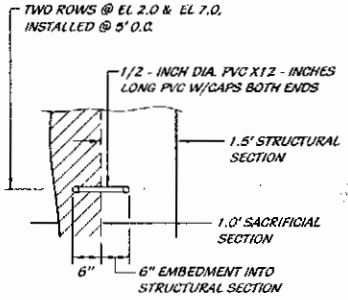
1. DEMOLITION OF EXISTING LOWER WALL AND CONSTRUCTION OF TIED-BACK SHOTCRETE LOWER WALL TO BEGIN AFTER COMPLETION OF TESTING AND LOCK-OFF OF MID-BLUFF WALL.
2. REMOVE EXISTING STAIRWAY, AS NECESSARY, TO ALLOW CONSTRUCTION OF TIED-BACK STRUCTURAL SKIN. RECONSTRUCT STAIRWAY AT COMPLETION OF WORK.

PROPOSED LOWER TIED-BACK WALL PROFILE

SCALE: APPROX. 1"=5'

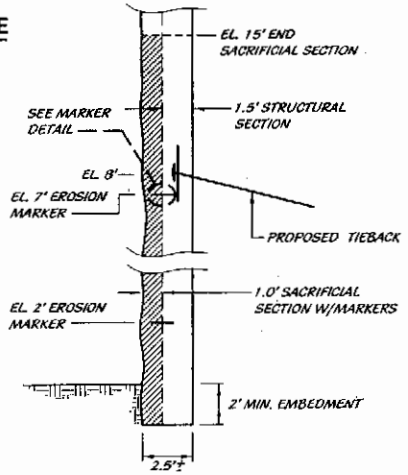


IN DETAIL



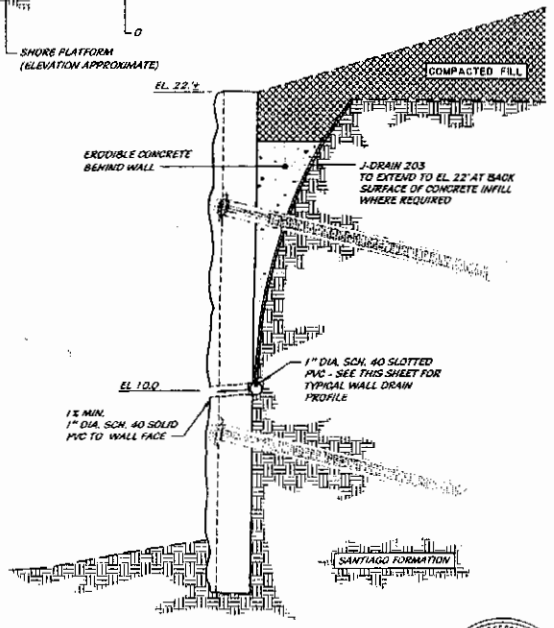
MARKER - DETAIL

NO SCALE



PROPOSED SACRIFICIAL MARKER - DETAIL

NO SCALE



LOWER WALL DRAIN SECTION A

NO SCALE

REGISTERED PROFESSIONAL ENGINEER — MILLER T. CRAWFORD — No. 23792 Exp. 12/31/09 — CIVIL — STATE OF CALIFORNIA

EXHIBIT NO. 3
APPLICATION NO. 6-88-464-A1
Proposed Seawall
California Coastal Commission

REVISION OF	06-03-08
NO.	23792
ION	
TE:	12-31-09

TERRACOSTA CONSULTING GROUP
ENGINEERS & GEOLOGISTS
1455 MURPHY CANYON ROAD, SUITE 108
SAN DIEGO, CALIFORNIA 92123
(858) 573-8900

DESIGN: WFC
DRAWN: RF
CHECKED: WFC

REVISIONS			
REV.	BY	DATE	APP.

LOWER AND MID-BLUFF TIED-BACK WALLS-1500/1520 NEPTUNE AVE

PROPOSED LOWER BLUFF TIED-BACK WALL PROFILE & DETAILS

CITY OF ENCINITAS

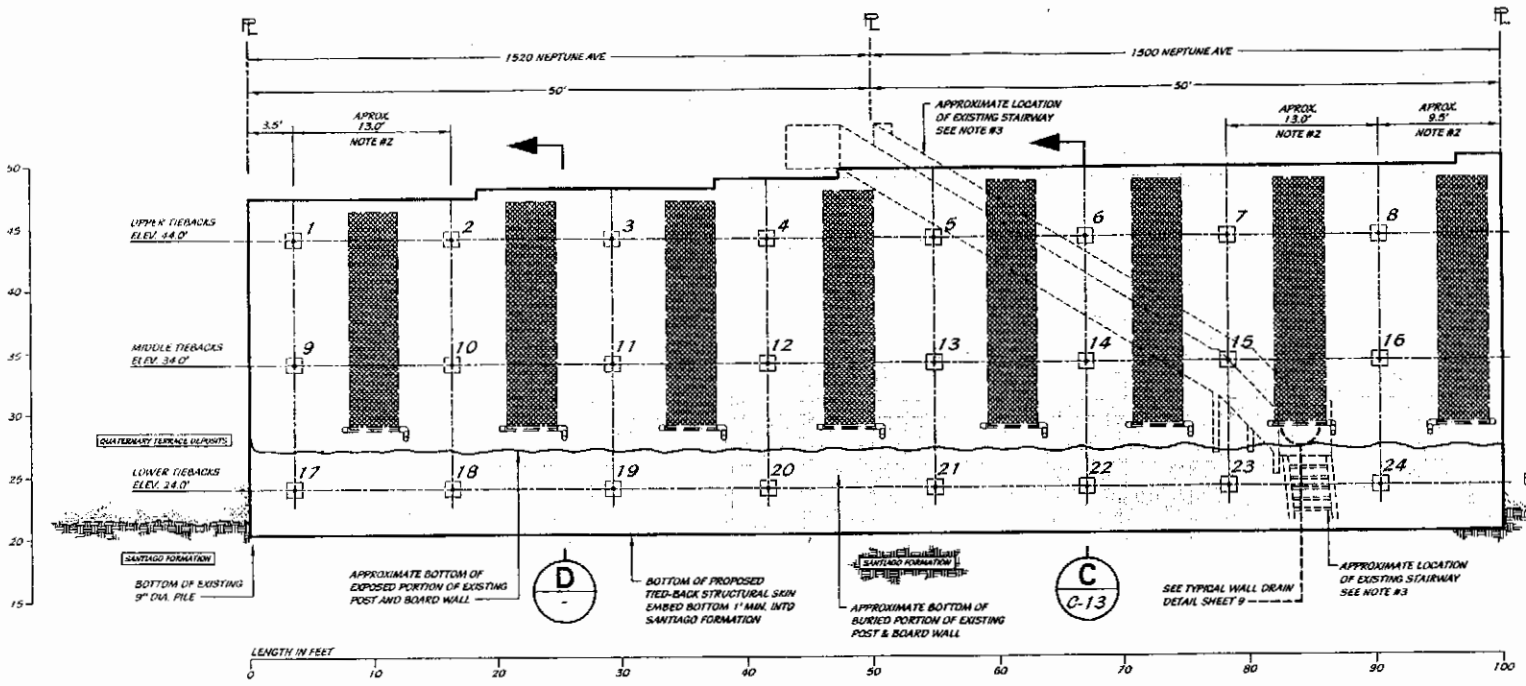
RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION
BY:	BY:
R.C.E.: EXP.:	CITY ENGINEER R.C.E.:
DATE:	EXP.: DATE:

DRAWING NO. C-09
SHEET 9 OF 1
11-14-08
DATE OF PREP

NOTE: IF DRAWING IS NOT FULL SIZE (24X36) THEN REDUCE SCALE ACCORDINGLY

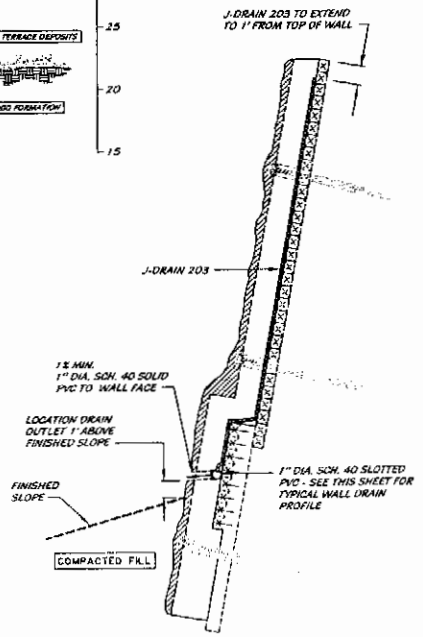
0 1 2 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



PROPOSED MID-BLUFF TIED-BACK WALL PROFILE

SCALE: APPROX. 1"=5' (VERT.)



MID-BLUFF WALL DRAIN SECTION D

NO SCALE

NOTES

1. DEMOLITION OF EXISTING LOWER WALL AND CONSTRUCTION OF TIED-BACK SHOTCRETE LOWER WALL TO BEGIN AFTER COMPLETION OF TESTING AND LOCK-OFF OF MID-BLUFF WALL.
2. HORIZONTAL DIMENSIONS BETWEEN TIEBACKS ARE APPROXIMATE. TIEBACK SHOULD BE CENTERED BETWEEN EXISTING WALL POSTS.
3. REMOVE EXISTING STAIRWAY AS NECESSARY TO ALLOW CONSTRUCTION OF [illegible]CTURAL SKIN. RECONSTRUCT STAIRWAY WITH SAME AT COMPLETION OF WORK. SECURE TIMBER SUPPORT POLES TO V WALL WITH GALVANIZED BRACKETS (SEE SHEET 16 FOR DETAILS).

EXHIBIT NO. 4
APPLICATION NO. 6-88-464-A1
Proposed Midbluff Wall
California Coastal Commission

OF 3-08 3792 -31-09	TERRACOSTA CONSULTING GROUP ENGINEERS & GEOLOGISTS 4495 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CALIFORNIA 92123 (858) 573-8900	DESIGN: WFC DRAWN: RF CHECKED: WFC	REVISIONS REV. BY DATE APP.	LOWER AND MID-BLUFF TIED-BACK WALLS-1500/1520 NEPTUNE AVE	PROPOSED MID-BLUFF TIED-BACK WALL PROFILE & DETAILS	CITY OF ENCINITAS RECOMMENDED FOR APPROVAL BY: R.C.E.: EXP.: DATE:	APPROVED FOR CONSTRUCTION BY: CITY ENGINEER R.C.E.: EXP.: DATE:	DRAWING NO. C-10 SHEET 10 OF 1 11-14-08 DATE OF PREP.

21

MID-BLUFF TIEBACK ANCHOR SCHEDULE

ANCHOR ROW	ANCHOR ELEV.	BOND LENGTH (FT)	TOTAL LENGTH (FT)	DESIGN LOAD (kips)	NO. OF 0.6" DIA. STRANDS	PROOF LOAD (kips)	LOCK OFF LOAD (kips)
UPPER	44'	30.0	50	150	7	225	150
MIDDLE	34'	30.0	50	150	7	225	150
LOWER	24'	30.0	50	150	7	225	150

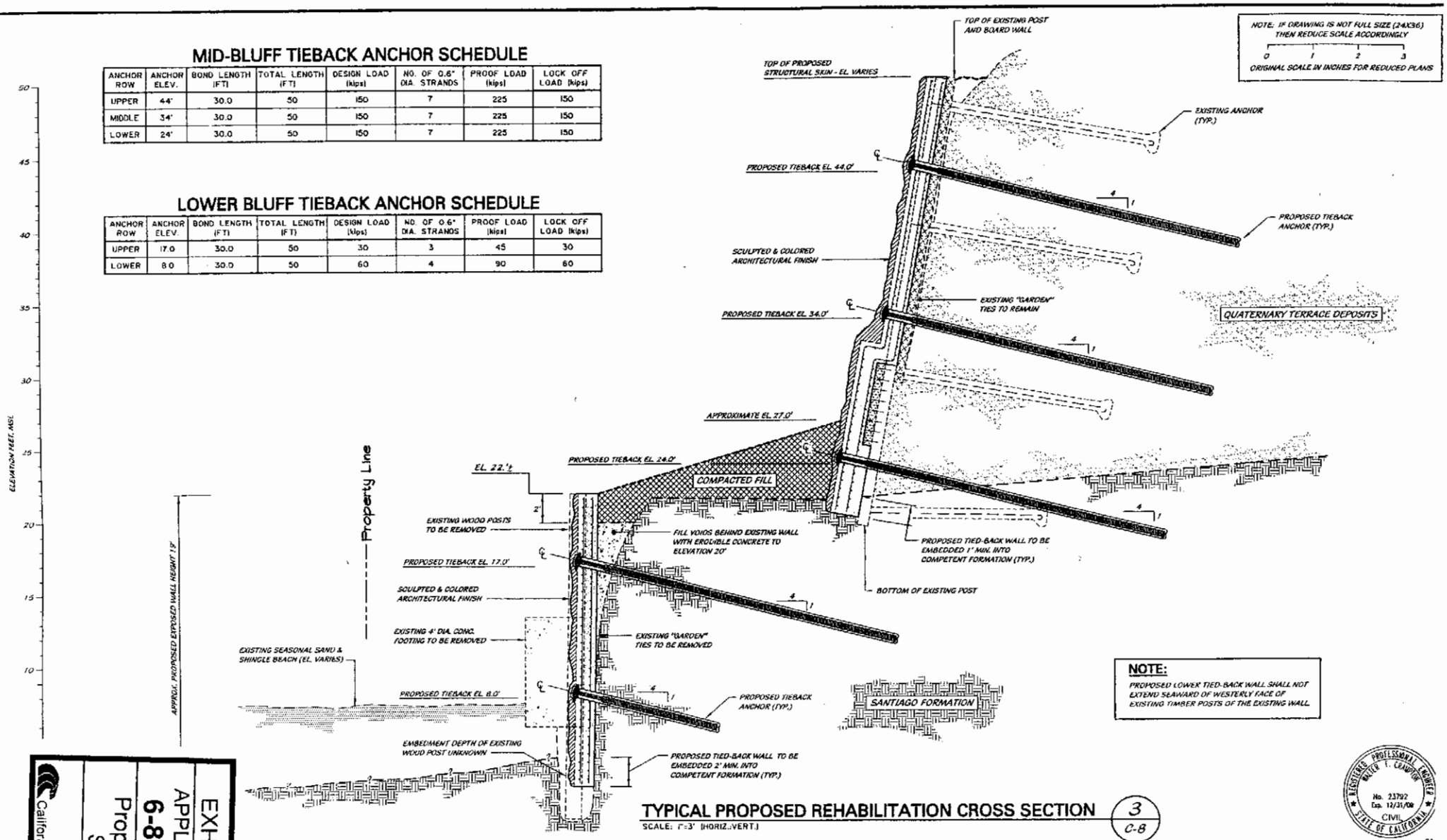
LOWER BLUFF TIEBACK ANCHOR SCHEDULE

ANCHOR ROW	ANCHOR ELEV.	BOND LENGTH (FT)	TOTAL LENGTH (FT)	DESIGN LOAD (kips)	NO. OF 0.6" DIA. STRANDS	PROOF LOAD (kips)	LOCK OFF LOAD (kips)
UPPER	17.0	30.0	50	30	3	45	30
LOWER	8.0	30.0	50	60	4	90	60

NOTE: IF DRAWING IS NOT FULL SIZE (24X36) THEN REDUCE SCALE ACCORDINGLY

0 1 2 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



NOTE:

PROPOSED LOWER TIED-BACK WALL SHALL NOT EXTEND SEAWARD OF WESTERLY FACE OF EXISTING TIMBER POSTS OF THE EXISTING WALL.

TYPICAL PROPOSED REHABILITATION CROSS SECTION

SCALE: 1"=3' (HORIZ.:VERT.)

3
C-8

REGISTERED PROFESSIONAL ENGINEER WALTER T. CRAUSTON No. 23792 Exp. 12/31/08 CIVIL STATE OF CALIFORNIA

21

EXHIBIT NO. 5
APPLICATION NO.
6-88-464-A1
Proposed Cross Sections
California Coastal Commission

CALIFORNIA COASTAL DEVELOPMENT PERMIT

TERRACOSTA CONSULTING GROUP
ENGINEERS & GEOLOGISTS
4455 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CALIFORNIA 92123
(858) 573-5900

DESIGN: WFC
DRAWN: RF
CHECKED: WFC

REVISIONS				
REV.		BY	DATE	APP.

LOWER AND MID-BLUFF TIED-BACK WALLS-1500/1520 NEPTUNE AVE

PROPOSED CROSS SECTION

CITY OF ENCINITAS

RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION
BY:	BY:
R.C.E.: EXP.:	CITY ENGINEER R.C.E.:
DATE:	EXP.: DATE:

DRAWING NO. C-12

SHEET 12 OF 1[illegible]

11-14-08
DATE OF PREP

CALIFORNIA COASTAL COMMISSION
SAN DIEGO COAST DISTRICT
1333 CAMINO DEL RIO SOUTH, SUITE 125
SAN DIEGO, CA 92108-3520
(619) 297-9740

Staff: PBW-SD
Staff Report: 5/31/89
Hearing Date: 6/13-16/89

REVISED FINDINGS

Application No.: 6-88-464

Applicant: John & Barbara Lynch and Mr. & Mrs. Thomas J. Frick Agent: Wayne Holden

Description: Construction of a beach level seawall and upper bluff retaining wall and associated beach access stairway on two lots. The above portion of the project has been completed in apparent violation of the Coastal Act. Also, the construction of a 4,140 square foot single family residence on the northern lot; an existing duplex will remain on the southern lot.

Lot Area (totals)	18,490 sq. ft.
Building Coverage	4,125 sq. ft. (22%)
Pavement Coverage	3,080 sq. ft. (16%)
Landscape Coverage	5,643 sq. ft. (31%)
Unimproved Area	5,642 sq. ft. (31%)
Parking Spaces	6
Zoning	RV-11
Plan Designation	Residential #7 - 10.9 dua
Project Density	4.7 dua
Ht abv fin grade	35 feet

Site: 1500 & 1520 Neptune Avenue, Encinitas, San Diego County. APN 254-040-34 and 254-040-35.

Substantive File Documents: Certified County of San Diego Local Coastal Program; CDP #6-81-205; City of Encinitas Major Use Permit, Design Review and Variance #87-128; County of San Diego Tentative Map #17967; Report of Geotechnical Investigation Proposed Single-Family Residence North of 1500 Neptune Avenue, Encinitas (August 25, with updates).

Date of Commission Action: April 12, 1989

Commissioners on Prevailing Side: MacElvaine, Malcolm, McInnis, Neely, Pratt, Warren, Wright, Ch. Wornum.

SUMMARY OF COMMISSION ACTION: Staff had originally recommended approval of the proposed development with an additional condition which would have required the removal of the reconstructed private beach access stairway. The Commission deleted the requirement that the stairway be removed, but retained the remainder of the special conditions proposed by staff.

SEE SUBSI
FOR COMMI

EXHIBIT NO. 6
APPLICATION NO.
6-88-464-A1
Original Approved Staff Report
Page 1 of 21
California Coastal Commission

PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

I. Approval with Conditions.

The Commission hereby grants a permit for the proposed development, subject to the conditions below, on the grounds that the development 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 impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions.

See attached page.

III. Special Conditions.

The permit is subject to the following conditions:

1. Revised Plans. Prior to the issuance of the coastal development permit, the applicant shall submit revised plans indicating revised foundation plans indicating that the minimum depth of any proposed pier shall be no less than 22 feet below grade. Said plans shall be submitted for the review and written approval of the Executive Director. All other portions of the final plans shall be in accordance with the geotechnical reports by Southern California Soils Testing (August 25, with updates) for the project.

2. Assumption of Risk: Prior to the issuance of the coastal development permit, the applicant [and landowner] shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from bluff failure resulting from wave action or upper bluff erosion and the (b) applicant hereby waives any future claims of liability against the Commission or its successors in interest for damage from such hazards. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens and any other encumbrances which the Executive Director determines may affect the interest being conveyed.

3. Lateral Public Access. Prior to the issuance of the coastal development 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 seaward from the toe of the seawall.

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(s) and the easement area.

4. Open Space Deed Restriction. Prior to the issuance of the coastal development permit, the applicant shall record a restriction against the subject property, free of all prior liens and encumbrances, except for tax liens, and binding on the permittee's successors in interest and any subsequent purchasers of any portion of the real property. The restriction shall prohibit any alteration of landforms, removal of vegetation or the erection of structures of any type in the area shown on the attached Exhibit "3" and generally described as that area between the edge of the coastal bluff and the toe of the seawall, as indicated on the submitted site plan dated 10/22/87 on file in the Commission's office, without the written approval of the California Coastal Commission or successor in interest. The recording document shall include legal descriptions of both the applicant's entire parcel(s) and the restricted area, and shall be in a form and content acceptable to the Executive Director. Evidence of recordation of such restriction shall be subject to the review and written approval of the Executive Director.

5. Landscaping Plan. Prior to the issuance of the coastal development permit, the applicant shall submit a detailed landscape plan indicating the type, size, extent and location of all plant materials, the proposed irrigation system and other landscape features. The plans shall include all improvements proposed seaward of the residence, and no structures or landscaping shall be permitted within 5 feet of the bluff edge. Drought tolerant plant material shall be utilized to the maximum extent feasible. No permanent irrigation systems shall be permitted within 40 feet of the bluff edge. Said plan shall be submitted to, reviewed and approved in writing by the Executive Director.

6. Future Development. Prior to the issuance of the coastal development permit, the applicant shall execute and record a document, in a form and content acceptable to the Executive Director, stating that the subject permit is only for the development described in the coastal development permit No. 6-88-464; and that any future additions or other development as defined in Public Resources Code Section 30106 will require and amendment to permit No. 6-88-464 or will require an additional coastal development permit from the California Coastal Commission or from its successor agency. The document shall be recorded as a covenant running with the land binding all successors and assigns in interest to the subject property.

7. Maintenance Activities/Future Alterations. The property owner shall also be responsible for maintenance of the permitted shoreline protective and upper bluff stabilization devices. Any change in the design of the revetment or future additions/reinforcement seaward of the device will require a coastal development permit. If after inspection, it is apparent repair or maintenance is necessary, the applicant should contact the Commission office to determine whether permits are necessary. The applicant shall also be responsible for the removal of debris that is deposited on the beach or in the water as a result of the failure of the shoreline protective device.

8. State Lands Commission Review. Prior to the issuance of the coastal development permit, the applicant shall obtain a written determination from the State Lands Commission that:

a. No State lands are involved in the development; or,

b. State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or,

c. State lands may be involved in the development, but pending a final determination, an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

9. Public Rights. By acceptance of this permit, the applicant acknowledges, on behalf of him/herself and his/her successors in interest, that issuance of the permit shall not constitute a waiver of any public rights which may exist on the property. The applicant shall also acknowledge that issuance of the permit and construction of the permitted development shall not be used or construed to interfere with any public prescriptive or public trust rights that may exist on the property.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Development Description and History. Proposed is the subdivision of an 18,490 square foot parcel into two parcels of 9,245 square feet, the construction of a seawall and an upper bluff protective device, construction of a beach access stairway and the construction of a 4,140 square foot single family residence on the northern parcel. An existing duplex on the southern parcel will remain. All described activities with the exception of the residential construction have occurred without the benefit of a coastal development permit. The project as proposed has received all necessary local discretionary approvals.

The history, as reconstructed from the available evidence is as follows. On April 20, 1982, the Commission issued CDP #6-81-205 for the reconstruction of and addition to a single family residence at 1500 Neptune Avenue, converting it to a duplex. At the time of this action, there were neither shoreline

protective structures nor beach access stairways present at the site as indicated by the plans submitted with this application.

After the 1982/1983 winter storm season, the shoreline protective devices evident on the property today were constructed. The applicants' representative has indicated that the structures were begun in the summer of 1986. Since no permits from either the Commission or the local government having jurisdiction over the area were obtained prior to construction, the precise date cannot be determined more specifically.

These walls are in two sections, the seawall located at the base of the bluff and the upper bluff stabilization structure located atop the lower wall. Both walls span the entire width of the site, which is 100 feet wide. The lower wall consists of vertical telephone poles approximately 20 feet long and extending 16 feet above the current beach level. The poles are sunk a few feet into formational material. One 20 foot long steel cable extends into the slope face from the top of each of the poles.

The upper wall also consists of 17 telephone poles at angles of from 70 to 80 degrees, approximately 30 feet long. These poles extend about 10 feet into the ground below the wall, and extend approximately two feet into the harder, less erosive sandstone formation underlying the loose surface materials. Each pole is tied into the bluff by two 20 foot long steel cables through deadmen constructed by excavating cylindrical holes which were ultimately back-filled by concrete. These poles support horizontal railroad ties which act as the surface of both the upper and lower walls.

A beach access stairway was apparently constructed in conjunction with the wall system. The stairway consists of one long stairway leading to the beach, with one branch leading to each of the lots created as a result of the subdivision. As previously stated, the plans in the Commission file for CDP #6-81-205 do not indicate the existence of the wall at that time. Although absent from the submitted site plan, a beach access stairway may have existed at this time. However, a review of historic aerial photographs taken in 1973 indicates that no stairway existed at the time that the Commission's jurisdiction over the area was initially established. Additionally, the stairway as it presently exists could not have been constructed as a "repair and maintenance" activity not requiring a coastal development permit.

Both walls were backfilled with silty, sandy material, presumably from either the beach or excavated materials cut off from the bluff itself. All backfill and compaction was performed by hand, and no testing of backfill compaction was undertaken during the construction. Because of the failure to obtain any permits or inspections for the structures, all details, including the as-built plans, were reconstructed on the basis of the visual inspection and the recollections of the designer, and are subject to uncertainty as to constructions materials and methods.

The site of the proposed development is located on the blufftop westerly of Neptune Avenue in the City of Encinitas. The parcel has a distinct westerly

property line which is seaward of the toe of the seawall and contiguous with boundary of Leucadia State Beach, a State Park. The site is surrounded by single family and duplex developments on the east, north and south. The site is planned and zoned for residential development at the densities represented by this application. The site is also subject to the "CD" or Coastal Development regulations as contained in the certified County of San Diego Local Coastal Program (LCP), which regulate the development of blufftop lots and shoreline protective devices.

2. Geologic Hazard. The Coastal Act policies related to construction of shoreline protective devices are as follows:

> 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 erosions and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.
>
> Section 30253.
>
> New development shall:
>
> (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
>
> (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

In the area of the proposed development, the shoreline has been observed to have significantly eroded in recent years. Aerial photographs taken in 1973 indicate that, at that time, a broad, sandy beach existed and was available for beach visitors as part of the Leucadia State Beach area. Access to the beach was available at the Grandview Avenue beach access stairway to the north and at the Beacons Beach access stairway to the south.

Currently, however, virtually no sandy beach is found, except during low tides when some wet sand beach is evident. Beach erosion and bluff retreat have resulted in the closure of the Grandview Avenue stairway, which experienced severe block failures and subsequent undermining of the stair's supports. Beacon's beach, which consists of an at-grade stairway has similarly suffered

considerable erosion, and the stair has been steadily moved landward over the years.

The condition of the beach below the project site is symptomatic of the beaches of this littoral cell. Virtually no sandy beach is found during winter months from Carlsbad south to the northern portions of South Cardiff State Beach. While some sand is deposited over the summer months, and a small sandy beach is created, the long term pattern can best be characterized by general beach loss and bluff erosion in this littoral cell.

As previously stated, the shoreline protective devices that are the subject of this permit application have already been constructed. They have been constructed entirely upon private property, above the mean high tide line, but near the ordinary high water mark. The extreme steepness of the cobble sill prevents wave run-up from hitting the toe of the wall during typical wave and tide conditions, however the sill is not so high as to preclude wave run-up from reaching the wall during extreme high tides and/or storm events.

At this time, due to the construction of the walls without Commission review, the ability to determine the actual hazard to permitted structures and to evaluate alternative structural or non-structural remedies has been eliminated. While there is an existing principal permitted structure located at the project site, the structure is currently located 30 feet from the edge of the bluff. At the time of the previous application for coastal development permit (September, 1981), the distance from the bluff edge to the structure as shown on the plans was 31 feet, and the geotechnical survey (Benton Engineering; September 8, 1981) indicated that, given the internal angle of friction of 33 degrees generally assumed for the soils found in the upper bluff, the existing setback was sufficient to provide for an adequate measure of safety for the structure. In other words, in the seven and one-half years since the previous project, potentially one foot of bluff retreat has occurred.

Pursuant to Section 30253 of the Act, the Commission would only approve either the construction of a new principal structure or the subdivision of land which could result in the construction of a new principal structure in those instances where it could be adequately demonstrated that the site's stability and the proposed setback would provide a sufficient margin of safety for the structures that no shoreline protective device would be required for the economic life of the structures. In this instance, the shoreline devices have already been constructed, without any prior review to determine either their need, the adequacy of the design, or the ability of alternative measures to provide equal or greater protection at lesser environmental cost. That is, their construction has eliminated the ability of the Commission to discuss or choose any alternatives, with the possible exception of the removal of the walls and the denial of the subdivision and the new construction.

An analysis of the walls, as constructed, was conducted as part of the processing of the project by the City of Encinitas. This analysis was updated and augmented consistent with inquiries made of the applicants by Commission staff. The geotechnical analysis of the walls indicates that, based at least in part on the unreliability of the information concerning their construction,

removal of the walls could have impacts upon the stability of the bluff. The construction method employed the excavation of the bluffs for the installation of "dead-men" in the bluff itself. The updated geotechnical analysis has indicted that the removal of these deadmen and the structures that they support could, in itself, render the bluff unstable and increase the danger to the existing residence resulting from bluff failure. This is true for removal of all of the seawall, including that portion of the wall located below the undeveloped parcel.

Given that the removal of the walls will, itself, render the bluffs unstable, the Commission is not afforded the alternative of requiring the removal of the walls to resolve the violation and bring the site into compliance with Chapter 3 policies. The only options remaining to the Commission are the approval of the project, either as submitted or with modifications to bring the project into consistency with Chapter 3 policies to the extent feasible under current circumstances, or to approve the wall system and deny the subdivision of land and construction of the residence on the newly created parcel.

While the Commission recognizes that the denial of the subdivision is feasible, the denial of the subdivision and the ultimate residential construction on the newly created parcel will have little material effect on the site. The wall system is already in place, and neither the subdivision nor the new construction will increase the instability of the site or result in any additional risk to structures over that already experienced at the site. The geotechnical analysis presented with the application indicates that, given the proposed setback and foundation system, the proposed residence will not be threatened by significant bluff retreat within its economic life of 75 years.

In its review of the project, however, the Commission is mindful that disagreement exists among experts regarding the analysis of risks associated with blufftop development. The analysis associated with the submitted geotechnical review utilized an internal angle of resistance of 35 degrees, resulting in a recommended foundation design of grade beams on piers sunk 11 feet deep. Analysis by Commission staff, based, in part, upon the uncertainties in the design and construction of the wall system resulting from the inability of any responsible agencies to review site conditions or proposed plans prior to the construction, suggests that an angle of repose of 25 degrees may be more appropriate. In order to provide for the potential failure of the slope based upon the 25 degree angle of repose, caissons should be placed to a depth of 22 feet. That is, in order to insure that the foundation of the proposed structure would remain behind the potential line of failure, caissons must be placed to this depth.

Special Condition #1 has been proposed to require that revised plans be submitted in conjunction with the proposed project. These plans must indicate that the proposed caissons will be sunk to a depth of not less than 22 feet below existing grade. This will insure the ultimate stability of the structure even if the in-place wall system fails, consistent with Section 30253.

Section 30253 requires that new development minimize risks to life and property. The subject site is located in a hazardous area as evidenced by the past damage from storms and the applicant's desire to protect his property through the construction of the wall system. Although the presence of the walls will substantially reduce the possibility of future damage, it will in no way eliminate such danger.

Even with shoreline protection, there remains an inherent risk in any development along the beachfront. Therefore, the attached Special Condition #2 requires the applicant to execute an assumption of risk document which limits the Commission's liability in permitting the development. Pursuant to Section 13166(a)(1) of the Commission's administrative regulations, an application may be filed to remove the attached condition from this permit if new information is discovered which (1) tends to refute one or more findings of the Commission regarding the existence of any hazardous condition affecting the property and (2) could not, with reasonable diligence, have been discovered and produced at or before the original hearing on the permit. Therefore, as described and conditioned, the project may be found consistent with all applicable Chapter 3 policies.

In order to avoid additional future impacts to the bluff, Special Condition #4 has been proposed. This would require that the bluff be placed in open space, and that the any alteration of the bluff or wall system, for any reason, would require the written permission of the Commission. Special Conditions #5 and #6 would also provide for increased protection, limiting any improvements on the site to those approved in this application, requiring future Commission review for any improvements to the structures on the site, including the existing duplex on the southerly parcel, and requiring the submittal of landscape plans which indicate both the removal of any permanent irrigation systems which may be in place in the setback or on the bluff face and the planting of drought tolerant materials.

Finally, Special Condition #7 has been proposed to place the applicants on notice that they will be responsible for removal of any debris resulting from the failure of the wall system or any of its components. Special Condition #7 also places the applicants on notice that a permit may be required for maintenance to the wall system and its associated structures.

Given these special conditions, the proposed shoreline protective devices are consistent, to the degree feasible, given the absence of opportunity to review or suggest alternatives, with Sections 30235 and 30253 of the Act. Although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Approval of the permit does not constitute a waiver of any legal action with regard to this violation of the Coastal Act that may have occurred; nor does it constitute admission as to the legality of any development undertaken on the subject site without a coastal development permit.

3. Public Access. Given the adverse effects of seawalls on shoreline processes as will be documented in the following findings, the Commission must

now turn its attention to the overall impact that these changed shoreline processes will have on public access. The proposed development will occur in an area that, while on private property as indicated by the documented western property line, is subject at least at time to wave run up and inundation. In addition, the area seaward of the toe of the bluff is an area that has been traditionally available for the use of the public. This is particularly true given existing beach profiles and the relatively narrow beach. At higher tides and winter beach profiles, the public would be forced to walk virtually at the toe of the seawall.

The public has ownership and use rights in the lands of the State seaward of the ordinary high-water mark. Seawalls affect the public's ownership and use rights by tending to eventually fix the line of mean high tide at or near the seawall. This interference with a dynamic system then has a number of effects on the public's ownership interests. First, changes in the shoreline profile, particularly changes in the slope of the profile, alter the useable 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 lines of mean low water and mean high water. This reduces the actual area in which the public can pass on property over which it has rights of access, and therefore adversely affects public access. The recent work by Gary Griggs demonstrates that a beach in front of a seawall is narrower than a beach not affected by a seawall along the same stretch of coastline. The effect of that narrowness is to reduce the area located seaward of the ordinary high water mark (or mean high water mark) that would otherwise be available for public use. This effect can occur even where the maximum summer width of the beach is essentially unchanged, and represents a temporal loss of access due to seawall construction.

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 effects of this on the public are again a loss of useable tidelands area where the public has use rights. Third, seawalls cumulatively affect public access by causing greater erosion on adjacent public beaches. The recent work at Oregon State University demonstrates the magnitude of this impact, which is of greater concern as more of California is armored.

Fourth, seawalls, by their occupation of beach area which may be seasonally either subject to wave action or actually below the most landward locations of the mean high tide line, interfere directly with areas of the beach in which the public has ownership interest or public trust related rights. Also, materials attached to the seawall fall off and roll onto the sandy beach where they may also present physical hazards and obstacles to access. Finally, the Commission finds that because it will formalize the public's right to use for recreational purposes an area of the beach where permission for use could otherwise be withdrawn, a dedication of an easement in favor of the people of the State of California over the area lying between the toe of the wall and the western property boundary will operate directly to compensate the public for, and thus alleviate, the burdens described above.

Special Condition #3 requires the applicant to record an offer to dedicate an easement for lateral access along the shoreline to cover that portion of private property located seaward of the toe of the seawall. This will serve to protect potential presciptive rights which may exist seaward of the wall. Additionally, Special Conditions #8 and #9 have been proposed to require that the applicant obtain the review of the State Lands Commission, to insure that no State lands will be involved in the proposal, and to acknowledge the potential for public rights having been established upon the property.

Although the seawall appears to have been placed at the toe of the pre-existing bluff, minimizing encroachment onto the beach and impact on adjacent properties, the Commission finds these measures insufficient to fully mitigate the effects of the seawall on shoreline sand supply. Thus, only as conditioned to require the dedication of a public access easement can the Commission find the project consistent with Sections 30235, 30210 and 30212 of the Coastal Act.

In addition, the preliminary staff recommendation included a special condition requiring the removal of the reconstructed private beach access stairway. The Commission finds, however, that the reconstructed stairway merely replaced a stairway that existed prior to the construction of the wall, and that its reconstruction was not inconsistent with Chapter 3 policies, as it constituted merely a replacement of a storm damaged structure.

6. Effects of Seawalls on Shoreline Processes. As previously stated, the device in question consists of two separate walls: an erosion control wall at beach level serving as a seawall and an upper bluff retaining structure located at the top of the erosion control wall. The structures have already been constructed, in apparent violation of the Coastal Act.

A. There is an ongoing debate over the effects of seawalls on shoreline stability. The proposed project involves a shoreline structure which will affect the configuration of the shoreline and the beach profile and have an adverse impact on the shoreline. The precise impact of shoreline structures on the beach is a persistent subject of controversy within the discipline of coastal engineering, and particularly between coastal engineers and marine geologists. Much of the debate focuses on whether seawalls or other factors (such as the rise of sea level) are the primary cause of shoreline retreat. This debate tends to obscure the distinction between the long term trends of the shoreline, and the effects of seawalls on those long-term trends, and the shorter term effects that might not be permanent but may significantly alter the width and utility of a beach over the course of a year. The long term and short term effects of seawalls will be discussed separately below.

The Coastal Act recognizes that protective devices may be needed to protect existing structures, that such structures may alter shoreline processes, and that those alterations should be minimized and mitigated. The ongoing debate in the literature does acknowledge that seawalls have some effect, at least on the supply of sand. A succinct statement of the adverse effects of seawalls, and the viewpoint of coastal geologists that view beach processes from the perspective of geologic time, is contained in Saving the American Beach: A

Position Paper by Concerned Coastal Geologists (March 1981, Skidaway Institute of Oceanography) which was signed by 94 experts in the field of coastal geology (page 4):

> 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.

It is widely recognized that large structures such as groins and breakwaters will have significant and obvious impacts on sand supply and beach profiles, but even a relatively small structure such as the one proposed can have an impact on the site and the adjoining area. As stated in a publication by the State Department of Boating and Waterways (formerly called Navigation and Ocean Development), Shore Protection in California (1976) (page 30):

> 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.

This impact is reiterated in the paper, "Economic Profiling of Beach Fills" by Herman Christiansen which is contained in the proceedings of Coastal Sediments '87 (November 1987). It states (page 1047):

> Observations at some of the investigated beaches have shown that an optimal profile becomes instable, if structures, such as rocks, groins, revetments, piles, stairs etc., are placed within the wave action zone of a beach. Steady erosions, caused by complex high turbulent surf currents, lead to heavy sand losses.

In contrast to the perspective of coastal geologists, a number of coastal engineers argue that seawalls are symptoms of coastal erosion rather than causes. At least in part, the perspective of coastal engineers reflects their perspective of a time scale that involves the life of a structure. This viewpoint is perhaps best expressed by the renowned expert in beach processes R. G. Dean, who attributes changes in beach profiles to erosion rather than structures, in this discussion from "Coastal Sediment Processes: Toward Engineering Solutions" in Coastal Sediments '87 (page 22):

> Placed along a shoreline with an erosional trend, armoring can perform the intended function of upland stabilization while the adjacent shoreline segments continue to erode. The resulting offset between stabilized and unstabilized segments may be interpreted incorrectly that the armoring has caused the adjacent erosion.

Dean's article goes on to acknowledge potential adverse effects and the responsibility for mitigation of those effects (page 23):

> ...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.
>
> If armoring is deemed warranted to protect a threatened structure and if rational assessment concludes that installation of the armoring would adversely affect the shoreline, mitigation in the form of periodic additions of beach quality sediment should be considered.

Research on the effects of seawalls continues, and many of the results are not yet available. Much of the research is anecdotal, with diminished beach width evident, but the major causes not clearly identified. The potential role of seawalls remains disturbing, as noted in the conclusion to "Coastal Erosion on the Barrier Islands of Pinellas County, West-central Florida', by William O. Sayre, also in Coastal Sediments '87 (page 1049):

> In two years of surveying, beach erosion and recovery on the barrier islands of Pinellas County has been measured. An undeveloped island's beach recovered quickly after winter-time and hurricane-caused erosion. A highly developed beach without a seawall and near a jetty fared almost as well, recovering more slowly, but showing no net erosion over the two year period. The two other sites, on highly developed barriers and backed by seawalls, have suffered greatly. One narrow beach was completely destroyed by a hurricane and only partially recovered. The other was reduced by at least a quarter and was artificially nourished.

The Commission notes the continuing debate over the effects of seawalls, the lack of convergence in the literature, and the strong identification of viewpoints with the disciplines of coastal engineering and marine geology. The Commission does not believe that it is entirely accidental that this debate has arisen between disciplines with such fundamentally different perspectives on the time scale involved in analyzing physical processes. The Commission believes that more information can be shed on this subject through explicit consideration of long term and short term processes active on a beach.

B. The effects of a protective device on an eroding shoreline. The location of a proposed shoreline structure on the seasonal profiles of a beach (that is, the proximity of the structure to the waves), and the overall erosion pattern of a beach, are two key factors that determine the impact of seawalls. Although debate persists as to whether a shoreline structure is the cause or merely a symptom, it is generally agreed that where a beach is eroding, a seawall will come to define the boundary between the sea and the upland. H.V. McDonald and D.C. Patterson state, in "Beach Response to Coastal Works Gold Coast, Australia" in Coastal Engineering 1984 (page 1537):

> On the persistently eroding beaches at North Kirra and Palm Beach, the receding beachline has effectively placed the seawall progressively further and further seaward on the beach profile until no beach exists at all in front of the wall. Clearly, the establishment of fixed seawall alignments on persistently eroding sections of beach will lead eventually to loss of the beach as a useful recreational amenity.

Whether or not the seawall or erosion leads to the loss of the beach continues to be debated in the literature, but the distinction does not alter the result: when the beach in front of the structure disappears over time the natural shoreward migration of the beach is blocked by the structure. The net effect is documented in a recent National Academy of Sciences Study "Responding to Changes in Sea Level, Engineering Implications" (1987), which provides (page 74):

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

While the experts continue to discuss the exact manner in which seawalls affect shoreline processes, the Commission must make decisions about specific projects. The Commission notes that the debate focuses on the cause of erosion rather than the loss of the beach, and begs the critical factual question of whether or not the beach disappears.

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, from sea level rise or from other causes, the entire profile of the beach also retreats. However, this process stops when the retreating shoreline comes to a seawall. While the shoreline on either side of the seawall continues to retreat, shoreline retreat in front of the seawall stops. Eventually, the shoreline protected by the seawall protrudes into the water, with the winter MHT fixed

at the base of the structure. The Commission is led inexorably to the conclusion that if the seawall works effectively on a retreating shoreline, it results in the loss of the beach, at least seasonally. If the shoreline continues to retreat, however slowly, the seawall will be where the beach was, and where the beach would be absent the presence of the seawall. This represents the loss of a beach as a direct result of the seawall. The Commission has observed this phenomena up and down California's coast, where a seawall has successfully halted the retreat of the shoreline, but only at the cost of usurping the beach. Although this may occur only slowly, the Commission concludes that it is the inevitable effect of constructing a seawall on an eroding shoreline. For such areas, even as erosion proceeds, a beach would be present in the absence of a seawall.

The Commission's previous observations about the effects of seawalls on access have been upheld in previous decisions. In the case of Whalers' Village Club v. Cal. Coastal Commission (1985) 173 Cal.App.3d 240, 259-261 [220 CR 2], Cert. Denied 106 S.Ct. 1962 (1986), the Court of Appeal analyzed in the following terms the legal sufficiency of the adverse impacts discussed in these findings to justify a lateral access dedication:

> Respondent challenges the nexus between the Commission's finding that the revetment imposes a burden on the public which justifies imposition of the access condition and the evidence in the record. [Citation omitted.] In point, respondent argues that the Commission found a public "burden" because seawalls in general tend to cause additional sand scour on any historically eroding beach but did not find that this particular revetment cause such damage. [Emphasis in original.]
>
> ...
>
> There is substantial evidence in the administrative record to support the staff's conclusion that seawalls and revetments tend to cause sand loss from beach areas in front of and adjacent to them even if they protect immediate structures. Studies cited in staff reports...confirm the staff's finding that "by artificially building up the slope of the shore area, seawalls and revetments of this type tend to cause a landward retreat of the mean high tide line,...."
>
> ...
>
> Staff reports...referred to surveys of the Army Corps of Engineers and other experts concerning shoreline erosion along the California coast and, in particular, beach erosion in Ventura County. The Commission [thus] had sufficient information before it to conclude that, due to construction of this revetment and others up and down the coast, the erosive nature of the beaches in Ventura County coupled with the tendency of seawalls and revetments to increase the sand

> loss on beaches with a tendency to recede constitutes a cumulative adverse impact and places a burden on public access to and along State tide and submerged lands for which corresponding compensation by means of public access is reasonable. [Emphasis in original; citations omitted.]

C. The effects of shoreline structures on an "equilibrium" shoreline. The term equilibrium cannot accurately be applied to a feature that varies as much as a shoreline. Almost all California beaches vary dramatically in profile between winter and summer; the variation in the width of beach that can accompany that seasonal change can be over 200 feet. The persistent analytical problem in dealing with shore processes in California is to try to discern long-term trends in shoreline change from the normal, seasonal variation. The term "dynamic equilibrium" has come into use and has been applied to beaches that vary seasonally in width, but are approximately the same when summer (or winter) profiles are compared over a number of years. Essentially, a beach in dynamic equilibrium is one where the supply and loss of sand are in approximate balance (See Griggs and Jones, 1984). This term must be used with some caution, as there will be some variation in width even seasonally, shown graphically by J. W. Johnson in "Seasonal Bottom Changes, Bolinas Bay, California", Proceedings of the Twelfth Coastal Engineering Conference, September 13-18, 1970. That variability can mask long term changes (either erosion or accretion) unless sufficient data is available to detect a clear direction. This discussion will be equally applicable to shorelines that are in truly in "dynamic equilibrium", that is, not eroding on the long term, and to shorelines that are eroding at a relatively slow rate so that seasonal changes are approximately the same when viewed in the time frame of a few years.

The question of the effects of seawalls on shorelines that are in 'dynamic equilibrium' is more complicated, and research on the effects is even more anecdotal. At the same time, because the short-term effects may be of great importance, much more rigorous data collection is required in order to establish any clear effects. The Corps of Engineers has begun funding research efforts into the effects of seawalls through their Coastal Engineering Research Center (CERC). One of the research efforts funded by CERC is that of Professor Gary Griggs of UC Santa Cruz. Professor Griggs is monitoring the profiles of beaches in Monterey Bay over the course of several years, and comparing the profiles of beaches with seawalls to control beaches without seawalls. Professor Griggs has completed work during the relatively storm-free winter of 1985-86, and presented his results on October 30, 1987 before the 1987 Conference of the California Shore and Beach Preservation Association. Professor Griggs is the author of various popular and technical works on beach processes and recently chaired a technical discussion of the effects of seawalls on beaches at "Coastal Sediments '87", a specialty engineering conference in coastal sediment processes. Griggs' work appears to establish two distinct effects of seawalls. First, beach profiles in front of seawalls differ from profiles along the control beaches selected during the process of beach erosion. Although the beach profiles are similar at their most accreted (summer profile) stage and at their most eroded (winter profile) stage, the beaches monitored were narrower and steeper in front of seawalls

during the period when the beach was eroding from the summer profile to the winter profile. This difference represents a temporal loss in beach width in the short term, even where the time series is of too short a duration to detect erosion patterns on the beach. Second, beach profiles at the end of a seawall are further landward than natural profiles. This effect appears to extend for a distance of about 6/10 the length of the seawall. This effect represents both a spacial and temporal loss of beach width directly attributable to seawall construction. Dr. Griggs' own conclusion about the effects of seawalls, in a manuscript submitted to the Journal of Coastal Restoration titled "The Impacts of Seawalls on Beaches" is:

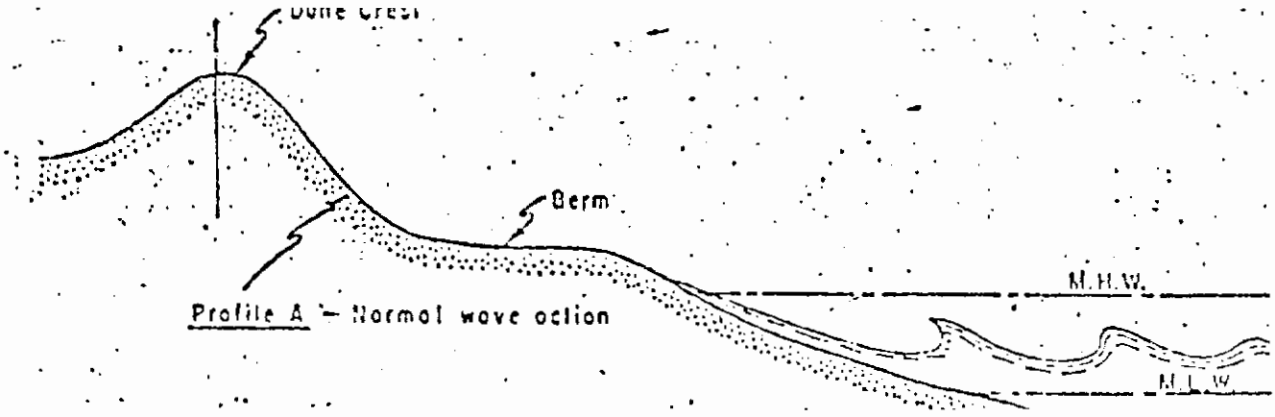
> Based on 12 months of surveying at 4 locations in northern Monterey Bay (including a winter of only mild or moderate wave conditions) where seawalls or revetments abut unprotected beaches, some consistent seasonal beach changes have been documented. These changes or differences in beach profiles are a result of greater wave reflection from the protective structures than from the adjacent control beaches. All of these changes observed in this study appear to be temporary or seasonal in nature and are best developed in the fall and winter months during the transition from summer swell to winter storm conditions.
>
> The seasonal effects documented include:
>
> 1) Loss of the summer berm sooner in front of all seawalls relative to adjacent unprotected control beaches.
> 2) Erosion of the berm in front of a vertical impermeable seawall (due to greater wave reflection) before berm loss on an adjacent beach backed by a permeable sloping revetment.
> 3) A lack of significant difference in winter beach profiles seaward of seawalls or revetments and adjacent control beaches.
> 4) Loss of beach up to 150 m downcoast from seawalls due to reflection from end of structure.
> 5) Late spring/summer berm rebuilding takes place independently of any protective structure leaving a uniform alongshore berm crest.

The Commission concludes from this information that seawalls have serious adverse effects on the width of the beach, even when examined over a relatively short period on a beach that might not be eroding. Although the beach profile at its widest and narrowest may not differ significantly, the beach width and utility will differ markedly during the period when the beach is changing from summer to winter profile. These effects have been observed by the Commission's staff over the years, and can lead to a situation where there is a narrow but usable beach on an unprotected portion of the beach, while the adjacent, protected beach is not passable.

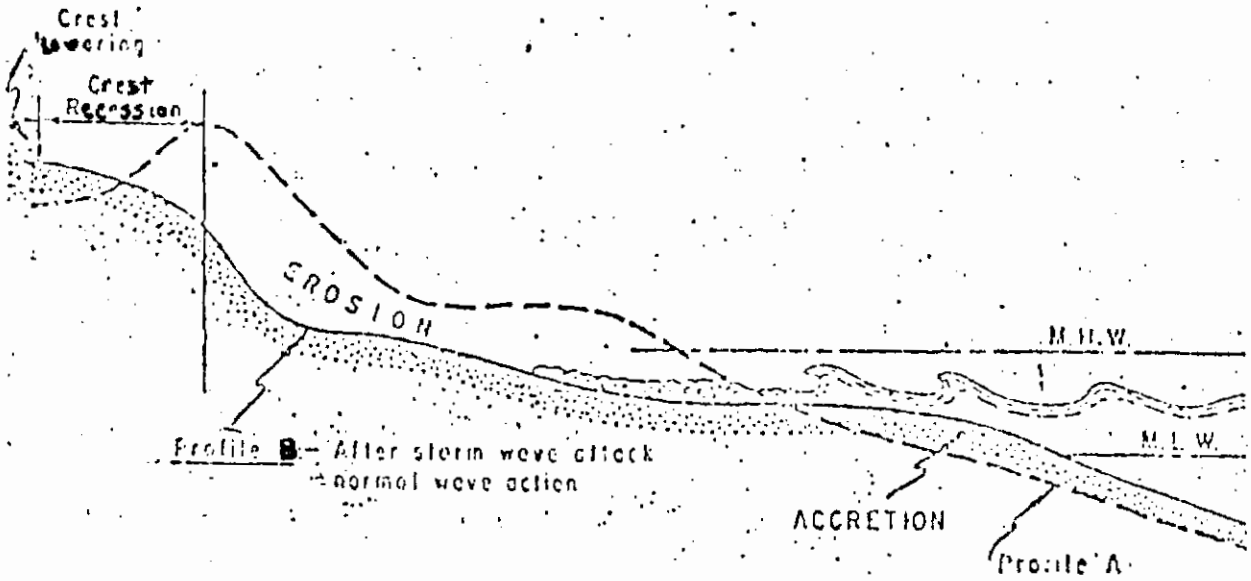
The 1981 statement signed by 94 respected coastal geologists indicates that important public interests in shoreline resources can be harmed through the introduction of shoreline defense structures. Thus, in evaluating an individual project, the Commission must assume that the principles reflected in 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.

D. Mechanisms of Impact. Concerns about adverse impacts on sand supply particularly apply to vertical seawalls such as the one proposed because they reflect most wave energy. This is a well-known impact of vertical seawalls. For example, the generally accepted "standard" for designing shoreline structures, the U.S. Army Corps of Engineers' Shore Protection Manual (1983) has several references to the proficiency of vertical seawalls to reflect wave energy and as a result scour the beach it fronts (see pages 1-16, 2-113, 5-4, 6-15). This impact can be lessened somewhat by the placement of rock (or rubble) at the base of the wall, but nevertheless, the wall will still cause scour and steepening of the beach profile.

A discussion of the physical processes of wave run-up on a natural shore will help establish the effects of seawalls on shoreline processes. Sandy beaches are dynamic systems, the individual grains of sand adjust quickly to reflect both the overall supply of sediment and the ongoing forces of waves. A typical non-storm profile of the beach looks like this: (from "Shore Protection in California, DNOD, 1976)

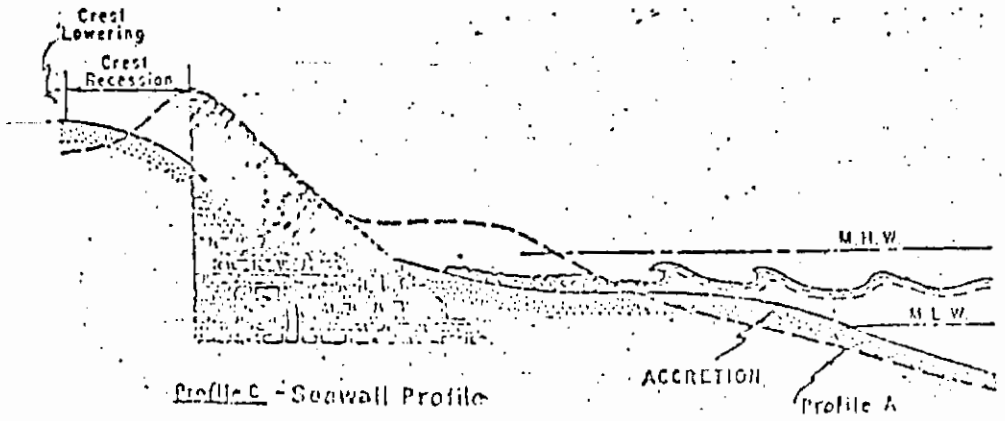


At this profile, the shore has adjusted to a low-energy wave environment, reflecting the short period, low energy waves that strike the beach. The next diagram shows how a beach adjusts to longer period, higher energy waves:



This cross section illustrates several important things about the beaches' adjustment to the higher energy of striking waves. First, the wave energy has eroded material from the foreshore and deposited the material off-shore in a bar. Second, the shoreline profile flattens to absorb the greater amount of wave energy, even with waves breaking on the bar. These adjustments are fundamental to the shore's adjustment to high wave energy. The migration of the material to an off-shore bar causes waves to break in deeper water, and begins the process of energy dissipation far from the inland extent of the beach. The dynamic process of eroding material from the foreshore enables the shoreline to absorb wave energy. This process goes on continuously, if a given shore profile is not sufficient to absorb wave energy without further erosion, additional material is moved from the shore to the bar to increase the distance between the bar and the inland extent of the wave uprush. The value of the bar cannot be over-emphasized, it is on the bar that winter waves break, and the dynamic processes of the actual shoreline are affected by wave uprush, not actual breaking waves.

The next diagram was made by superimposing a revetment on the shoreline profiles that we saw in the last diagram:



This diagram illustrates dramatically the effect of a seawall on the shoreline. The material shown in cross-hatching is the material formerly available to nourish the bar. This material is now unavailable because it is either behind the seawall, or has been replaced by the seawall. As a result, the bar receives less nourishment. This makes the bar less effective in causing waves to break offshore, and results in greater wave energy reaching the shoreline. That energy is then dissipated by uprush and reflection against the face of the revetment. However, since more energy comes on-shore, more energy is reflected and sand is scoured from the base of the revetment. The Commission concludes from the opinion of experts and from an analysis of the process of shoreline dynamics that placement of a seawall within the areas of a shore affected by those processes adversely affects shoreline processes in front of the seawall as well as property on either side of the seawall. Obviously the impact of a seawall is greater the more often it is exposed to wave attack, and seawalls located far up the beach have less impact than seawalls lower on the beach.

6. Local Coastal Planning. Section 30604 (a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made. As stated above, the subject proposal, as conditioned, is consistent to the maximum extent feasible with the applicable policies of Chapter 3 of the Act.

The subject site was previously in the County of San Diego Local Coastal Program (LCP) jurisdiction, but is now within the boundaries of the City of Encinitas. The City is in the process of preparing for the Commission's review a new or revised LCP for the area.

Because of the incorporation of the City, the certified County Local Coastal Program no longer serves as the valid LCP for the area. However, the issues regarding protection of coastal resources in the area have been addressed by the Commission in its review of the County of San Diego LUP and Implementing Ordinances. As such, the Commission will continue to utilize the County LCP documents for guidance in its review of development proposals in the City of Encinitas until such time as a new or revised LCP is submitted by the City.

The San Diego County LCP contains special overlay areas where sensitive coastal resources are to be protected. The subject property falls within the "CD" or Coastal Development overlay area. The CD regulations sought to limit the construction of seawalls to those areas that truly were subject to hazard, similar to the requirements of Section 30235 of the Act. In addition, the City of Encinitas has prepared a draft "Coastal Bluff Overlay" ordinance which contains many of the provisions of the previously applied CD overlay.

Similar to the Commission, the City of Encinitas may not have been able to make the finding that the shoreline protective devices were necessary to protect the existing structure on the project site. However, given that the structures have already been constructed and, in fact, may have contributed to

the instability of the bluff and are now required to maintain the bluff's stability, the City of Encinitas has given approval to the entire project, despite the apparent inconsistencies with either the certified CD or draft Coastal Bluff Overlay ordinances.

The density of the proposed development subsequent to the lot split is consistent with the applicable plan and zone designations applied to the site both by the certified County of San Diego LCP and the draft land use plan currently under review at the City of Encinitas. In addition, the City has approved a front yard setback variance to allow for the bluff setback proposed in this application. The Commission finds the proposed development, as conditioned, conforms to Coastal Act Chapter 3 policies and with the special area regulations contained in the certified County of San Diego LCP. The development's approval, as conditioned, therefore, will not prejudice the ability of the City of Encinitas to complete a certifiable Local Coastal Program.

STANDARD CONDITIONS:

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

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

3. Compliance. All development must occur in strict compliance with the proposal as set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

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

5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.

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

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

COMMISSION ACTION ON JUN. 16 1988

(8464r)

☑ Approved as Recommended
☐ Denied as Recommended
☐ Approved with Changes
☐ Denied

CALCULATION OF MITIGATION FEE FOR IMPACTS TO SAND SUPPLY
PROPOSED LOWER AND MID-BLUFF TIED-BACK WALLS
1500/1520 NEPTUNE AVENUE
ENCINITAS, CALIFORNIA

Basic Equations:

$$M = V_t \times C \quad (1)$$

where,

M = mitigation fee,

V_t = total volume of sand required to replace losses due to the structure, and

C = cost per cubic yard of sand

$$V_t = V_b + V_w + V_e \quad (2)$$

where,

V_b = the amount of beach material that would have been supplied to the beach if natural erosion continued or the long-term reduction in the supply of bluff material to the beach, over the life of the structure; based on the long-term average retreat rate, design life of the structure, percent of beach quality material in the bluff, and bluff geometry (cubic yards)

V_w = the long-term erosion of the beach and nearshore resulting from stabilization of the bluff face and prevention of landward migration of the beach profile; based on the long-term average retreat rate, and beach and near-surface profiles (cubic yards)

V_e = the volume of sand necessary to replace the area of beach lost due to encroachment by the sea cave infill; based on the infill design and beach and nearshore profiles (cubic yards)

$$V_b = (R \times L \times W \times H \times S)/27 \quad (3)$$

where,

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R = long-term regional bluff retreat rate (ft/yr),

L = design life of armoring without maintenance (yr),

W = width of property to be armored (ft),

H = total height of armored bluff (ft),

S = fraction of beach quality material in the bluff material,

$$V_w = R \times L \times V \times W \quad (4)$$

where,

R = long-term regional bluff retreat rate (ft/yr),

L = design life of armoring without maintenance (yr),

v = volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall, and

W = width of property to be armored (ft),

$$V_e = E \times W \times V \quad (5)$$

where,

E = average encroachment of infill, measured from back of notch or back beach (ft),

W = width of property to be armored (ft), and

V = volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the infill.

Site-specific values for equation variables:

C = $16.48 per cubic yard to purchase and deliver sand

R = 0.27 ft/yr

L = 30 years

W = 100 feet

S = 0.75

H = 80 feet

V = 0.9 cubic yards per square foot of beach

E = 2.50 feet

Utilizing equation (3):

$$V_b = \frac{0.27 \, x \, 30 \, x \, 100 \, x \, 80 \, x \, 0.75}{27}$$

$$V_b = 1800 \; yard^3$$

Utilizing equation (4):

$$V_w = 0.27 \, x \, 30 \, x \, 0.9 \, x \, 100$$

$$V_w = 729 \; yard^3$$

Utilizing equation (5):

$$V_e = 2.50 \, x \, 100 \, x \, 0.9$$

$$V_e = 225 \; yard^3$$

Utilizing equation (2):

$$V_t = 1800 + 729 + 225$$

$$V_t = 2754 \; yard^3$$

Utilizing equation (1):

$$M = 2754 \; x \; \$16.48/yd$$

$$M = \$45{,}385.92$$

Sand Mitigation Fee Parameters

W	=	100 ft
E	=	2.50 ft
V	=	0.9 cy/sf
R	=	0.27 ft/yr
L	=	30 yr
S	=	75%
H	=	80 ft
C	=	$16.48/cy