CALIFORNIA COASTAL COMMISSION
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REGULAR CALENDAR
STAFF REPORT AND PRELIMINARY RECOMMENDATION

Application No.: 6-98-134

Applicant: Keith Presnell, Richardson Trust, Buzz Colton, William Bennett, Marc Paskin, Lee Stroben, Terry Lingenfelder, Harold Scism

Agent: Walt Crampton

Description: Construction of a 352-foot long, 35-foot high, 2 ½ foot thick colored and textured shotcrete tied-back seawall along the base of a coastal bluff below eight single-family residences and construction of an approximately 70-foot wide geogrid reinforced slope along the upper bluff at the site of a bluff collapse below 261 Pacific Avenue. Also proposed is the placement of 30-foot circumference geotubes filled with a total of 2,500 cubic yards of sand located approximately 25 feet seaward of the of the base of the bluff, for a distance of 400 feet, and placement of 3,500 cubic yards of sand between the geotubes and the bluff to create a construction pad. The 6,000 cubic yards of sand would remain in place after construction as beach nourishment material. The applicants are also proposing to spray a clear liquid polymer soil stabilizer on the bluffs below the single-family residence as a temporary measure to help stem the daily sand loss from wind erosion.

Zoning	Open Space/Recreation
Plan Designation	Open Space/Recreation

Site: Public beach and bluff face below 249, 255, 261, 265, 269, 301, 309, 311 Pacific Avenue, Solana Beach, San Diego County. APN 263-312-10, -09, -08, -28,-06, -05, -04, -03.

STAFF NOTES:

Summary of Staff's Preliminary Recommendation:

Staff is recommending approval of the proposed seawall. The applicant has demonstrated that the existing bluff-top residences are in danger from erosion. While the

proposed 35-foot long seawall will have impacts on shoreline processes, public access, landform alteration and the visual quality of the area, the proposed wall is the least environmentally damaging feasible alternative to protect the existing structures. Special Conditions have been placed on the project to mitigate the project's impact on scenic quality, public access and recreational opportunities and shoreline sand supply. The conditions require a deed restriction acknowledging that alternative measures must be implemented on the applicants blufftop property in the future, should additional stabilization be required, which would avoid additional alteration of the natural landform of the public beach or coastal bluffs, but would stabilize the principle residential structures and provide reasonable use of the property. The recommended conditions also require the applicant to pay a beach sand mitigation fee, in-lieu of placing the total amount of required sand on the beach, to mitigate the direct and long-term impacts on shoreline sand supply. Other conditions involve the timing of construction, the appearance of the wall, long-term monitoring of the seawall and bluffs, and of approval from other agencies.

Public opposition to the project has raised concerns regarding the impact the project will have on shoreline processes, landform alteration, and visual quality.

Substantive File Documents: City of Solana Beach General Plan and Zoning Ordinance; Group Delta Consultants (GDC) "Sand Resource Quality Evaluation" 6/12/98; GDC "Shoreline Erosion Study North Solana Beach," 8/20/98; GDC "Emergency Permit Application for Coastal Bluff Stabilization 261 Pacific Avenue," 10/7/98; GDC "Coastal Development Permit Application 249-311 Pacific Avenue" 11/9/98; GDC "Response to Review Comments 249-311 Pacific Avenue" 12/3/98.

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. Final Plans. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit for review and written approval of the Executive Director, final seawall, site, landscape, irrigation and drainage plans that include the following measures to mitigate the impacts of the seawall and address overall site stability. Said plans shall first be approved by the City of Solana Beach and include the following:

a. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the seawall. Said plans shall confirm, and be of sufficient detail to verify, that the seawall color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the color of the fill material.

b. The seawall shall conform as closely as possible to the natural contour of the bluff.

c. Any existing permanent irrigation system located within the geologic setback area (40 feet from the bluff edge) on any of the eight bluff top sites shall be removed or capped.

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

e. Existing accessory structures in the geologic setback area on any of the eight sites shall be detailed and drawn to scale on the final approved site plan.

f. During construction of the approved development, disturbance to sand and intertidal areas shall be minimized to the maximum extent feasible. All excavated beach sand shall be redeposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or for any other purpose as construction material.

The permittee 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 required.

2. Mitigation for Impacts to Sand Supply. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of $21,060 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 would be lost due to the impacts of the proposed protective structure. The methodology used to determine the appropriate mitigation fee for the subject site(s) is that described in the staff report dated 12/17/98 prepared for coastal development permit #6-98-134. All interest earned shall be payable to the account for the purposes stated below.

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 solely be used 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 can appoint an alternative entity to administer the fund.

3. Monitoring Program. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, a monitoring program prepared by a licensed geologist or geotechnical engineer for the site and seawall which provides for 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 seawall. This evaluation shall include an assessment of the color and texture of the wall comparing the appearance of the wall to the surrounding native bluffs.

b. Annual measurements of the distance between each residence and the bluff edge (as defined by Section 13577 of the California Code of Regulations) at 6 or more locations. The locations for these measurements shall be the same as those identified on the as-built plans required in Special Condition #10 of this permit, and identified through permanent markers, benchmarks, survey position, written description, etc. so that annual measurements can be taken at the same bluff location and comparisons between years can provide information on bluff retreat.

c. Annual measurements of any differential retreat between the natural bluff face and the seawall face, at both 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.

d. Provisions for submittal of a report to the Executive Director of the Coastal Commission on May 1 of each year (beginning the first year after construction of the project is completed), for the life of the project. Each report shall be prepared by a licensed geologist or geotechnical engineer. The report shall contain the measurements and evaluation required in sections a, b, and c above.

The report shall also summarize all measurements and provide some analysis of trends, annual retreat or rate of retreat, 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 wall, which do not include the construction of structures on the face of the bluff. 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 three months of submission issuance of the report required in subsection d. above (i.e., by August 1) for any necessary maintenance, repair, changes or modifications to the project recommended by the report that require a coastal development permit.

The permittee shall undertake monitoring 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 required.

4. Conformance with Approved Sampling Analysis Plan. Only materials which are approved by the U.S. Army Corps of Engineers (ACOE) in consultation with the U.S. Environmental Protection Agency (EPA) as suitable for deposition on Fletcher Cove and Tide Beach Park, based on the sampling analysis plan or test for suitability by Group Delta Consultants (June 12, 1998), shall be used for the approved project.

5. Final Plans/Results of Sampling. Prior to the commencement of construction, the applicants shall submit to the Executive Director for review and written approval, final plans for the geotubes and construction pad which include the following:

a. Final results of the sampling analysis plan by Group Delta Consultants (June 12, 1998), which have been approved by the Army Corps of Engineers in consultation with the U.S. Environmental Protection Agency. The results of the analysis shall be accompanied by written evidence that the ACOE and EPA have concluded that the proposed material is suitable for deposition on the beach below 249-311 Pacific Avenue.

b. Plans for deposition of material on the beach below 249-311 Pacific Avenue which have been approved by the ACOE in consultation with the EPA.

c. Mitigation measures or other changes to the project as required by the ACOE. Such changes may trigger a requirement to amend this permit or obtain a separate coastal development permit.

The permittee shall undertake 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 required.

6. State Lands Commission Approval. PRIOR TO ISSUANCE OF THE PERMIT, 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.

7. Timing of Construction. Prior to issuance of the coastal development permit, the applicant shall submit to the Executive Director for review and written approval, a final construction schedule, which shall be incorporated into construction bid documents. The schedule shall specify that no work shall occur on the beach between Memorial Day weekend and Labor Day of any year.

8. Groundwater Impacts. Plans for the installation of hydraugers in the bluff, the construction of wells along the eastern property line, or other similar means to reduce the potential for groundwater to reach the bluff face, shall be submitted to the Executive Director for review and written approval, if, from examination of soil borings and site inspections during seawall construction, the project engineer should determine that groundwater and its potential to trigger block failures exists. Said groundwater system shall be installed concurrent with construction of the seawall. In addition, a maintenance program for such groundwater removal systems shall also be submitted and receive written approval of the Executive Director. However, any changes to the approved seawall proposed as a result of the presence of groundwater, shall require the review and approval of the Commission through an amendment to this coastal development permit. Said program shall assure the system approved herein is maintained for efficient operation at all times.

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

a. No storage of equipment or materials shall occur on sandy beach or public parking areas outside the confines of the geotube/construction pad area. During both the construction and the removal stages of the project, the permittee 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 place and construct the geotube/construction pad.

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

c. 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 permittee 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 required.

10. Storm Design/As-Built Plans. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit certification by a registered civil engineer that the proposed shoreline protective device is designed to withstand storms comparable to the winter storms of 1982-83.

Within 60 days following completion of the project, the permittee shall submit as-built plans of the approved seawall which includes measurements of the distance between each residence and bluff edge (as defined by Section 13577 of the California Code of Regulations) taken at 6 or more locations. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, etc. to allow annual measurements to be taken at the same bluff location and comparisons between years to provide information on bluff retreat.

In addition, within 60 days following completion of the project, the permittee 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.

11. Future Response to Erosion. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, each applicant shall execute and record a deed restriction against the eight blufftop parcels in a form and content acceptable to the Executive Director, which shall provide that no additional bluff or shoreline protective devices shall be constructed on the adjacent public bluff face or beach unless the alternatives required below are demonstrated to be infeasible. In the event any bluff or additional shoreline protective work is considered on public property in the future, the applicants acknowledge that as a condition of filing an application for a coastal development permit, the applicants must provide the Commission and the City of Encinitas with sufficient evidence enabling it to consider all alternatives to bluff or shoreline protective works that will eliminate additional impacts to public resources, including, but not limited to,

removal of accessory structures (patios, decks, etc.), installation of a below-grade retention system seaward of the residential structures on the applicant's property, underpinning of the residential structures, or other remedial measures capable of stabilizing the principle structure and providing reasonable use of the property, without construction of bluff or shoreline stabilization devices on the adjacent public resource, i.e. coastal bluffs and beaches. The document shall be recorded free of all prior liens and encumbrances and shall run with the land and bind all successors and assigns.

12. Assumption of Risk: PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, each applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that each applicant understands that the site may be subject to extraordinary hazard from bluff collapse and erosion and the applicant assumes the liability from such hazards; and (b) each applicant unconditionally waives any claim of liability on the part of the Commission or its successors in interest for damage from such hazards and agrees to indemnify and hold harmless the Commission, its officers, agents, and employees relative to the Commission's approval of the project for any damage due to natural hazards. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction.

This deed restriction shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

13. Future Maintenance/Debris Removal. Within 15 days of completion of construction of the protective device the permittees shall remove all debris deposited on the beach or in the water as a result of construction of shoreline protective device. The permitees shall also be responsible for the removal of debris resulting from failure or damage of the shoreline protective device in the future. In addition, the permittee shall maintain the permitted seawall in its approved state except to the extent necessary to comply with the requirements set forth below. 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 minor regrouting or other exempt maintenance as defined in Section 13252 of the California Code of Regulations to restore the seawall 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 wall to ensure a continued match with the surrounding native bluffs, the permittee shall contact the Commission office to determine whether permits are necessary, and shall subsequently apply for a coastal development permit for the required maintenance.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Project Description. The proposed project involves the construction of a 35-foot high, approximately 352-foot long shotcrete tied-back seawall at the base of an 80-foot high coastal bluff below eight existing single-family residences. The seawall would be located approximately 650 north of Fletcher Cove in the City of Solana Beach. The proposed seawall would be 2 ½ feet thick and colored and textured to match the surrounding bluffs. Also proposed is the construction of a geogrid reinforced slope on the upper bluff below (approximately) one of the eight single-family residences where an upper bluff collapse first occurred in late September 1998. The collapse has continued to spread laterally since the initial collapse, and is currently approximately 70 feet in width. The applicants are proposing to reconstruct the bluff at the collapsed site, stabilize the slope with geogrid, and plant the area with native plant material.

The bluffs in this location are approximately 80 feet high. There is little sand on the beach at the base of the bluff, and the bluffs receive nearly constant wave action. In order to allow construction equipment to access and work at the base of the bluff, the applicants are proposing to stack 30-foot circumference geotubes filled with a total 2,500 cubic yards of sand approximately 25 feet seaward of the of the base of the bluff, for a distance of 400 feet, to contain the surf and create a temporary construction area between the geotubes and the bluff. The stacked geotubes would be approximately 12 feet high. The area between the geotubes and the bluff would be filled with approximately 3,500 cubic yards of sand to create a stable work pad. After completion of construction, the geotubes would be emptied and removed from the site, leaving approximately 6,000 cubic yards of sand in place as a contribution to the littoral cell. The sand is proposed to be beach-quality sand obtained from the San Luis Rey River. Access to the site would be from the Fletcher Cove access ramp. The applicants are proposing to use a portion of the Fletcher Cove beach parking lot for staging and storage.

The project also involves the application of a clear liquid polymer soil stabilizer on the bluff below the eight residences to help stem the daily loss of sand material and slow down wind-blown erosion. The polymer emulsion will result in a ¼ inch thick surface skin to bond the bluff sand together. The material is commonly used to stabilize soils for dust and erosion control, and is non-toxic, colorless and biodegradable. It will be applied via a mechanized man basket and tanker truck during the first available tidal low.

The applicants' have submitted an emergency permit request for construction of a 90-foot long portion of the proposed seawall to extend across 261 Pacific Avenue (the site of the upper bluff collapse), as well as placement of the geotubes and construction pad area across the entire 400 foot stretch of bluffs, and spraying the bluffs with the liquid polymer. Staff is currently reviewing the proposed emergency permit request.

The City of Solana Beach does not yet have a certified LCP, and the project site is located in an area of the Commission's original jurisdiction. Therefore, Chapter 3 of the Coastal Act is the standard of review.

2. Permit History. The Commission has a considerable permit history on the project site. For 255 Pacific Avenue, the Commission approved a one and two story

seaward addition to the existing single-family residence in February 1991, with conditions that all construction be setback a minimum of 25 feet from the bluff edge (#6-91-309). The geotechnical report submitted at that time stated that over the economic lifetime of the home, the bluff could retreat a maximum of 24.75 feet.

For 261 Pacific Avenue (the site of the upper bluff collapse), the Commission approved a permit in May 1984 for demolition of the existing structure and construction of a new single-family residence up to 27 feet from the bluff edge (#6-84-168). The geotechnical information submitted at that time for the site indicated that the bluff in this particular location was very stable.

For 265 Pacific Avenue, past Commission action on the site includes demolition and reconstruction of the single-family residence on the bluff top in 1995 (#6-95-23). In its approval of the project, the Commission gave the applicant the option of either locating the new residence at least 40 feet back from the edge of the bluff, or, as proposed by the applicant, locating the structure up to 25 feet from the bluff edge, and recording a deed restriction providing that the landowner would not construct any upper or lower bluff stabilization devices (other than preemptive filling of a seacave located at the base of the bluff), to protect the portion of the residence located closer than 40 feet from the bluff edge. The recorded document additionally provides that if erosion proceeds to a point where the portion of the principal residence located seaward of the 40 foot blufftop setback is determined to be unsafe for occupancy, the landowner will submit an application for a coastal development permit to remove the portion of the structure in its entirety. The applicant chose the latter option and the home was constructed up to 25 feet from the bluff edge. Therefore, Commission is not required under Section 30235 of the Coastal Act to approve shoreline protection for the existing the single-family residence at 265 Pacific Avenue, even if the residence is in danger from erosion.

In October 1998, the Commission approved filling a 30-foot wide, 12-foot high, 7-foot deep sea cave at the base of the bluff at 265 Pacific (#6-98-29) as a follow-up to an emergency permit for seacave filling issued in March 1998.

For 269 Pacific Avenue, in July 1994, the Commission approved a permit for construction of a first and second story addition to the existing 2,387 sq.ft. single-family residence located on the bluff-top lot (#6-94-33). In its approval of the project, the Commission required that no new construction occur closer than 40 feet from the bluff edge and notified the applicant that any future application for shoreline protection would require an alternatives analysis. In March 1988, the Commission approved a permit for the construction of terraces and planting down the bluff face which had already occurred without a coastal development permit (#6-88-21). The wooden retaining walls were allowed to remain on the bluff as removing them could have been more detrimental to bluff stability than allowing them to remain.

For 301 Pacific Avenue, past Commission action on the site includes construction of a one-story addition to the existing residence approved in May 1981 (CDP #F9818). In October 1998, the Commission approved filling a 45-foot wide, 16-foot high, 13-foot

deep sea cave at the base of the bluff (#6-98-25) as a follow-up to an emergency permit for seacave filling issued in March 1998.

For 309 Pacific Avenue, past Commission action on the site includes approval in April 1990 of a 1,306 sq.ft. addition including a new second story to the existing single-family residence on the bluff top with special conditions prohibiting any changes to the portions of the existing structure located within 25 feet of the bluff edge, and placing an open space deed restriction over the bluff face (#6-89-366). In October 1998 the Commission approved filling a 38-foot wide, 12-foot high, 15-foot deep sea cave at the base of the bluff (6-97-164) as a follow-up to an emergency permit to fill the seacave granted on December, 1997.

Other permits include the approval in December 1997 of the temporary placement and removal of riprap boulders along the base of the bluff at 265 Pacific Avenue (#6-97-127), 269 Pacific Avenue (#6-97-128), 301 Pacific Avenue (#6-97-133), and 309 Pacific Avenue (#6-97-130). A non-material amendment to allow the riprap to remain on the site until May 15, 1998 was approved by the Executive Director in April 1998, and in May 1998, the Commission approved a second amendment allowing the riprap to remain until June 15, 1998. All of the riprap has been removed from the site at this time.

In addition, in November 1998, the Executive Director approved an emergency permit to spray on the bluffs beneath all eight sites the same a liquid polymer substance as is currently being proposed to be re-applied to the bluffs in with this permit request.

3. Geologic Conditions and Hazards. Section 30235 of the Coastal Act states, in part:

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.

In addition, Section 30253 of the Coastal Act states, in part:

New development shall:

(l) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" solutions alter natural shoreline processes. Thus, such devices are required to be approved only when necessary to protect existing structures. The Coastal Act does not require the Commission to approve 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 Coastal Act policies. For example, Section 30253 addresses new development and requires that it be sited and designed to avoid the need for protective devices that would substantially alter natural landforms along bluffs and cliffs.

In addition, the Commission has generally interpreted Section 30235 to require the Commission to approve shoreline protection only for existing principal structures. 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 under Section 30235 or can be protected from erosion by relocation or other means that does 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.

The proposed project involves the construction of a 352-foot long, 35-foot high seawall on public beach below eight existing single-family residences, and construction of an approximately 70-foot wide geogrid reinforced slope on the upper bluff below (approximately) one of the eight single-family residences at the site of an upper bluff collapse.

Setbacks for the eight bluff top residences current range from as close as 9 feet from the bluff edge (309 and 311 Pacific Avenue) to as far as 27 feet (265 Pacific Avenue) from the edge of the bluff. The bluff top residence at 261 Pacific Avenue (the location of the recent bluff collapse) is currently 12 feet from the bluff edge. The applicants have submitted a geotechnical study documenting the geologic structure and recent history of the bluffs in the project area.

The geologic study states the lower sea cliff collapses during last winter's El Niño storm season have resulted in an curved-shaped failure along this stretch of coastline. The study indicates that the as much as 15 feet of lower sea cliff retreat has occurred at 261 Pacific since prior to last winter. This loss of the underlying seacliff material in turn undermined the upper sloping terrace deposits, creating instability of the upper bluffs.

The bluffs in the location of the proposed project are approximately 80 feet in height and consist of an underlying layer of Torrey Sandstone and an upper layer of marine terrace deposits (Bay Point Formation), which is typical of the bluff formations found in northern Solana Beach. However, along the 352-foot long stretch of bluffs at the project site, the geotechnical report has identified an 8 to 10-foot high geologic segment located between the Torrey Sandstone and Marine Terrace Deposits classified as "a clean sands lens"

which has not been previously described in past geotechnical analyses reviewed by the Commission in Solana Beach.

The report indicates that clean sand lenses "occasionally" exist within the Bay Point Formation. The clean sand layer is described as a very loose sandy material with a limited amount of capillary tension and a very minor amount of cohesion, both of which dissipate easily, making this clean sand layer susceptible to wind blown erosion and continued sloughing as the sands dries out and loses the capillary tension that initially held the materials together. Gentle sea breezes and any other perturbations, such as landing birds or low-flying helicopters, can be sufficient triggers of small or large volume bluff collapses, since the loss of the clean sands eliminates the support for the overlying, slightly more cemented, terrace deposits.

The applicants have submitted evidence that the presence of the clean sands creates a distinctly different, more rapid process of bluff erosion than typically seen on coastal bluffs. Exhibit 3 illustrates the usual process of incremental erosion where the upper bluff gradually erodes and slowly "lays-back" to a stable angle of repose. Exhibit 4 illustrates that the presence of the clean sands creates a process where the clean sands rapidly undermine the upper sloping terrace deposits causing the upper bluff to collapse thereby exposing more clean sands to wind erosion which then results in more upper bluff collapses. This cycle occurs so quickly (over months or days, rather than years) that the upper bluff never achieves a stable angle of repose.

When asked why this clean sand lens has not been identified in the past, the applicants' engineer submitted photographs demonstrating that the clean sand layer was not exposed prior to the erosion of last winter's El Niño storms. As the bluffs were undermined and significant chunks of the bluffs collapse, this previously hidden sand lens was exposed starting the cycle of rapid collapsing and causing the upper bluff failure below 261 Pacific Avenue. The geotechnical reports submitted indicate that clean sands have been exposed within the vertical escarpment beneath all eight of the residences at the subject site. The report concludes that without stabilization of the clean sands, not only will the existing upper bluff failure continue to grow rapidly, but significant upper bluff failures will occur on all eight properties creating a need for both lower and upper bluff stabilization along the entire stretch.

The applicants have submitted a slope stability analysis for each of the eight residences to demonstrate that the existing primary residences are in danger from erosion. The report indicates that traditional engineering stability analyses have only limited usefulness for this type of bluff formation, because, as discussed above, the upper bluff terrace sands are continually sloughing and attempting to achieve a stable angle repose, then sloughing again. Nevertheless, the slope stability analysis determined that the computed factor of safety was less than 1.25 (the point at which the slope is considered susceptible to upper bluff failures) for 225, 261, 265, 269, 309, and 311 Pacific Avenue, all which were deemed to be susceptible to upper-bluff failures within the near future (the next several years). The study specifically identifies the clean sands layer as requiring structural restraint, without which significant bluff failures will occur during this winter's storm

season, assuming any reasonable level of storm activity. The report concludes that the coastal bluffs beneath all eight lots, if not stabilized in the near future, will experience upper bluff failures similar to the one which has occurred beneath 261 Pacific Avenue, putting all eight bluff-top residences at risk, and requiring significant upper-bluff fortification to protect the residences.

Given the substantial amount of documented erosion on the site over the last year, the substantial bluff collapse in September below 261 Pacific Avenue, the presence of the clean sands and the extreme erodibility of these sands, and the low factor of safety on the subject bluffs, substantial evidence has been provided to document that the existing primary blufftop structures are in danger from erosion. Therefore, the Commission finds that a shoreline altering device must be approved to protect seven of the eight residences, pursuant to Section 30235. (See discussion below regarding the residence at 265 Pacific Avenue).

The applicants have submitted an alternatives analysis which documents that the proposed shoreline protection is needed to address the identified problem. Each of the existing residences essentially fill the entirety of their lot; thus, moving the homes east away from the bluff is not possible in this case. The applicants' engineer has indicated that a below-grade retention system or underpinning of the existing homes could potentially be considered as an alternative to the proposed project; however, this would not stop the upper bluff failures from growing and continuing to undermine the home, unless the piers were 80 feet high and sufficiently stable to entirely support each residence.

In November of this year, the Executive Director granted an emergency permits to the applicants to apply a liquid polymer spray to the bluff face beneath all eight residences in an attempt to slow down the erosion of the clean sands. The geotechnical report indicates that the product has provided some limited benefit, and thus, the proposed project includes reapplication of the material on the bluffs. However, erosion has continued on the site and the material has not been effective in stopping the growth of the upper bluff collapse at 261 Pacific Avenue.

The residence at 265 Pacific Avenue has also been demonstrated to be in danger from erosion at this time. However, as noted above, in 1995, the landowner chose to waive his right to shoreline protection under Section 30235 in order to construct a new residence up to 25 feet from the bluff edge, rather than the 40 feet which was determined by the Commission to be the distance whereby the home would not be threatened by erosion for the lifespan of the residence. Therefore, the Commission is not required to approve shoreline protection to protect this structure. However, in this particular case, the homes on either side of 265 Pacific Avenue do require shoreline protection, as well as the other five residences proposing shoreline protection in this particular geologic segment. As further discussed below, there are adverse impacts associated with "gaps" in shoreline protection, in particular the accelerated erosion from edge effects, and the visual discontinuity of piecemeal shoreline protection. The proposed project takes a relatively comprehensive approach to shoreline protection planning, which the

Commission has encouraged in the past. The eight properties involved comprise a specific geologic segment which is threatened due to the presence of the clean sands and other factors. This comprehensive approach is preferable to piecemeal shoreline protection projects, and thus, the Commission finds that the inclusion of this one lot in the proposed project is appropriate, if conditioned as discussed below.

Although construction of a seawall is required to protect the existing principle structures on the site (with the exception of the residence at 265 Pacific), Section 30235 of the Coastal Act 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 Section 30235, 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.

Many of the effects of a structure on the beach are temporary or difficult to distinguish from all the other actions which modify the shoreline. Nevertheless, some of the effects which 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.

Based on review of the proposed seawall application, the Commission finds that the following impacts on beach sand supply would result from construction of the proposed seawall. The proposed seawall, which is approximately 352 ft. long by 2.5 feet thick, will encroach onto and permanently displace an estimated 880 sq. ft. of public beach area that is currently available for public use. Based on a rough approximation of current and future bluff profiles, it is estimated that approximately 7,620 cubic yards of beach quality sand will be deprived the beach over the life of the seawall due to the seawall's effect on the natural processes of the bluff.

Special Condition #2 requires the applicant to deposit an in-lieu fee to fund beach sand replenishment projects as mitigation for impacts of the proposed shoreline protective device on beach sand supply and shoreline processes. The following is the methodology used by Commission staff develop the in-lieu fee amount. 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 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. The actual calculations which utilize values that are applicable to the subject sites, and were used as the basis for calculating the estimated range of the mitigation fee, are attached as Exhibit 10 to this report.

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

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

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.

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

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 0.2 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.

$V_W = R \times L \times v \times W$

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 0.2 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.)

$$V_e = E \times W \times v$$

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;

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 this particular case, 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.

In past shoreline protection projects approved by the Commission, applicants have been required to pay a fee in-lieu of directly depositing the sand on the beach, because the benefit/cost ratio the direct deposit would be too low. Most 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, underwater 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. However, in the case of the proposed project, the geotubes and sand construction platform will result in the placement of approximately 6,000 cubic yards of sand directly on the beach. This amount of sand is of sufficient quantity to warrant direct placement of sand on the beach and find that it will have a mitigating impact on the loss of sand from the proposed seawall.

However, as noted above, the impact to sand supply from the project is actually 7,620 cubic yards. Therefore, in order to fully mitigate the impact of the project on sand supply, the applicants are being required to pay a fee (based on the above formula) to make up the difference between the amount of sand being directly placed, and the amount of sand being "lost" as a result of the construction of the seawall, in the amount of $21,060. The funds will be used only to implement projects which 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. The methodology, as proposed, is not attempting to address any impacts to shoreline processes other than those directly attributable to the proposed seawall on the subject properties. The methodology provides a means to quantify the sand and beach area that would be available for public use, were it not for the presence of the seawall.

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 approximately 900 ft. north of the subject site. 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 located several blocks north of the subject site (ref. CDP Nos. 6-93-36-G/Clayton, 6-93-131/Richards, et al, 6-93-136/Favero, 6-95-66/Hann and 6-98-39/Denver/Canter).

In addition to the adverse impacts the seawall will have on the beach as detailed above, the Commission finds that the proposed seawall could also have adverse impacts on adjacent unprotected properties caused by wave reflection, which leads to accelerated

erosion. Numerous studies have indicated that when continuous protection is not provided, unprotected adjacent properties experience a greater retreat rate than would occur if the protective device were not present. This is due primarily to wave reflection off the protective structure and from increased turbulence at the terminus of the seawall. According to James F. Tait and Gary B. Griggs in Beach Response to the Presence of a Seawall (A Comparison of Field Observations) "[t]he most prominent example of lasting impacts of seawalls on the shore is the creation of end scour via updrift sand impoundment and downdrift wave reflection. Such end scour exposes the back beach, bluff, or dune areas to higher swash energies and wave erosion." As such, as the base of the bluff continues to erode on the unprotected adjacent properties, failure of the bluff is likely. Thus, future failures could "spill over" onto other adjacent unprotected properties, prompting requests for much more substantial and environmentally damaging seawalls to protect the residences. This then starts a "domino" effect of individual requests for protection.

In response to these concerns, the applicants' engineer has noted that the proposed seawall has incorporated a feathered design onto either end of the proposed wall to gradually blend into the adjacent natural bluffs which will help to reduce the turbulence at the end of the wall that can lead to accelerated erosion of adjacent unprotected bluffs. However, although the proposed seawall design includes the design to reduce impacts of the wall on adjacent properties, at best, the impacts can be reduced, but not eliminated. Regardless of whether accelerated erosion will occur on the adjacent unprotected properties, the adjacent bluffs will continue to erode due to the same forces that are causing them to erode currently. As this occurs, more surface area of the feathered edges will be exposed to wave attack leading to increased turbulence and accelerated erosion of the adjacent unprotected bluff. These impacts are particularly problematic in the case of the proposed project, as the seawall will be an isolated structure in a stretch of currently unprotected shoreline.

According to information contained in the Planners Handbook (dated March 1993), which is included as Technical Appendix III of the Shoreline Preservation Strategy adopted by the San Diego Association of Governments (SANDAG) on October 10, 1993, "[a] longer return wall will increase the magnitude of the reflected wave energy. On a coast where the shoreline is retreating, there will be strong incentives to extend the length of the return wall landward as adjacent property is eroded, thereby increasing the return wall, and its effects on neighboring property, with time."

Therefore, the Special Condition #3 requires the applicant to submit a monitoring report which evaluates the condition and performance of the seawall and overall site stability, and submit an annual report with recommendations, if any, for necessary maintenance, repair, changes or modifications to the project.

Special Condition #11 requires a deed restriction acknowledging that alternative measures must be implemented on the applicants blufftop property in the future, should additional stabilization be required, which would avoid additional alteration of the natural

landform of the public beach or coastal bluffs, but would stabilize the principle residential structures and provide reasonable use of the property.

Special Condition #1 requires the applicants to submit final plans for the project indicating that the seawall conforms to the bluff contours and to demonstrate that existing irrigation systems within the geologic setback area on the blufftop have been removed, as these would impact the ability of the seawall to adequately stabilize the site. The final plans and Special Conditions #8, which requires an analysis of ground water conditions, are designed to ensure that overall site conditions which could adversely impact the stability of the bluff have been addressed.

Special Condition #13 notifies the applicants that they are responsible for maintenance of the herein approved shore and bluff protection to include removal of debris deposited on the beach during and after construction of the structures. The condition also indicates that, should it be determined that maintenance of the seawall is required in the future, including maintenance of the color and texture of the wall, the applicant shall contact the Commission office to determine if permits are required.

To assure the proposed shore/bluff protection has been constructed properly, Special Condition #10 has been proposed. This condition requires that, within 60 days of completion of the project, as built-plans and certification by a registered civil engineer be submitted that verifies the proposed seawall has been constructed in accordance with the approved plans.

Also, due to the inherent risk of shoreline development and the Commission's mandate to minimize risk, Special Condition #12 requires the applicant to waive liability and indemnify the Commission against damages that might result from the seawall or its construction. The risks of the proposed development include that the seawall will not protect against damage to the residences from bluff failure and erosion. In addition, the structure itself may cause damage either to the applicants' residences or to neighboring properties by increasing erosion at the sides of the structure. Such damage may also result from wave action that damages the seawall. Although the Commission has sought to minimize these risks, the risks cannot be eliminated entirely. Given that the applicants have chosen to construct the seawall despite these risks, the applicants must assume the risks. Accordingly, Special Condition #12 requires that the applicants record a deed restriction that evidences their acknowledgment of the risks and that indemnifies the Commission against claims for damages that may be brought by third parties against the Commission as a result of its approval of this permit. Only as conditioned can the proposed project be found consistent with Sections 30235 and 30253 of the Coastal Act.

In summary, the applicants have documented that the existing bluff top primary structures are in danger from erosion and subsequent bluff failure. Thus, the Commission is required to approve the proposed protection for seven out of the eight residences. Although the Commission is not required to provide protection for the residence at 265 Pacific Avenue, the advantages of building a continuous wall outweigh the adverse impacts associated with shoreline protection on this one site. There are no other less

damaging alternatives available to reduce the risk from bluff erosion. Since the proposed seawall will contribute to erosion and geologic instability over time on adjacent unprotected properties and also deplete sand supply, occupy public beach and fix the back of the beach, Special Conditions require the applicant to require pay an in-lieu mitigation fee to offset this impact. Therefore, as conditioned, the Commission finds that the proposed seawall is consistent with Sections 30210, 30211, 30212, 30235, 30240, 30250, 30251 and 30253 of the Coastal Act.

4. Visual Resources/Alteration of Natural Landforms. Section 30251 of the Coastal Act states, in part:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

As stated above, the proposed development will occur at the base of a coastal bluff fronting a City public beach park. The bluffs along this section of the Solana Beach coastline currently remain in a natural state, with virtually no existing bluff or shore protection other than seacave fills from just north of Fletcher Cove to Tide Park, an approximately one-quarter mile stretch of beach. As such, the potential for adverse impacts on visual resources associated with the proposed development could be significant.

The applicants are proposing to construct an approximately 35-foot high tied-back seawall, which is the minimum height necessary to cover the clean sand lens. A lower wall would reduce undermining at the base of the bluff, but would not prevent the clean sands from eroding and undermining the upper bluff, and thus would not address the main threat to stability at the site. The applicant is also proposing to reconstruct the bluff face at the site of the upper bluff collapse using geogrid reinforcement to stabilize the slope.

The applicants examined several alternatives to the proposed shoreline protection. Exhibit 6 shows an upper-bluff, carved and colored tied-back wall that could be located 30 feet above the base of the bluff, which would cover the clean sands lens and could negate the need for any lower sea-cliff stabilization until an additional 30 feet of marine erosion eventually undermined the upper wall. However, the report indicates that construction of this type of wall on fragile, unstable upper bluffs is problematic at best, and would also be more visually intrusive than the proposed construction of a vertical wall against lower and mid-bluff cliffs which are currently essentially vertical.

A second alternative to the 35-foot high seawall is presented in Exhibit 7, which involves construction of two separate 15-foot high walls, one at the base of the bluff and the other at the mid-bluff to cover the clean sands. However, this alternative would also require

construction on the unstable mid-bluff area and offers little in the form of improved aesthetics.

The applicant also examined several alternative designs for the proposed upper bluff protection, including filling in the upper slope with an erodible concrete mixture (Exhibit 8), or constructing a series of stepped concrete platforms backfilled with soil (Exhibit 9). However, these alternatives present approximately the same amount of landform alteration as the proposed geogrid slope, but would have somewhat less of a natural appearance than the proposed project.

The existing coastal bluffs in this location currently stand almost completely vertical up to a height of 35 feet. Thus, constructing a vertical seawall on the face of the bluff is not wholly inconsistent with the existing appearance of the natural bluffs. The proposed seawall will be have a colored and textured surface replicating the natural bluff. The upper 10 feet of the wall will be colored specifically to match the terrace deposits. As a requirement of the City of Solana Beach, the contractor for the project will be required to construct a scale prototype wall section at an off-site location for City approval. Special Condition #1 requires the submittal of detailed plans, color samples, and information on construction methods and technology for the surface treatment of the wall. The condition requires that should the appearance of the wall change or deteriorate in the future, the applicants must apply for a coastal development permit to maintain the wall in its approved condition, including coloring and texturing. In this way, the Commission can be assured that the proposed seawall will blend with the natural bluffs in the area to the maximum extent feasible.

With regard to the proposed spraying of the bluff face with a clear liquid polymer material, as noted above, the Executive Director approved application of this same material on the bluff face in November of this year. The applicants' engineer has documented that at the time of the application, the installer inadvertently left some white stain within his spray applicator and the northerly 20 feet of the spray application came out with a white stain. Adjustments were immediately made and the remaining material was applied with no visible stains or discolorations.

The applicant has assured staff that the error has been corrected and future application will not result in any visual impact on the natural bluffs. The impact to visual quality which did occur is short-term in nature, as the stain is gradually being eroded. The re-application of the clear material is not expected to have any additional impact on the visual quality of the bluffs.

Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the maximum extent feasible, consistent with Section 30251 of the Coastal Act.

5. Public Access/Recreation. Pursuant to Section 30604 (c), the Coastal Act emphasizes the need to protect public recreational opportunities and to provide public

access to and along the coast. Section 30210 of the Coastal Act is applicable to the proposed development and states:

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

In addition, Section 30212 of the Act is applicable and states, in part:

> (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:
>
> (l) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,
>
> (2) adequate access exists nearby....

Additionally, Section 30220 of the Coastal Act provides:

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

The project site is located on a public beach utilized by local residents and visitors for a variety of recreational activities. The site is located approximately 700 feet north of the City of Encinitas' Moonlight State Beach. The proposed seawall will be constructed on sandy beach area that is currently available to the public. The project will have several adverse impacts on public access.

Although the proposed seawall has been designed to be as narrow as feasible, it will project approximately two ft. seaward of the toe of the bluff. Although the seaward encroachment of the wall appears at first glance to be minimal, the beach along this area of the coast is narrow and at high tides and winter beach profiles, the public may be forced to walk virtually at the toe of the bluff or the area would be impassable. As such, an encroachment of any amount, including two feet for a length of 80 feet onto the sandy beach, reduces the beach area available for public use and is therefore a significant adverse impact. This is particularly true given the existing beach profiles and relatively narrow beach.

In addition to the above described direct interference with public access by the proposed seawall, there are a number of indirect effects as well. Shoreline processes, and supply and beach erosion rates are affected by shoreline structures and thus alter public access and recreational opportunities.

The precise impact of shoreline structures on the beach is a persistent subject of controversy within the discipline of coastal engineering. However, the Commission is led to the conclusion that if a seawall works effectively on a retreating shoreline, it results in impacts on the beach. As discussed previously, the construction of a shore/bluff protective structure has a number of quantifiable and not so quantifiable impacts on the local sand supply on the adjacent sandy beach. Briefly stated, the seawall will halt natural bluff retreat, preventing bluff material from becoming part of the sand supply; will physically occupy beach area, displacing recreational use of a public beach, thereby creating a burden on the public; will halt the landward migration of the beach; and, the vertical seawall can cause increased turbulence, accelerating the pace of sand scour, steepening the beach profile and causing the beach to become narrower and eventually disappear. Additionally, seawalls can lead to accelerated erosion of the adjacent unprotected bluff due to wave reflection.

It is generally accepted that the dividing line between public tidelands and private upland to tidal boundary in California is the mean high water datum (MHW). From an engineering point of view, a water boundary determined by tidal definition is not a fixed mark on the ground, such as a roadway or a fence; rather, it represents a condition at the water's edge during a particular instant of tidal cycle. The line where that datum intersects the shoreline will vary seasonally. Reference points such as Mean Sea Level and Mean High Water Datum, are calculated and reflect the average height of the tide levels over a period of time.

Development along the shoreline which may burden public access in several respects has been approved by the Commission. However, mitigation for any 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, riprap, and revetments. Since physical impediments adversely impact public access and create private benefit for the property owners, the Commission has found in such cases (in permit findings of #4-87-161 [Pierce Family Trust and Morgan], #6-87-371 [Van Buskirk], #5-87-576 [Miser and Cooper]) that a public benefit must arise through mitigation conditions in order that the development will be consistent with the access policies of the Coastal Act, as stated in Sections 30210, 30211, and 30212.

The development proposed in this application is the construction of a vertical seawall. In this location the beach and bluffs are in public ownership. Although the proposed seawall adheres closely to the contour of the natural bluff, the seawall will reduce lateral beach access by encroaching onto the beach and will have adverse impacts on the natural shoreline processes.

As stated elsewhere in these findings, Section 30235 of the Act allows for the use of such a device where it is required to protect existing development and where it has been designed to mitigate adverse impacts upon shoreline sand supply. In order to mitigate the known adverse impacts, the Commission typically requires an offer of dedication of

lateral public access in order to balance the burden placed on the public with a public benefit. In this particular case, the beach and bluff are in public ownership and will remain as such. Therefore, no dedication of lateral public access is required. However, Special Condition #2, discussed in a previous section of the staff report, requires the applicant to provide mitigation for adverse impacts on beach and sand area resulting from placement of the proposed seawall, which will also serve to mitigate the impact of the loss of beach access. The mitigation will be an in-lieu fee which will be utilized for beach replenishment projects within the same littoral cell.

As debris dislodged from the seawall either during construction or after completion also has the potential to affect public access, Special Condition #13 has also been proposed. This condition notifies the applicant that they are responsible for maintenance and repair of the seawall and that should any work be necessary, they should contact the Commission office to determine permit requirements. In addition, the condition requires the applicants to be responsible for removal of debris deposited on the beach during and after construction of the project.

In addition, 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. The applicants are proposing to use a portion of the 95-space parking lot at Fletcher Cove for construction staging and storing. Fletcher Cove is the main recreational beach for all of Solana Beach, and the parking area at Fletcher Cove is the only public beach parking lot directly adjacent to the beach in Solana Beach.

Construction vehicles traveling along the access ramp at Fletcher Cove as proposed will have an adverse impact on the ability of the public to access Fletcher Cove and to walk along the beach to the north during low tides. However, this ramp is the only way heavy equipment can reach the project site. To further impact public access by usurping even a small amount of parking in the lot would significantly adversely impact public access. As such, Special Condition #9 has been proposed to require that a staging area plan be submitted that indicates that no portion of the beach outside the confines of the geotube/construction pad area will be used for storage of materials and equipment, and that no public parking lots will be used for staging. The condition also prohibits construction on the sandy beach during the summer months of Memorial Day to Labor Day of any year. Therefore, 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.

6. Biological Resources/Human Health. The following Coastal Act policies address the protection of biological resources and human health:

Section 30230

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will

sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231

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

Section 30233.

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(l) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

Section 30240 of the Act states:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(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.

While the proposed beach deposition can be found a mitigating feature of the proposed shoreline protection polices, the above Coastal Act policies require the Commission to address the impacts of beach deposition on marine resources by considering the timing of deposition of the material on the beach, the location of the receiver beach and the presence of environmentally sensitive resources, the quality of the deposition material and its compatibility with the receiver beach. Deposition of material onto the beach can affect marine life through the burial of organisms on the beach and in the nearshore environment, and by increasing turbidity in adjacent waters. Fine-grain sediment has the greatest potential for causing impacts to the nearshore habitat because sandy sediment generally remains on the beach, while fine-grain sediment migrates offshore towards the nearshore biological habitat.

The proposed project would place approximately 6,000 cubic yards of sand on a 400 foot long stretch of beach in the City of Solana Beach. The sand source is San Luis Rey Pit site, within the san Luis Rey River channel, downstream of the Interstate 15 bridge. A beach sand suitability analysis submitted by the applicant by Group Delta Consultants, June 12, 1998, indicates the proposed deposition material would be "excellent beach fill material" suitable for use as beach sand on the region's shoreline. The suitability analysis includes a review of the grain size and fine sand content of the deposition material, and concludes that the proposed sand is 3 to 4 times larger than the typical north San Diego County beach sands. However, the coarser sand can be seen as an advantage, as the coarser sand is harder to move, given the same wave energy, and would likely remain on the beach longer than finer sands. With regard to the amount of fines in the sand, the

report indicates that due to the winnowing affect of the active river during the past winter's storms, the finer sand fraction has likely been removed from the upper alluvial deposits within the river channel. The report concludes that the material will have value as both a recreational beach and as an absorber of wave energy.

The final determination as to the suitability and compatibility of the excavated material will be made through the Army Corps of Engineers permit process. The applicant has applied for an Army Corps permit; however, no determination of the suitability of the material has been made yet.

The area around the project site, including Fletcher Cove and Tide Beach Park have previously been reviewed as potential beach nourishment sites. The area was studied extensively during the permit process associated with the grade separation/beach nourishment project approved by the Commission in October 1995 (#6-94-207). The grade separation project involved excavation of a 1.4 mile area to create a railroad undercrossing below Lomas Santa Fe Drive. The Commission approved up to a maximum of 230,000 cubic yards of material for deposition on the beach between South Cardiff to North Seascape Surf Park (ultimately, 44,000 cubic yards of sand was found to be appropriate for deposition). The review process for this project involved an Environmental Impact Report and a beach replenishment evaluation which analyzed the biological resources along the northern San Diego coastline and examined a variety of potential deposition locations, including Tide Beach Park, North Seascape Surf Park, Del Mar Shores Terrace, and Cardiff State Beach. These alternatives were rejected for a large deposition project because of the high relief reef supporting macro algae offshore of Tide Park and because of the reef and boulder outcrops that support dense surfgrass habitat offshore and south of North Seascape Surf Park and offshore of Del Mar Shores Terraces.

The Solana Beach/Fletcher Cove area was selected as the best location for beach replenishment. The habitat offshore the area south of Cliff Street to North Seascape Surf Park is mostly sand bottom with patches of hard bottom. The area is not a foraging site for resident and migratory bird species, and there is no surfgrass in this area which would be impacted by the deposition of sediments.

The project area was also examined in detail and determined to be an appropriate location for on-shore beach sand deposition for the Federal Navy Homeporting project (CD-95-95; CD-29-97). The Navy reviewed various beaches within San Diego County from Oceanside to Imperial Beach as potential receiver sites for a total of 7.9 million cubic yards of sand resulting from dredging in San Diego Bay to support the homeporting of a nuclear aircraft carrier. Criteria for site selection included potential impacts to habitat species such as grunions, least terns, snowy plovers and significant marine vegetation such as kelp beds. In consultation with the Army Corps of Engineers, National Marine Fisheries, the Department of Fish and Game, and the U.S. Fish and Wildlife Service, the Commission determined that with biological monitoring of reef health, the avoidance of deposition when grunion are present, and the implementation of turbidity-minimizing measures, the placement of 570,000 cubic yards of sand on Solana Beach beaches from Cliff Street to Dahlia Street was appropriate and necessary.

The amount of sand which would be deposited on the beach through this project is extremely small compared to the amounts approved in these previous permits. An Army Corps of Engineers permit is required for placement of the sand. The Army Corps process includes a thorough review of the sand material and receive beach and includes the review of the project by other resource agencies to examine all potential impacts to marine resources. Special Condition #5 requires that the applicant submit final approval of the project and deposition site from the Corps prior to the commencement of construction. Special Condition #4 requires that only the material found suitable from the Corps be placed on the beach. Therefore, as conditioned, the proposed project can be found consistent with the water quality and resource protection policies of the Coastal Act.

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 was previously in the County of San Diego Local Coastal Program (LCP) jurisdiction, but is now within the boundaries of the City of Solana Beach. The City will, in an likelihood, prepare and submit a new LCP for the area to the Commission for review. Because of the incorporation of the City, the certified County of San Diego Local Coastal Program no longer applies to the area. However, the issues regarding protection of coastal resources in the area have been addressed by the Commission in its review of the San Diego County LUP and Implementing Ordinances. As such, the Commission will continue to utilize the San Diego County LCP documents for guidance in its review of development proposals in the City of Solana Beach until such time as the Commission certifies an LCP for the City.

In preparation of an LCP, the City of Solana Beach is faced with many of the same issues as the City of Encinitas, located immediately north of Solana Beach, whose LCP was certified by the Commission in March 1995. The City of Encinitas' LCP includes the intent to prepare a comprehensive plan to address the coastal bluff recession and shoreline erosion problems in the City. The plan will include at a minimum, bluff top setback requirements for new development and redevelopment; alternatives to shore/bluff protection such as beach sand replenishment, removal of threatened portions of a residence or the entire residence or underpinning existing structures; addressing bluff stability and the need for protective measures over the entire bluff (lower, mid and upper); impacts of shoreline structures on beach and sand area as well as mitigation for such impacts; impacts for groundwater and irrigation on bluff stability and visual impacts of necessary/required protective structures.

The City of Solana Beach should also address these items in the context of a comprehensive approach to management of shoreline resources. As shoreline erosion along the coast rarely affects just one individual property, it is imperative that a regional

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.

The bluffs in this section of the Solana Beach coastline are in public ownership; for the most part pristine, devoid of shore and bluff protection structures or private access stairways. Evidence of a clean sand lens, which has been documented on the project site, have not been reported elsewhere in the area. As such, it is premature to commit this entire stretch of bluffs to armoring without a thorough analysis of alternatives.

In the case of the proposed project, site specific geotechnical evidence has been submitted indicating that the existing structures on the project site are in danger. The Commission feels strongly that approval of the proposed project should not send a signal that there is no need to address a range of alternatives to armoring for existing development. Planning for comprehensive protective measures should include a combination of approaches including limits on future bluff development, ground and surface water controls, beach replenishment, and even continual lower bluff protection constructed in substantial segments, as with the proposed project. Although the erosion potential on the subject site is such that action must be taken promptly, decisions regarding future shoreline protection should be done through a comprehensive planning effort that analyzes the impact of such a decision on the entire City shoreline.

The project site is designated for Open Space Recreation in the City of Solana Beach Zoning Ordinance and General Plan, and was also designated for open space uses under the County LCP. As conditioned, the subject development is consistent with these requirements. Based on the above findings, the proposed seawall development has been found to be consistent with the Chapter 3 policies of the Coastal Act in that the need for the seawall has been documented and its adverse impacts on beach sand supply and on adjacent unprotected properties will be mitigated.

Therefore, the Commission finds the proposed development, as conditioned, the project can be found consistent with the Chapter 3 policies of the Coastal Act, and will not prejudice the ability of the City of Solana Beach to complete a certifiable local coastal program. However, these issues of shoreline planning will need to be addressed in a comprehensive manner in the future through the City's LCP certification process

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, sensitive resource, and public access policies of the Coastal Act. Mitigation measures, including conditions addressing construction techniques consistent with the geotechnical report and color of construction materials, 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 can be found consistent with the requirements of the Coastal Act to conform to CEQA.

STANDARD CONDITIONS:

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

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

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

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.

Wed 21b

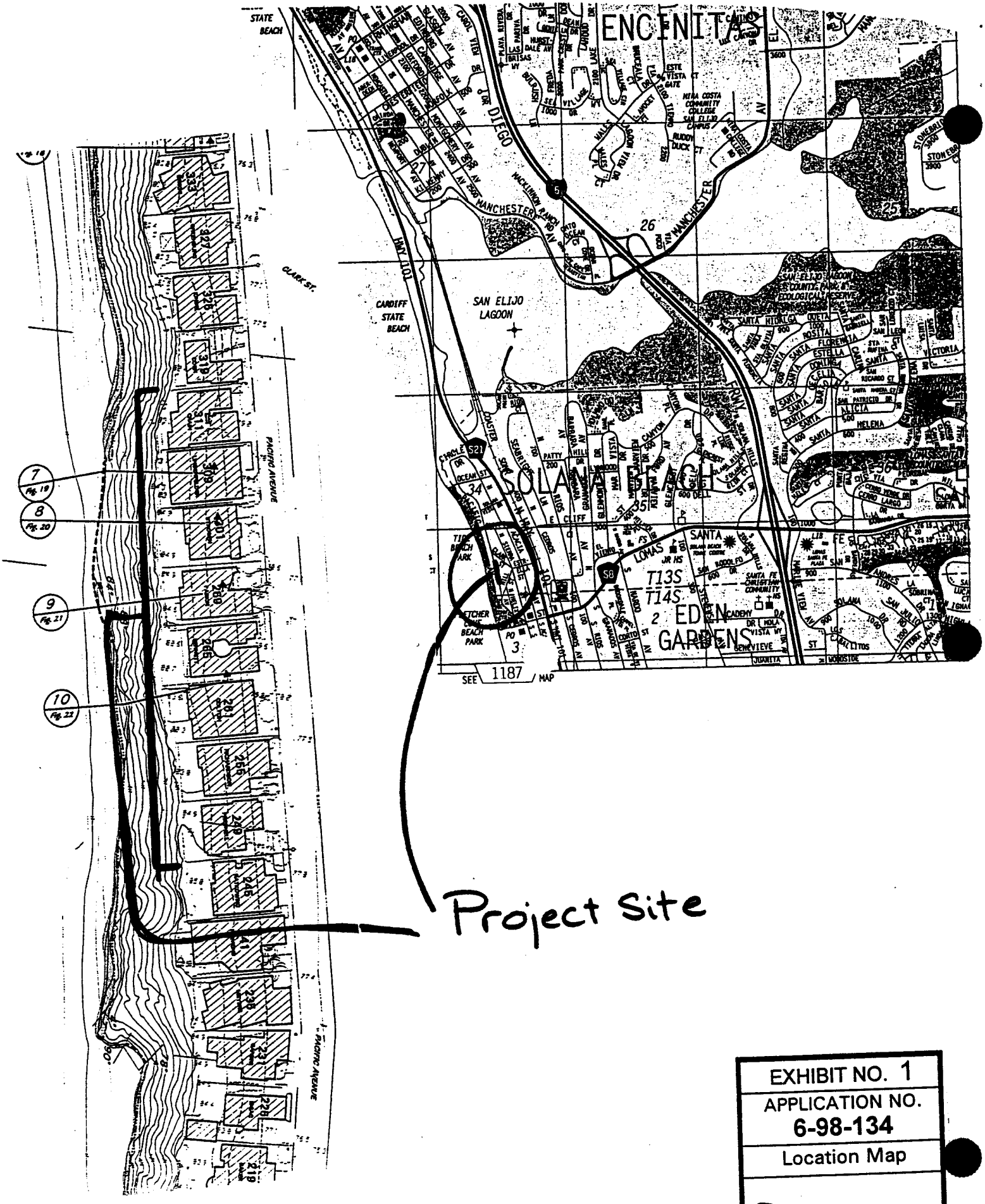
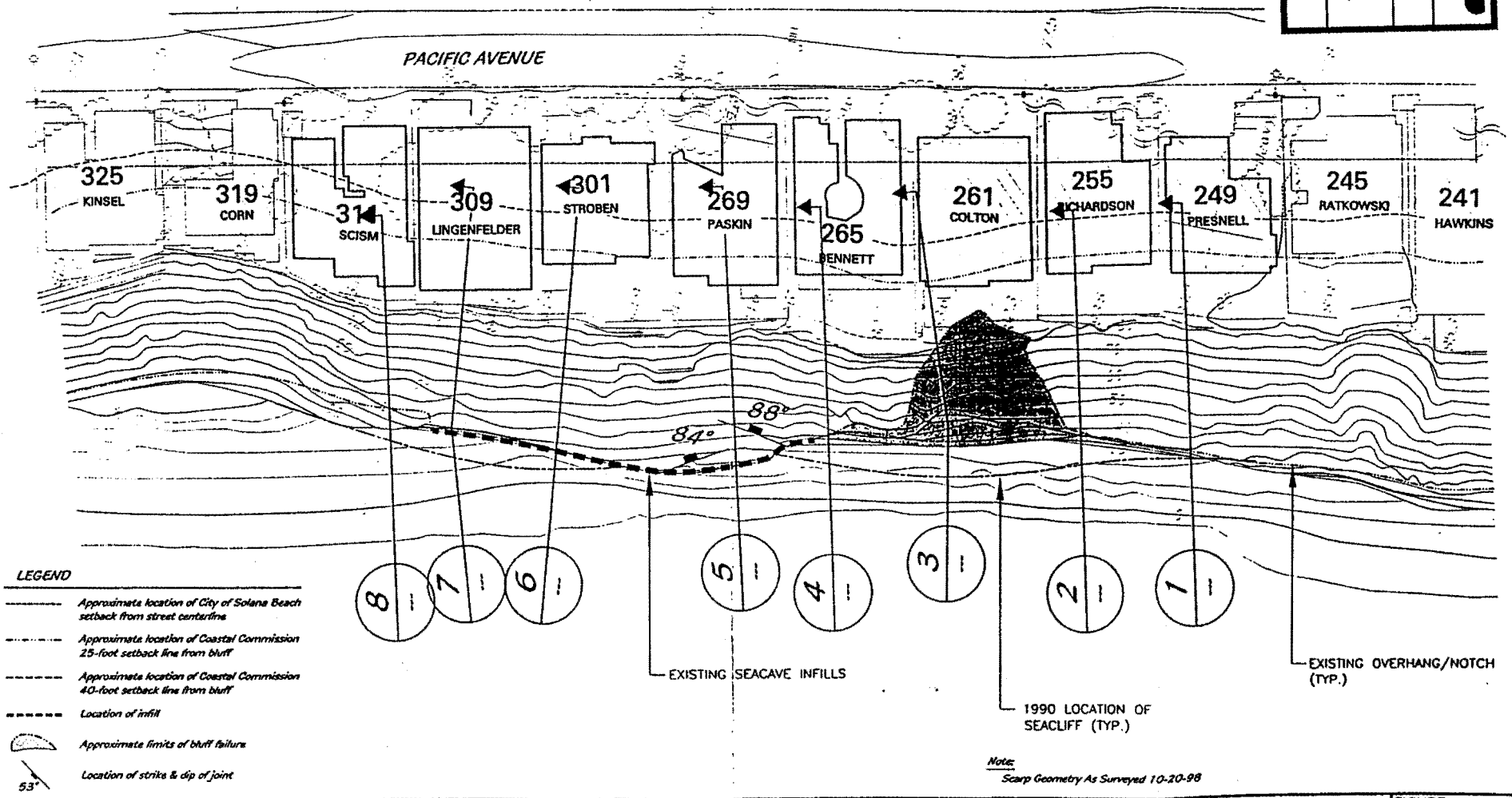


EXHIBIT NO. 1
APPLICATION NO.
6-98-134
Location Map
California Coastal Commission

EXHIBIT NO. 2
APPLICATION NO. 6-98-134
Site Plan
California Coastal Commission

SCALE: 1"=40'



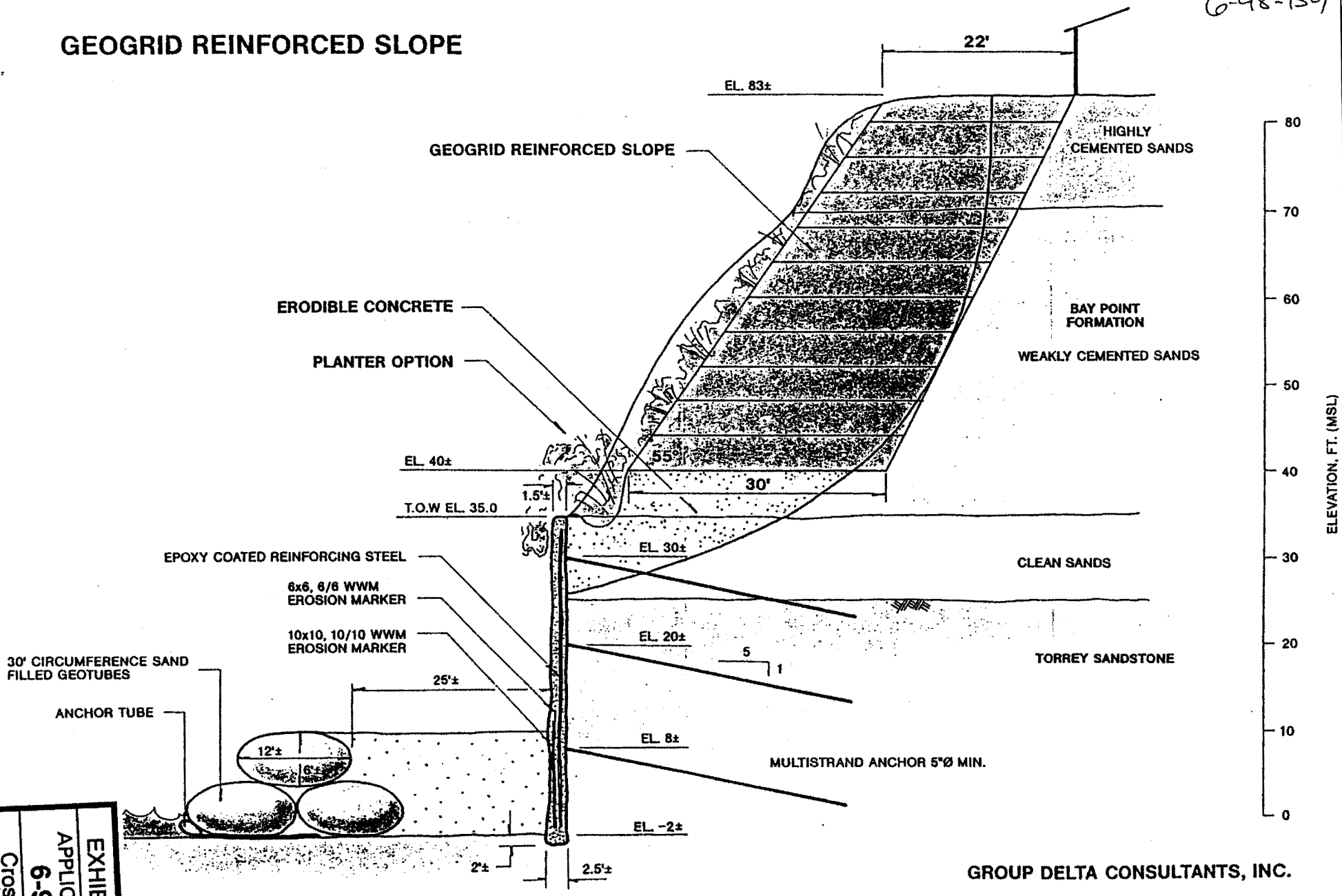
Note:
Scarp Geometry As Surveyed 10-20-98

PROJECT		PROJECT NO.	FIGURE
249/311 PACIFIC AVENUE SEAWALL	SITE PLAN	1831-3	1

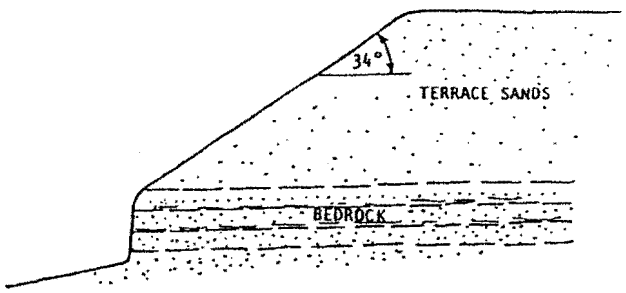
GROUP DELTA CONSULTANTS, INC.

6-98-134

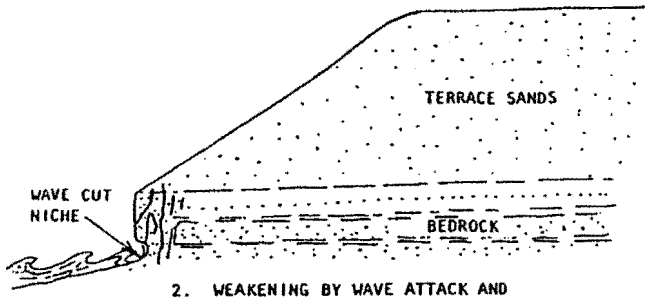
GEOGRID REINFORCED SLOPE



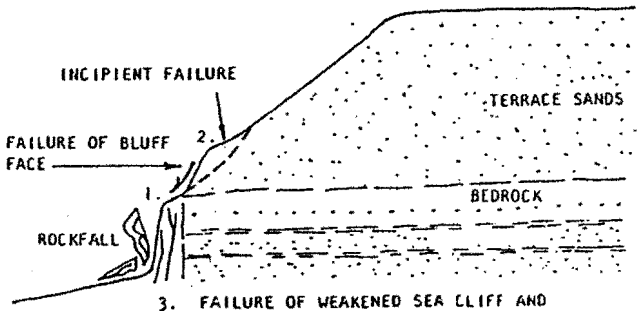
GROUP DELTA CONSULTANTS, INC.



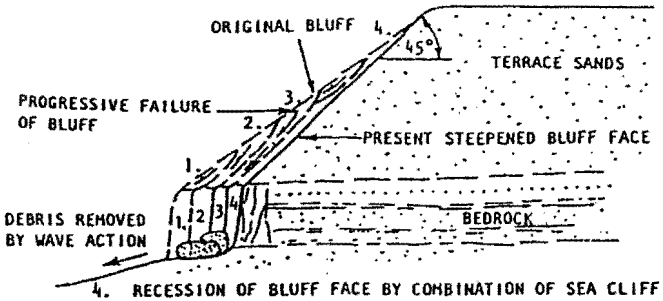
1. STABLE BLUFF



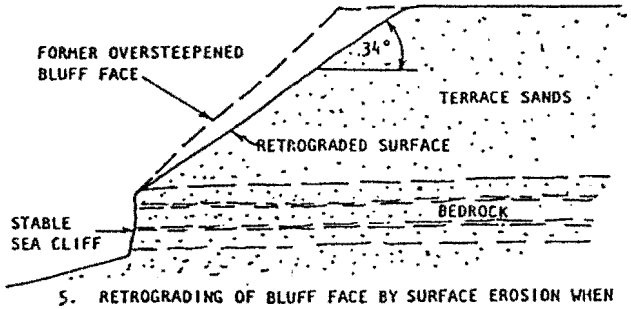
2. WEAKENING BY WAVE ATTACK AND DEVELOPMENT OF TENSION JOINTS



3. FAILURE OF WEAKENED SEA CLIFF AND INITIATION OF FAILURE IN BLUFF FACE



4. RECESSION OF BLUFF FACE BY COMBINATION OF SEA CLIFF AND BLUFF FACE FAILURES



5. RETROGRADING OF BLUFF FACE BY SURFACE EROSION WHEN TOE IS NOT ACTIVELY RETREATING

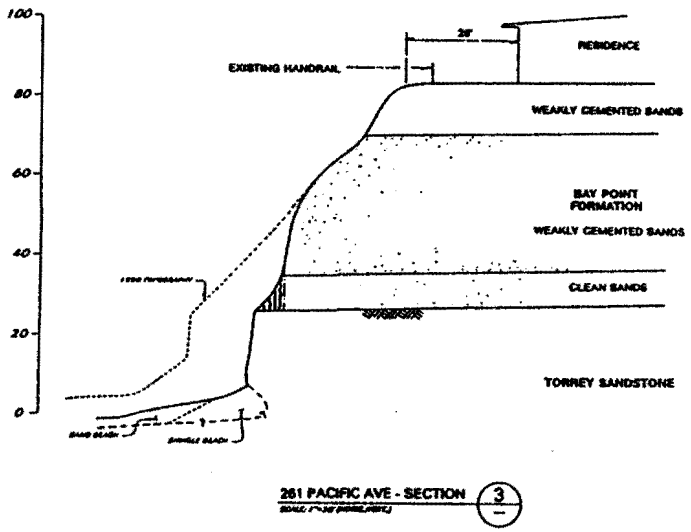
PROCESS OF SLOPE DECLINE

[Reproduced from Leighton & Associates, 1979]

GROUP DELTA CONSULTANTS

Project Name: 249/311 Pacific Avenue Seawall - Project Number: 1831-

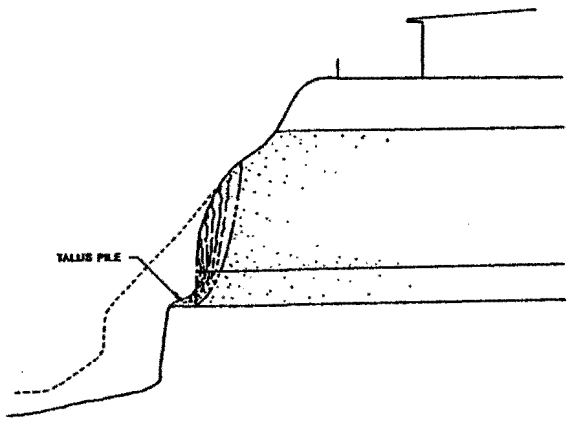
EXHIBIT NO. 4
APPLICATION NO.
6-98-134
Typical Bluff Erosion Process
California Coastal Commission



261 PACIFIC AVE - SECTION 3

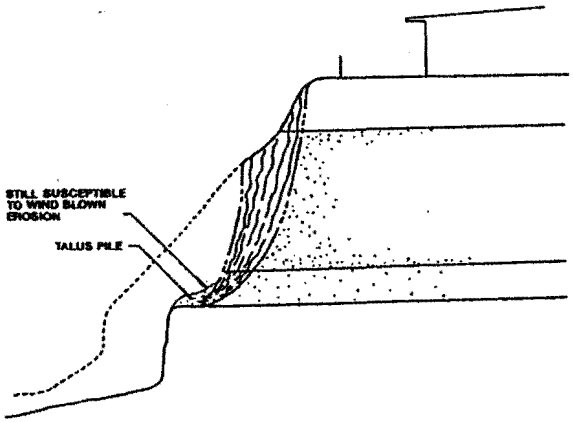
1

INITIAL SEACLIFF EROSION



2

INITIAL SLOUGHING OF CLEAN SANDS



3

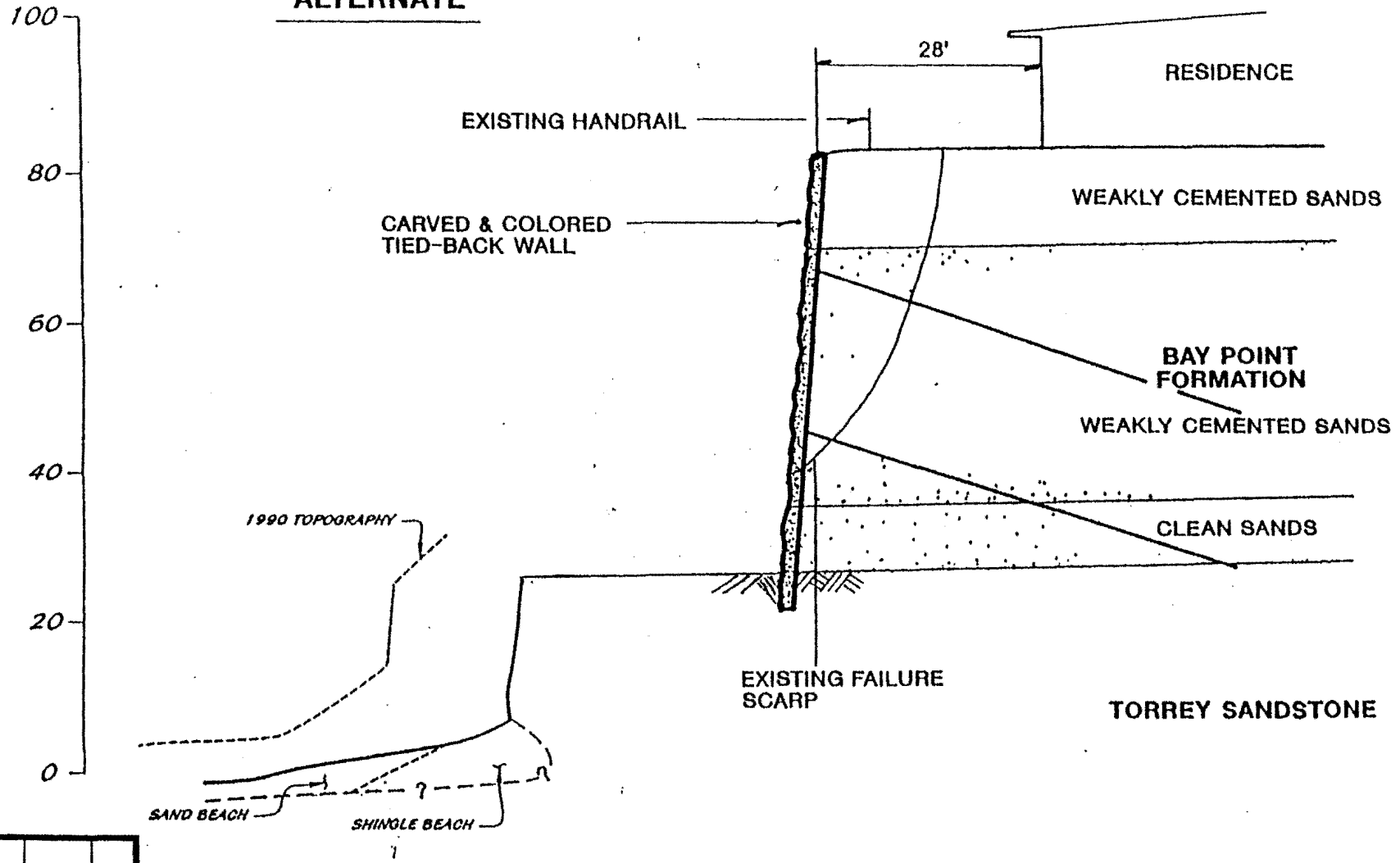
PROGRESSIVE UPPER BLUFF FAILURE DO TO LOSS OF CLEAN BASAL SANDS

EXHIBIT NO. 5
APPLICATION NO. 6-98-134
Clean Sands Erosion Process
California Coastal Commission

ENUE SEAWALL	FAILURE MECHANISM OF CLEAN SANDS	Project No. 1831-3	Figure 21

LTANTS, INC.

UPPER BLUFF REPAIR ALTERNATE

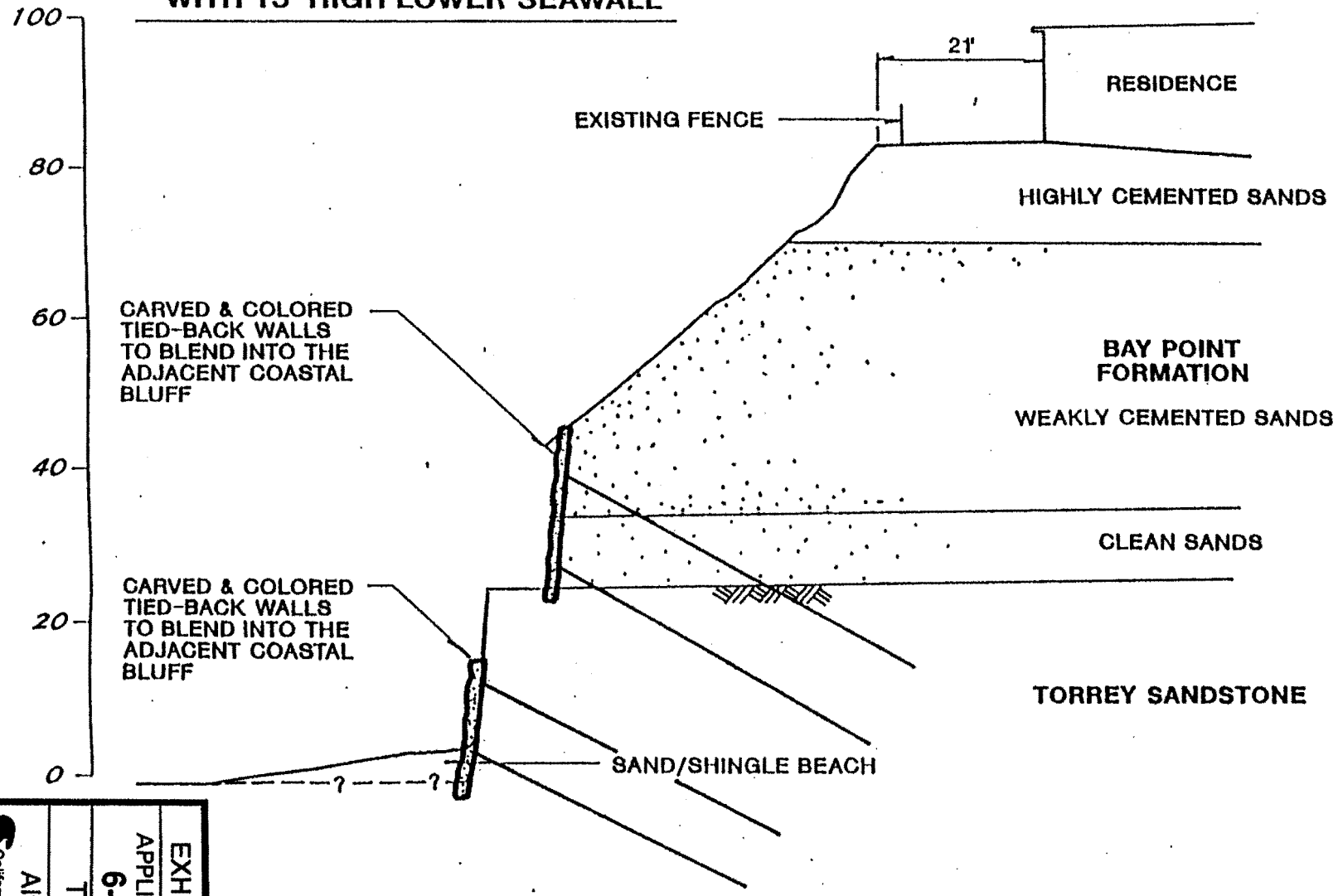


261 PACIFIC AVE

SCALE: 1"=20' (HORIZ./VERT.)

EXHIBIT NO. 6
APPLICATION NO. 6-98-134
Upper Bluff Alternative
California Coastal Commission

UPPER BLUFF REPAIR ALTERNATE WITH 15' HIGH LOWER SEAWALL



255 PACIFIC AVE

SCALE: 1"=20' (HORIZ./VERT.)

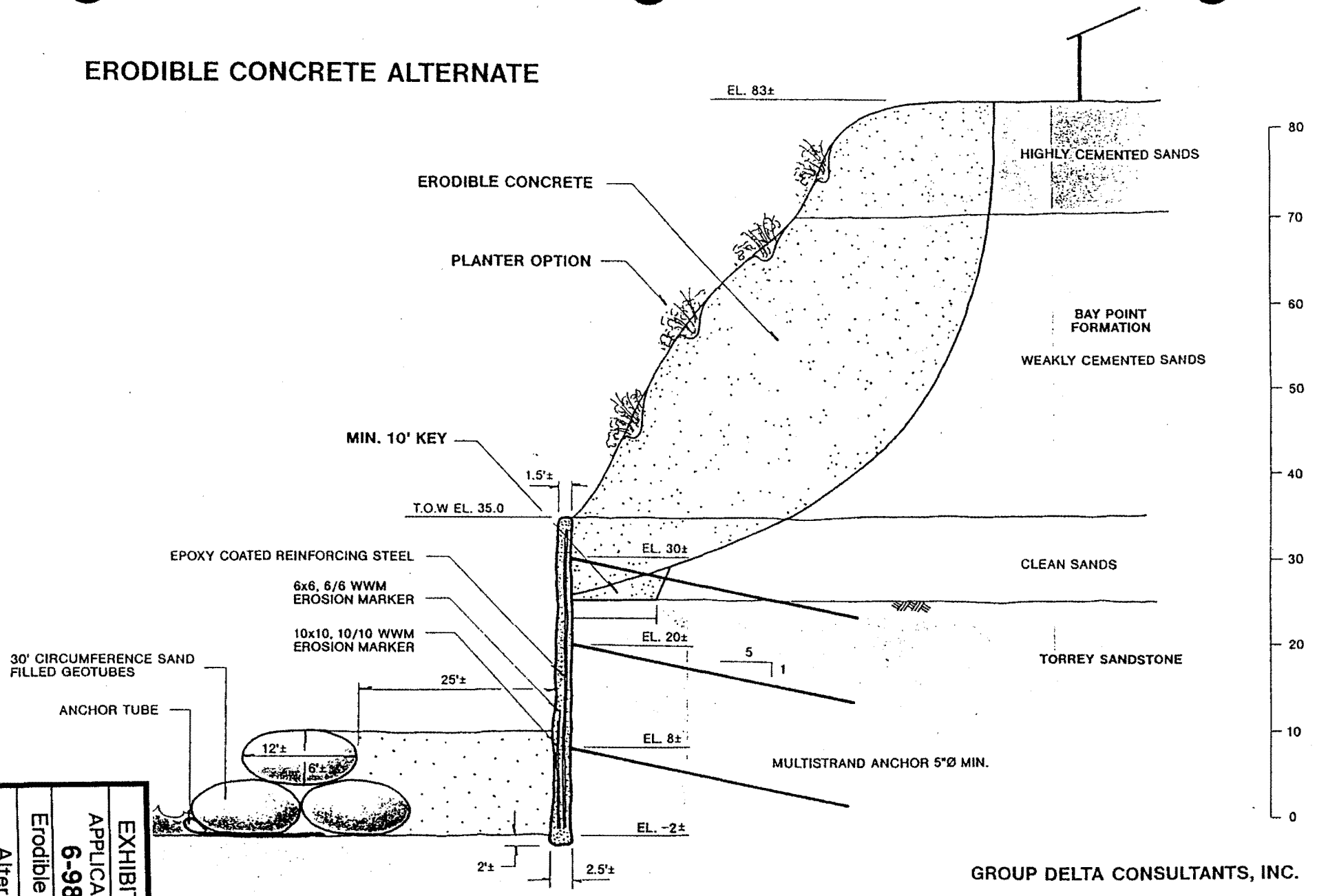
EXHIBIT NO. 7

APPLICATION NO. 6-98-134

Two-Wall Alternative

California Coastal Commission

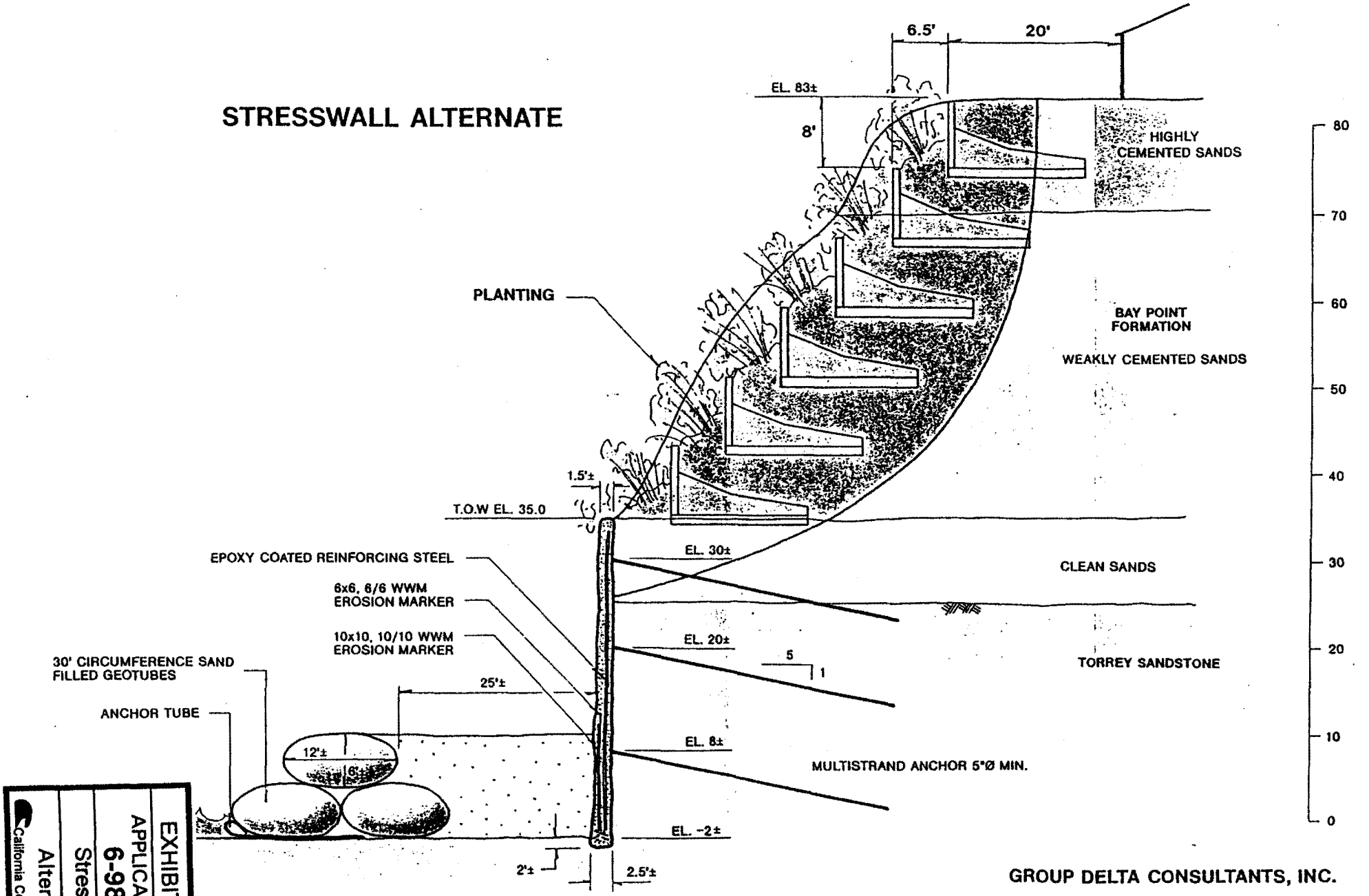
ERODIBLE CONCRETE ALTERNATE



GROUP DELTA CONSULTANTS, INC.

EXHIBIT NO. 8
APPLICATION NO. 6-98-134
Erodible Concrete Alternative
California Coastal Commission

STRESSWALL ALTERNATE



GROUP DELTA CONSULTANTS, INC.

EXHIBIT NO. 9
APPLICATION NO. 6-98-134
Stress Wall Alternative
California Coastal Commission

Utilizing equation (2):

$$V_t = 4928 + 1901 + 792$$

$$V_t = 7621\ yard^3$$

Utilizing equation (1):

$$M = 7621\ x\ \$13.00/yd$$

$$M = \$99{,}073$$

Sand Mitigation Fee Parameters

W	=	352 ft
E	=	2½ ft
v	=	0.9
R	=	0.2 ft/yr
L	=	30 yr
S	=	75%
h_s	=	36 ft
h_u	=	48 ft
R_{cu}	=	0.2
R_{cs}	=	0
C	=	$13/cy

GROUP DELTA CONSULTANTS

EXHIBIT NO. 10
APPLICATION NO.
6-98-134
Sand Mitigation Fee
Calculations
California Coastal Commission

Site-specific values for equation variables:

C = $13.00 per cubic yard to purchase and deliver sand

R = 0.2 ft/yr

L = 30.0 years

W = 352 feet

S = 0.75

h = 84 feet

v = 0.9 yard^3 per foot of width and foot or retreat

E = 2.5 feet

Utilizing equation (3):

$$V_b = \frac{0.2 \times 30 \times 352 \times 84 \times 0.75}{27}$$

$$V_b = 4928 \ yard^3$$

Utilizing equation (4):

$$V_w = 0.2 \times 30 \times 0.9 \times 352$$

$$V_w = 1901 \ yard^3$$

Utilizing equation (5):

$$V_e = 2.5 \times 352 \times 0.9$$

$$V_e = 792 \ yard^3$$

Ellen M. Stephenson
1120 Highland Dr.
Del Mar, CA 92014
Ph: (619) - 755 - 9027

December 15, 1998

To: California Coastal Commission
c/o Diana Lilly
311 Camino del Rio North
San Diego, CA 92108

Re: January 1999 Meeting

References: 1. CDP 6-98-134 Presnell et. al. Solana Beach:
352 foot long seawall.
2. CDP 6-98-127 Ann Baker et. al. Solana Beach:
Infill of seacaves and under-cut areas of bluffs.

Dear Commissioners:

I am opposed to both of these projects being approved without first doing an environmental impact report. These projects could have a major impact on the entire length of the Solana Beach shoreline. For example, the Coastal Act, Section 30253 states in part that new developments shall not in any way require the construction of protective devices that would substantially alter natural land forms along bluffs and cliffs.

The construction of a 352 foot long, 35-foot high shotcrete tied-back seawall at the base of a coastal bluff below eight single-family residences and construction of a geogrid-reinforced fill slope on the upper portion of the bluff below one of the residences, at 249 Pacific Ave. to 311 Pacific Ave., Solana Beach, San Diego County would substantially alter natural landforms along the bluffs and cliffs below these residences.

Coastal Act, Section 30251 states:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas.

This means that the scenic value of shoreline areas is a coastal resource of public importance worthy of protection and that protective devices that substantially alter natural landforms along bluffs and cliffs should be discouraged.

Ellen M. Stephenson
1120 Highland Dr.
Del Mar, CA 92014
Ph: (619) - 755 - 9027

December 15, 1998

Shoreline protective devices result in the loss of the public's sandy beach area occupied by the structure, lead to narrowing and eventual disappearance of the beach in front of the structure, create adverse visual impacts and loss of lateral public access along the shoreline.

The above issues are all cited in Coastal Act policies and any shoreline structures that don't value the above concerns of the public's right to enjoy the beach experience need to be addressed in an environmental impact report.

The Commission needs to look closely at the cumulative impact of the above referenced projects plus 290 feet approved by the Solana Beach City Council for a total of 1000 feet of visual impact. No seawalls to date look like the natural bluffs and they don't erode like natural bluffs over a long time period. The Commission also needs to be reminded that there are a few properties with deed restrictions waving their right to a seawall that are included in the larger project along with properties without deed restrictions. The CDP 6-98-134 includes 265 Pacific Ave. (CDP 6-95-23 Bennett) which has a deed restriction. To approve 6-98-134 would violate the Coastal Act which required the deed restriction in the first place.

Other addresses where a deed restriction has been recorded are:

301 Pacific Ave. (PDP 6-89-288)
319 Pacific Ave. (CDP 6-95-139, Minturn)
367 Pacific Ave. (CDP 6-97-50, O'Neal)

In closing, I believe there is a need for an environmental impact report of the two projects before you today, before you consider the possible armoring of such a long stretch of our Solana Beach shoreline.

Sincerely,

Ellen M. Stephenson

Ellen M. Stephenson
Solana Beach Resident

THE CALIFORNIA COASTAL COMMISSION SAN DIEGO, CA

RECEIVED
DEC 15 1996
CALIFORNIA
COASTAL COMMISSION
SAN DIEGO COAST DISTRICT

Dear Commissioners:

The following residents and homeowners of Solana Beach oppose a proposed 350 ft. long and 35 ft. high sea wall (retaining wall) at 249 through 311 Pacific Ave. To call an emergency to this amount of shoreline to circumvent the California Environmental Quality Act (C.E.Q.A.) is absolutely preposterous!

We ask that the commission deny this project, it is an attack on our bluffs and shoreline.

NAME:	ADDRESS:
Roy E. Warden	464 Barbara Ave Solana Beach
Margaret Schlesinger	244 Pacific Ave. S.B.
[illegible]	712 [illegible] Street - Solana Beach
Arlene DeVore	535 Seabright Lane S.B.
[illegible]	535 Seabright Lane S.B.
[illegible]	1120 Highland Dr. Del Mar
Donna M. Warden	464 Barbara Ave S.B.
Sheelagh Williams	638 West Circle Drive, SB.
[illegible] Williams	638 W. Circle, Solana Beach
[illegible] ([illegible])	643 N. Granados Ave, Solana Beach, 92075

12-13-98

California Coastal Commission
c/o Diana Lilly
3111 Camino Del Rio North
San Diego, Ca. 92108

Re: Case # 17-98-25
Permission to Grant Seawall,
Solana Beach, California

Gentlemen:

It is my understanding that the Commission will be considering permission to construct seawalls 352 feet long and 35 feet in height on public beach property in Solana Beach.

It is also my understanding that the materials submitted to you requesting your approval of this project does not contain an environmental impact report or an analysis of the respective liabilities, etc., of the granting parties, e.g. the City of Solana Beach. Certainly, at a minimum, those reports are essential to your consideration.

For these reasons, as a taxpayer and a recipient of the benefits of our public resources, I am requesting that this Commission find the application, as submitted, insufficient for your approval or denial at your January meeting.

Thanking you in advance, I am
Respectfully,

NORMA W. RUHM
712 SONRISA STREET
SOLANA BEACH, CA 92075
619. 755. 0486

To: California Coastal Commission
From: Scott, Sheelagh, Jenny and Geoff Williams SW
638 West Circle Drive
Solana Beach, CA 92075
Date: 14 December, 1998
Subject: CDP 6-98-134 (Presnell, et.al., Solana Beach) and CDP 6-98-127 (Ann Baker, et.al., Solana Beach)

From Staff Report for CDP 6-97-126-A2, 211 Pacific Avenue, Solana Beach "The Commission is not required to approve a shoreline altering device pursuant to Section 30235." The staff report goes on to say that there are feasible alternatives including "underpinning the existing residence, addressing groundwater and irrigation runoff and removing portions of the home."

The applicant for CDP 6-98-134 is requesting permission to build a 352 foot long, 35 foot high seawall with an additional 50 feet of geogrid reinforced slope above. We oppose approval of the proposed project for the following reasons:

- The proposed 352 foot long, 35 foot high is overkill for the purported problem.
- Many of the homeowners included in the proposed project have remodeled in recent years, building closer to the bluff edge than allowed by the Coastal Commission. At least 2 properties have explicitly waived their right for protective measures via deed restrictions. We believe the CCC cannot approve a seawall for these properties.
- The proposed seawall will have permanent adverse visual impacts on the bluff and immediate adverse impacts on the sand beach in front of it.
- Solana Beach does not have a coastal plan which provides a framework for bluff and beach protection. A balance between bluff protection and beach protection is not being made. Private homes on the bluffs are being protected to the exclusion of the public beach.

The applicant for CDP 6-98-127 is requesting permission to build over 400 feet of contiguous seacave infill up to 16 feet high. We oppose approval of the proposed project for the following reasons:

- The proposed "seawall" will have adverse visual impacts on the bluff and adverse impacts on the sand beach in front of it.
- Solana Beach does not have a coastal plan which provides a framework for bluff and beach protection. A balance between bluff protection and beach protection is not being made. Private homes on the bluffs are being protected to the exclusion of the public beach.
- The cumulative impact of CDP 6-98-134 and CDP 6-98-127 plus another contiguous seacave infill of 290+ feet (approved at the 3 December, 1998 meeting of the City Council of Solana Beach with a negative declaration on the

need for an EIR which failed to address the issue of cumulative impact) is enormous.

These two projects and the third project, which will no doubt be before this Commission soon, should not be considered in a piecemeal fashion. Solana Beach only has about 8000 linear feet of bluff. These three projects will irretrievably alter over 1000 linear feet of bluff. This is a significant cumulative impact on the bluffs of Solana Beach.

This document contains data which support the above and contains the following:

I. Photos which show that conditions similar to those in the area of the proposed project exist in Solana Beach and have been stable for up to several years. Photos which show the relatively pristine condition of the bluffs where the seawall and contiguous seacave infill is proposed. Photos of the massive Steinberg seawall which is half the length and half the height of the proposed seawall.

II. Copies of the deed restrictions for two properties included in CDP 6-98-134 and a discussion of the impact of inclusion of these properties within the proposed project.

III. A discussion of the impacts of the proposed seawall on the beaches and the natural bluff.

IV. A discussion of balancing the protection of bluff top properties and the protection of the public beach.

V. A Vision for the Future of Solana Beach Bluffs

I. Photos of the Bluffs in Solana Beach

We have been studying the bluffs along the northern part of Solana Beach for over three years. Our methodology has been to periodically photograph the bluff, particularly those areas where sea cave plugs or seawalls have been constructed and where bluff erosion events are occurring. We are including here photos from our bluff study. The first two photos are of the same bluff area. Photo 1 shows the bluff after a collapse which exposed the deck at 617 West Circle Drive. Photo 2 shows the bluff over three years later. No further significant erosion of the bluff has occurred. Photos 3 through 7 show other bluff areas in north Solana Beach where erosion events similar to 261 Pacific Avenue have occurred and the bluff appears to have stabilized.

Photo 1: 14 May, 1995. Taken from beach looking up at 617 West Circle Drive
Fresh bluff collapse which exposed deck.

Photo 2: 3 November, 1998. Taken from same location
No further bluff erosion has occurred in over three years.

Photo 3: 3 November, 1998. Taken from beach looking up at 601 and 611 West Circle Drive
Deck has been exposed for at least three years

Photo 4: 3 November, 1998. Taken from beach looking up at 419 Pacific Avenue
Bluff erosion occurred in 1997. Emergency sea plug work was done in late 1997 or early 1998.

Photo 5: 3 November, 1998. Taken from beach looking up at 371 Pacific Avenue
No data on how long this "clean sand" has been exposed.

Photo 6: 3 November, 1998. Taken from beach looking up at 261 Pacific Avenue, the Colton property, where emergency is purported to exist.

Photo 7: 3 November, 1998. Taken from beach looking up at 225 Pacific Avenue.
No data on how long this "clean" sand" has been exposed, but this part of the bluff has been very steep for several years.

Photo 8: 3 November, 1998. Taken from the beach south of the proposed seawall and seaward of the proposed seacave infill.

Photo 9: 15 January, 1995. Three overlapping photos taken seaward of the Steinberg seawall.

PHOTO 1:

PHOTO 2:

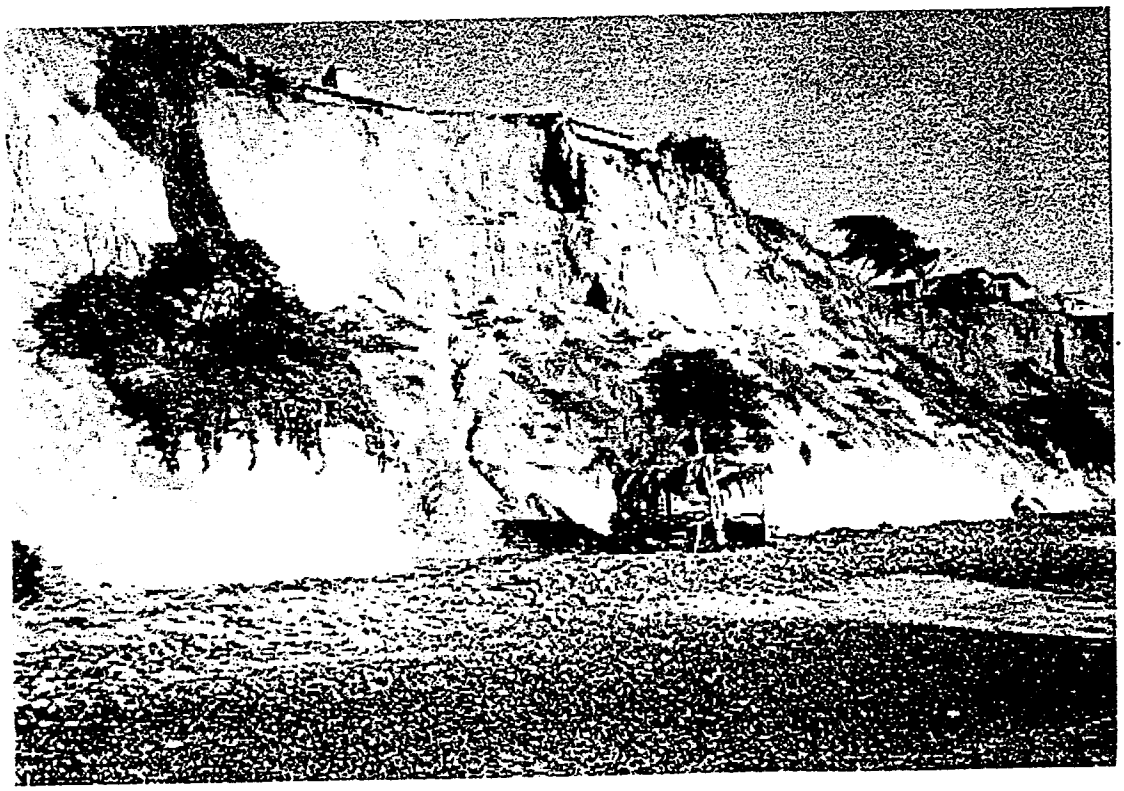


PHOTO 3:

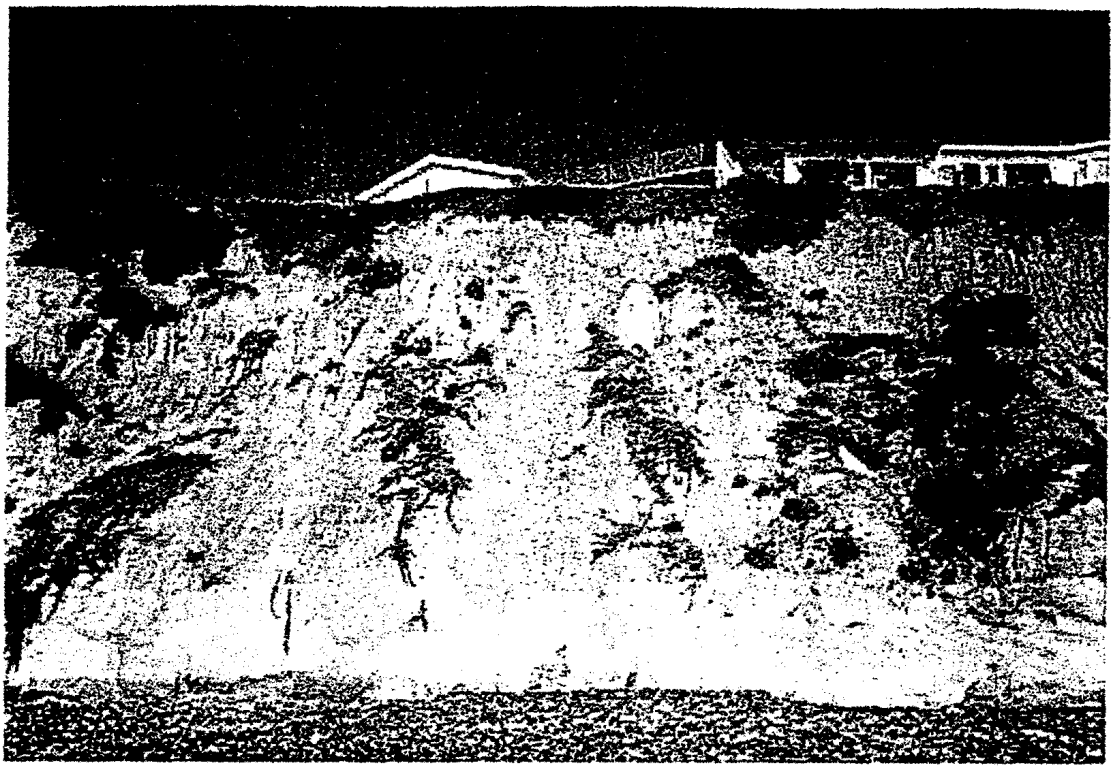


PHOTO 4:

PHOTO 7:

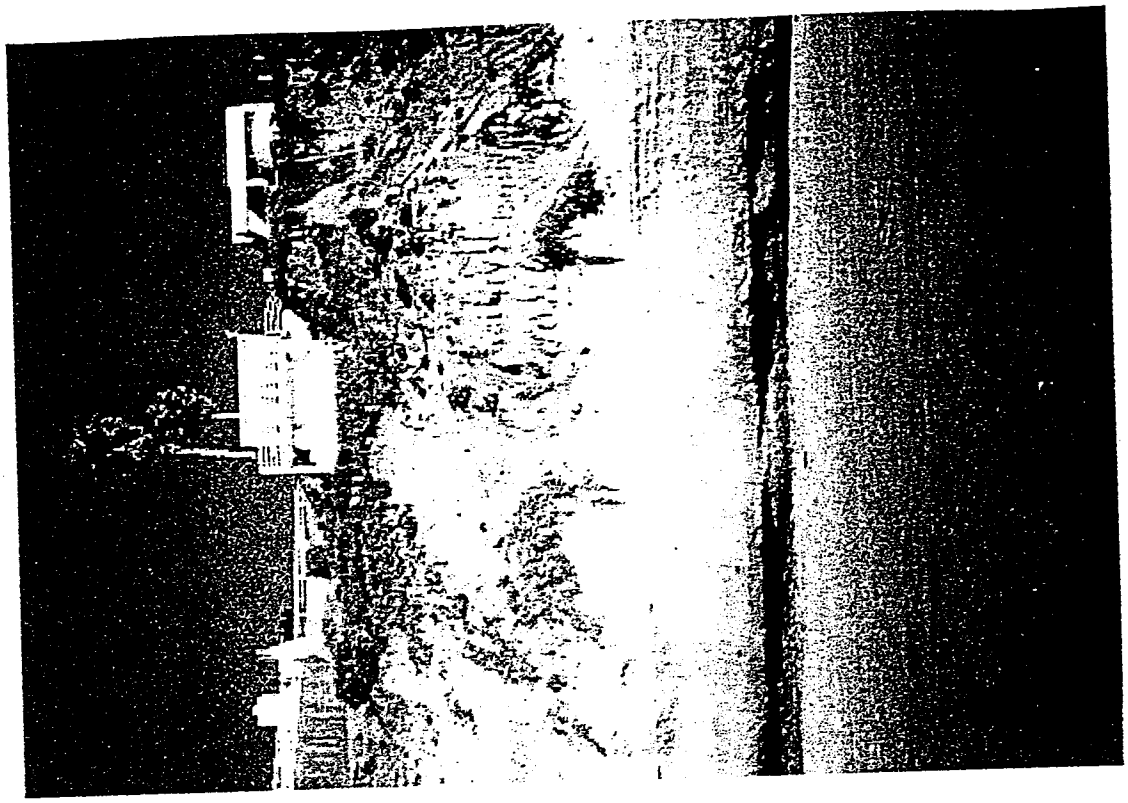


PHOTO 8:

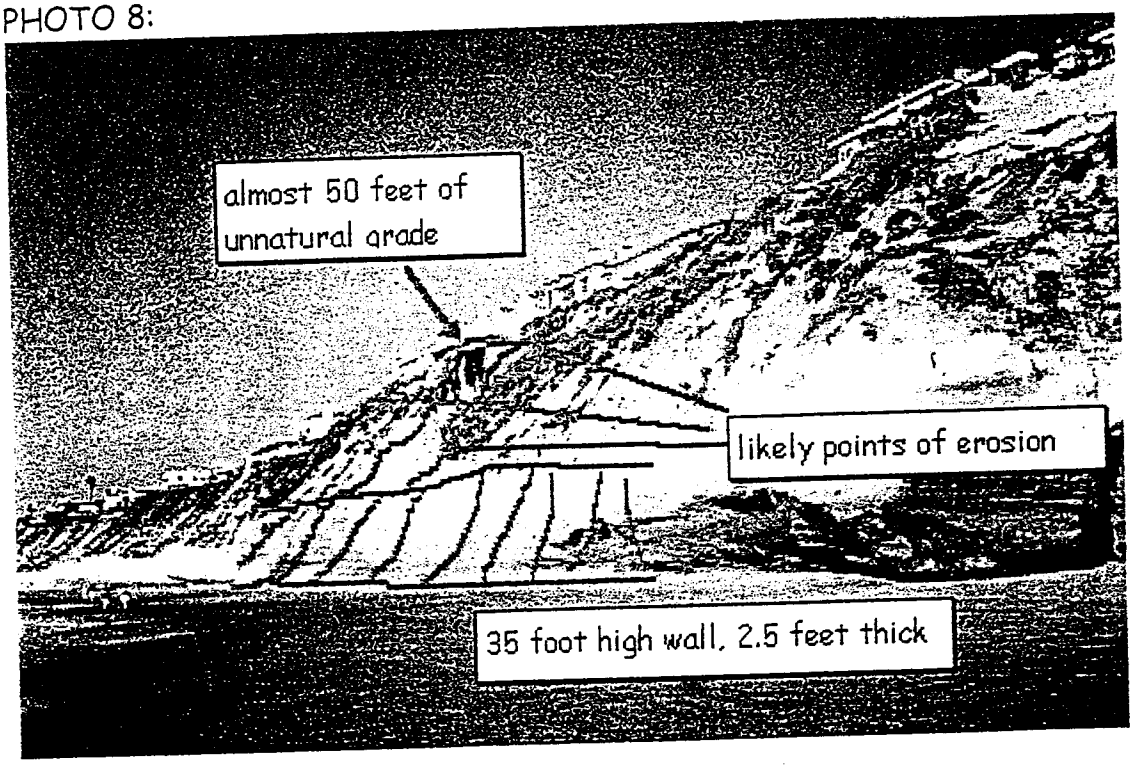
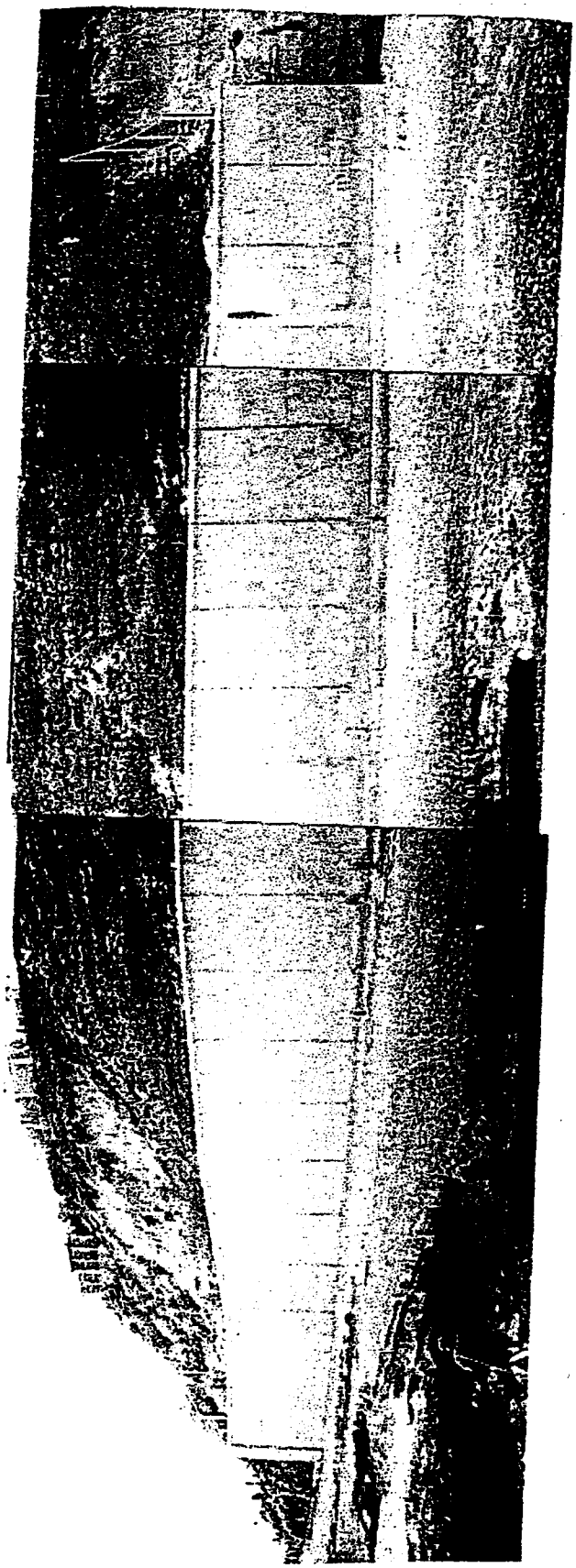


PHOTO 9:

1/15/95

Tad
Stanberg
Seawall



II. Copies of Deed Restrictions Prohibiting Bluff and Shoreline Protective Devices

These deed restrictions were required by the Commission in order to comply with the Coastal Act.

permit #	address	
6-94-33	265 Pacific	Bennett
6-98-288	301 Pacific	Paskin

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.**

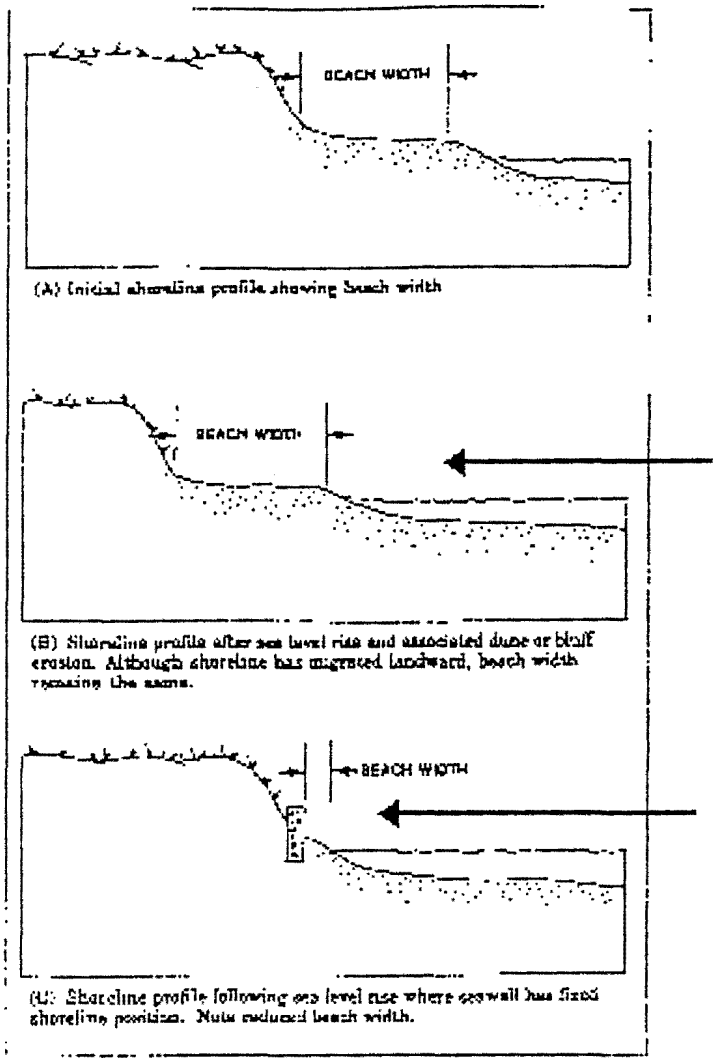
In the staff report for CDP 6-97-50, a recent case in Solana Beach, one finds the following commentary by staff:
"However, the Commission has approved blufftop development closer than 40 feet from the bluff edge when accompanied by a recorded deed restriction that acknowledges **the right to a seawall has been waived** and **requires portions of the home that are threatened in the future from erosion and bluff failure to be removed.** This alternative, known as "planned retreat" allows the line of development to recede commensurate with bluff retreat. [...] The useful life is dictated by the rate of bluff retreat."

Two deed restricted properties are included in the current seawall proposal. The CCC **cannot forgo enforcement** of the deed restriction when a deed restricted property is included in a larger project with unrestricted properties. So it must disapprove CDP 6-98-134 as proposed because it includes 265 Pacific Avenue and 301 Pacific Avenue. To approve CDP 6-98-134 would violate the Coastal Act which required the deed restrictions in the first place! Failure to disallow bluff and shoreline protection for 265 Pacific Avenue would gut all deed restrictions imposed by the Commission. Properties subject to the deed restriction would simply have to be included in a larger project to overcome the restriction. This approach would require that **every property include a deed restriction** before any deed restriction could be enforced. This is clearly contrary to the Commission's intent when requiring the deed restrictions and a violation of the Coastal Act which places such a high priority on protection of our irreplaceable coastal resources like the beautiful bluffs of Solana Beach.

III. Impacts of the Proposed Seawall

IV.1 Beach Narrowing

The experts in beach erosion, including Dr Reinhard Flick of Scripps and Dr. Gary B. Griggs of the Institute of Marine Sciences at UC Santa Cruz, have agreed that there are three possible ways in which seawalls and other hardened surfaces can impact beaches. First, the placement of the seawall can take away beach if it's placed in such a way that some beach is landward of it. This is called impoundment and is not a significant factor in either of the current projects. The second possible method of beach impact is called **passive erosion.** This occurs when a seawall is built along a shoreline undergoing long-term net erosion, as is the case now in Solana Beach. According to Dr. Griggs, "the shoreline will eventually migrate landward beyond the structure (Figure 1). The effect will be the gradual loss of the beach in front of the seawall or revetment as the water deepens." He goes on to state "This process of passive erosion appears to be a generally agreed upon result of fixing the position of the shoreline on an otherwise eroding stretch of coast, and is independent of the type of seawall constructed." The third way in which seawalls can impact beaches is called **active erosion.** The idea here is that the seawall induces even further change, perhaps by reflecting the waves. As Dr. Griggs points out, "The ability or potential for a seawall or revetment to induce or accelerate erosion has, in our view, been the source of most of the controversy over the past decade regarding the impacts of seawalls on beaches." Dr. Griggs has been conducting a long study (7 years as of 1994) on a stretch of beach in Aptos, California, a small town near Santa Cruz. In Dr. Griggs' July 1994 report he says "In seven years of surveying, we have never observed a scour trough directly fronting any of the seawalls studied." However, in this same article, Dr. Griggs also states "As a result of this increased wave energy at the downcoast or downdrift ends of seawalls, an arcuate zone of localized scour typically develops in the winter months which extends downcoast from 50 to a maximum of 150 m." So in this original article Dr. Griggs clearly states that seawalls do cause active erosion at their edges. In 1996, Dr. Griggs published a follow-on article which describes the impacts of the storm waves of 1995 in this same area. In 1995 Dr. Griggs found scouring directly in front of the seawalls! It is important to note that in both these studies, the beach in Aptos recovered during the summer. Other researchers, including Dr. Orrin Pilkney of Duke University and Dr. Scott Jenkins of Scripps, note that the Aptos beach is in an area where the beach has an abundant supply of sand, unlike our beaches in Solana Beach.



To summarize, the experts are in complete agreement that passive erosion due to seawalls in an area of retreating shoreline results in a narrowing beach until no beach is left.

I would note that in the Shoreline Erosion Assessment and Atlas of the San Diego Region, edited by Dr. Flick, there is a discussion of potential tactics for beach management. In summary, the author notes "Final selection can only be made following review by political jurisdictions and regulatory agencies. Design studies, including engineering, economic and **environmental factors must be prepared** and approved by local communities and the region prior to implementation." This references beach widening projects. How much more important to do for projects which will narrow our beaches!

References

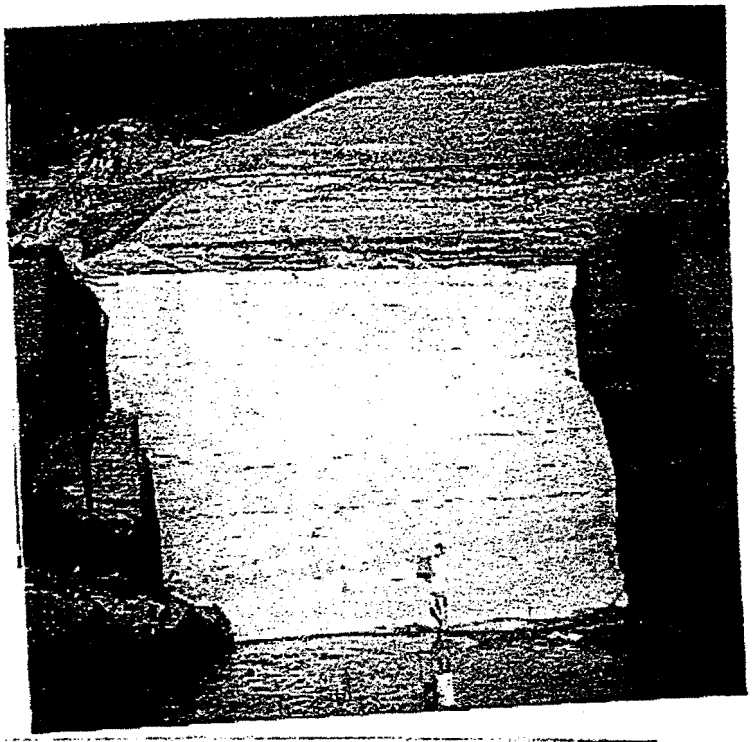
Flick, R.E. and E.H. Sterrett. "The San Diego Shoreline." *Shoreline Erosion Assessment and Atlas of the San Diego Region*, vol I. Sacramento, California: California Department of Boating and Waterways, 1994.

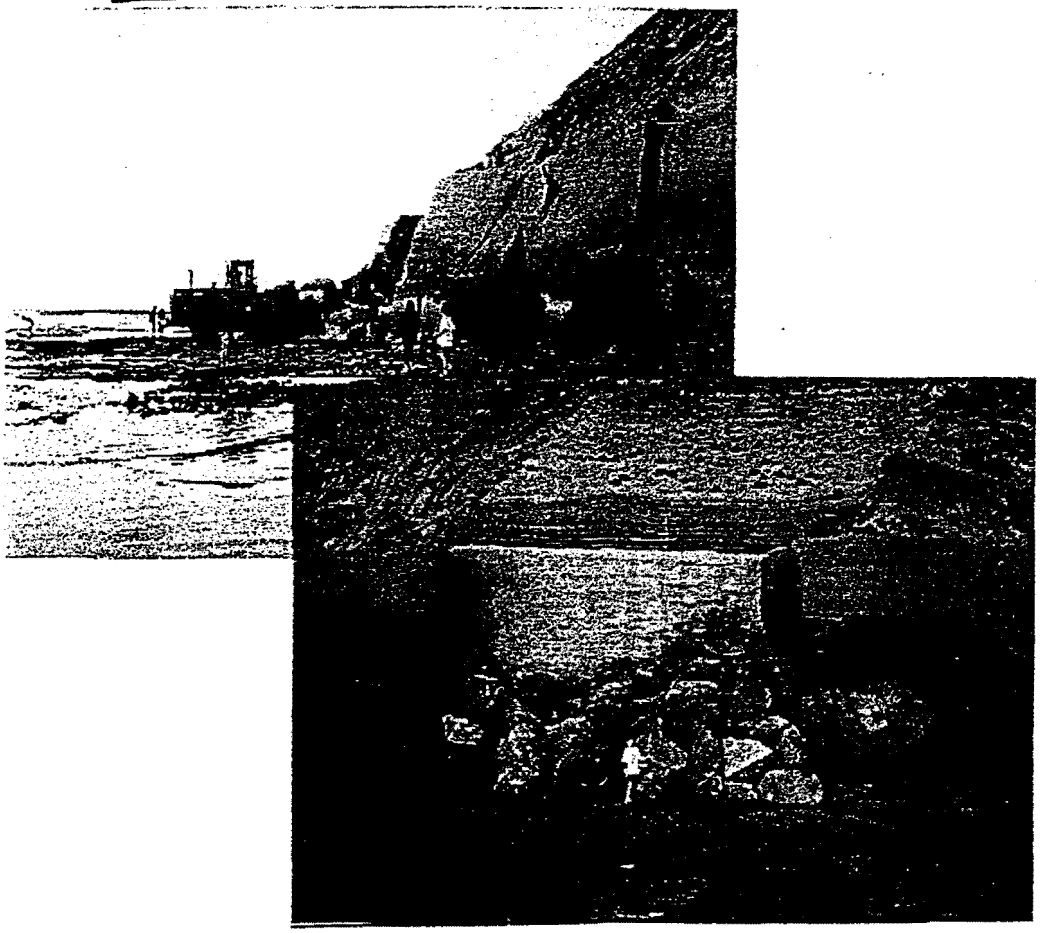
Griggs, G.B, Tait, J.F, and Corona, W.W., 1994. "The Interaction of Seawalls and Beaches: Seven Years of Monitoring, Monterey Bay, California." *Shore and Beach* 62:3:21-28.

Griggs, G.B., Moore, L.J., Tait, J.F., Scott, K., and Pembrook, D., 1996. "The Effects of the Storm Waves of 1995 on Beaches Adjacent to a Long-Term Seawall Monitoring Site in Northern Monterey Bay, California." *Shore and Beach* 64:3:34-39.

IV.2 Visual Impacts

The sea wall as proposed is 2.5 feet thick, with a one foot "sacrificial" layer of erodible concrete and a one and a half foot layer of non-erodible concrete. The intent is clearly to construct a permanent fixture on our bluff. The erodible layer purportedly will resemble the existing bluff. Other projects by the applicant's consultant, Mr. Walt Crampton, such as the Wood seawall at 523 Pacific Avenue, also were planned to resemble the existing bluffs. There are NO sea walls or sea cave plugs in Solana Beach which successfully mimic the beauty of the natural bluffs. These photos of the Wood Sea Wall were taken on 14 February, 1996, 31 December, 1997, 3 November, 1998. The first photo was taken as the Wood seawall was completed. It clearly shows that the wall does not have the same color or texture as the natural bluff and that the geogrid reinforced slope bears no resemblance to the natural bluff. The second photo captures the moment when heavy equipment was on our beach placing additional riprap in front of the seawall. The third photo shows the awful visual impact of this seawall. The fourth photo shows that the riprap is still on our beach and that erosion has started to occur on the south edge of the geogrid reinforced slope.





Please note the erosion on the south edge of the geogrid reinforced slope. This photo was taken on 3 November, 1998.

IV. Balancing Protection of Bluff Top Homes and Protection of the Public Beach

The City of Solana Beach does not have a local coastal plan which provides a framework for approval or denial of bluff protection measures. Proposals are considered piecemeal. In fact, when the City of Solana Beach approved their "comprehensive" sea wall ordinance, they did not perform an EIR. The staff report for the ordinance said that EIRs would be required as projects were presented to the City for approval. At the November 17, 1998 Council meeting, the CDP 6-98-134 project was approved without an EIR based on the supposition of an emergency condition. At the November 23, 1998 Council meeting, the CDP 6-98-127 project, a 400+ foot long, 16 foot high contiguous sea cave and overhang project, was approved without an EIR. On December 1, 1998, an additional 290+ foot long, 16 foot high contiguous sea cave and overhang project was approved without an EIR. Despite public comment that the aggregation of these projects constituted a considerable impact on the bluffs of Solana Beach, the City Council approved the latter two projects without consideration of the considerable cumulative impact.

The City of Solana Beach is protecting the private property along the bluff top to the absolute exclusion of protecting the public beach. We are looking to the Commission to remedy this situation.

V. Vision for Solana Beach Bluff and Beach

It is not sufficient to simply say "no" to individual bluff protection projects as they are submitted. It is vital to have a vision for the future of our coastal bluffs and beaches. The root cause of the eroding bluffs along our coast is the lack of sand replenishment on our beaches. Until this is addressed, the beaches will retreat. Several agencies in our area are working on addressing this problem. Someday we may see the fruits of this work and sand will return to our beaches. When/if that happens what will remain of our bluffs? If projects like the current one are approved, we will have nothing but armored bluffs left.

We commend the Commission for the vision that they have been pursuing via the deed restrictions on properties as new development occurs closer to the bluff edge than 40 feet. Enforcement of this vision will result in a future where our children's children will still be able to enjoy the beauty of natural bluffs here in Solana Beach.

December 14, 1998

California Coastal Commission
San Diego, CA

RE: CDP 6-98-134

Dear Commissioners:

It seems the big selling point of this retaining wall is that it will erode at the same rate as our bluffs. I would like proof of this. Also, only the first foot is a sacrificial layer. What happens to the next foot and a half?
This same designer has left the riprap in front of his project (retaining wall) at the Woods property, north of Tide Park, why?. See enclosed photo.

Sincerely,

Roy E. Warden

Roy E. Warden

Tue. Dec. 15th.

Dear Diana Lilly:

Although these letters were directed to the Solana Beach City Council, they should be of interest to the Commission. Mr. Opp did give me permission to forward these to you.

Sincerely

Roy E. Wade

ROBERT D. UPP and
JANE D. UPP, Trustees
Owners of property at
341 Pacific Avenue
Solana Beach, CA 92075
(619) 481-2009

CASE NO.: 17-98-25

WRITTEN MATERIAL FOR PUBLIC HEARING
CITY OF SOLANA BEACH

In compliance with the Notice of Public Hearing on Case No. 17-98-25 set for Tuesday, November 3, 1998 at 6:30 PM in the Council Chambers at City Hall, 635 South Highway 101, to be held by the City Council of the City of Solana Beach, the following written material is submitted to the City Council members:

1. Reference is made to a prior written notice submitted to the City Council members by Robert D. Upp, dated Saturday, June 13, 1998, a copy of which is attached hereto as Exhibit "A".

2. The licensed engineering geologist and professional expert witness on soil matters referred to in Exhibit "A" has expressed an opinion that sea walls such as that proposed in this hearing only shifts the powerful force of high tides and waves to neighboring properties thereby escalating any erosion caused by such action.

3. While the City of Solana Beach owns most of the bluff between the Upp's property at 341 Pacific Avenue and the ocean, nevertheless, the City has a duty of lateral and subjacent support to the adjacent property above. Tract Map from the Upp's deed is attached hereto as Exhibit "B". California Civil Code, Section 670.

4. Coastal geologists say that although hardened structures may save buildings, it accelerates beach erosion. Orrin H. Pilkey, Duke University geologist and expert on coastal policy says "seawalls destroy beaches. Period." See article in *New Yorker*, December 16, 1996.

5. Hardened structures such as sea walls have been banned in Maine, North Carolina, and South Carolina.

6. If the city grants this permit and the building of such a sea wall causes serious damage to the Upp's property at 341 Pacific Avenue, we contend that the City and those involved in granting the permit and building the wall will be liable for any such damage. Albers v. County of Los Angeles (1965), 62 Cal. (2) 250, 42 Cal. Rptr. 89.

ROBERT D. UPP

JANE D. UPP

ROBERT DEAN UPP
ATTORNEY AT LAW
341 PACIFIC AVENUE
SOLANA BEACH, CALIFORNIA 92075
TELEPHONE (619) 481-2009

Saturday, June 13, 1998

Solana Beach City Council Members
Marian Dodson Joe Kellejian ✔ Tere Renteria Tom Campbell

Dear City Council Member:

Yesterday morning at 0500 I was awakened again by heavy equipment moving along the beach at the bottom of the bluff below my home. I realize that it was at minus low tide and perhaps the only time span window available for such operation. I also realize that the City of Solana Beach owns our lower bluff and can do whatever it deem necessary on city owned property so long as it doesn't damage others.

However, as owners of the lower bluff, the City should have a legal duty of lateral and subjacent support for those of us who own abutting property at the top. In any event, the City cannot lawfully exacerbate an existing condition. In my opinion, supported by a licensed engineering geologist and professional expert witness on soil matters, the permits issued for the placement of rip-rap along the public beach was an unwise move. It provided larger rocks, cannon balls if you will, that the power of the ocean could shoot against the cliff. From my observation, the placement of this rip-rap accomplished little, if anything, but it did put heavy equipment on the beach which probably added more destabilization to a bluff already weekened by seeping ground water. My expert states that rip-rap, if successful in holding back the force of high tides and waves, only shifts that power to neighboring properties.

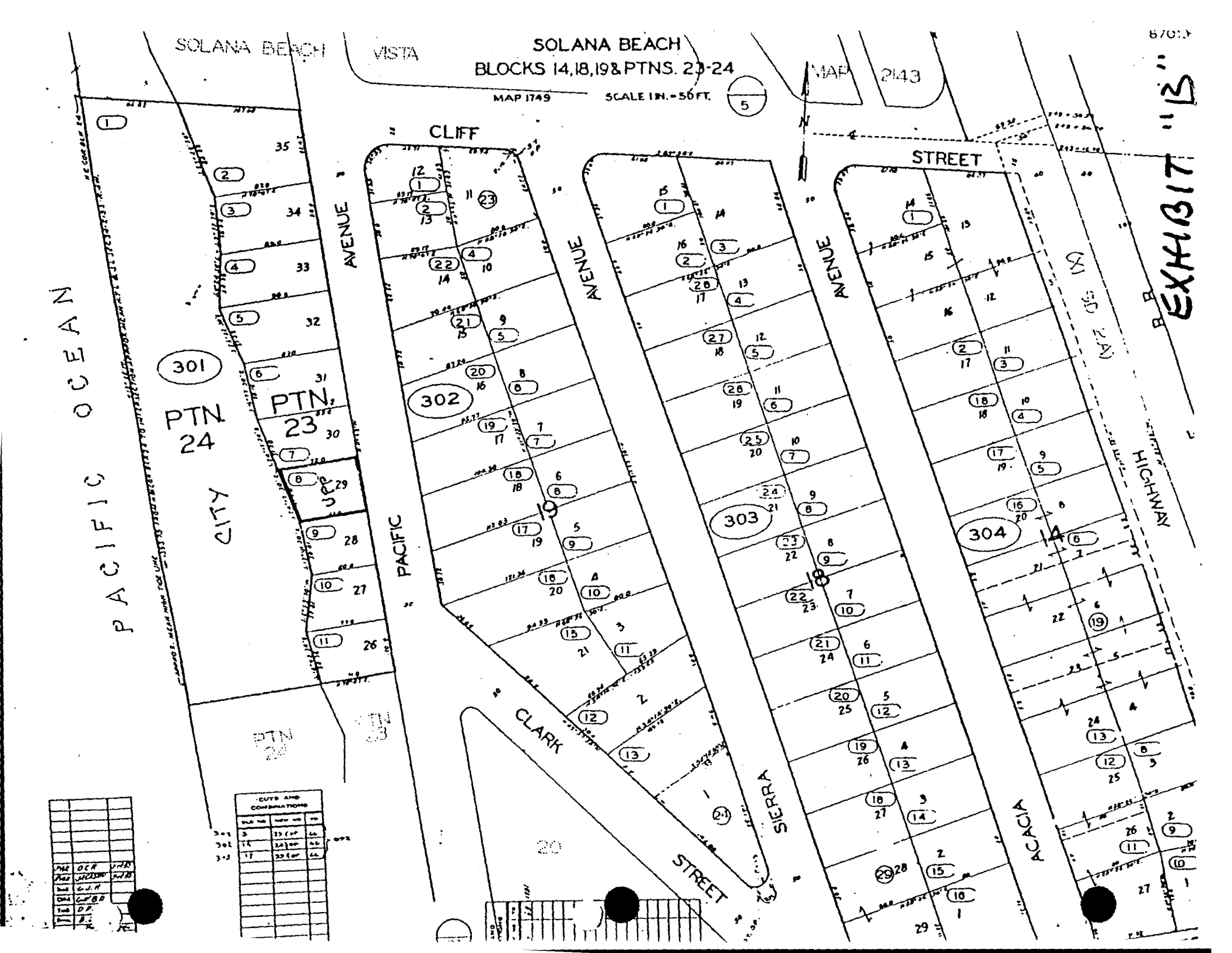
Since the City was incorporated, I notice that many permits have been granted to build houses with patios on the west side of Pacific Avenue. Such added weight is another factor that may destabilize our bluff.

My wife, Jane, and I have owned our property for 30 years and lived in it for the last 17. We had the bluff checked thoroughly for caves, fissures, faults, and cracks before we bought it. Some of our neighbors have bought and built over existing bluff problems. A number of them are engaged in a joint effort for an expensive private sea wall project. Several of our neighbors have been retired for years and live on fixed incomes. I have been assured by my expert that there is no problem with our property for the foreseeable future. If anything is to be done to save our beaches, it is a public matter, not a private one, and a responsibility of the city, state, and federal government.

Respectfully yours,

Robert Upp

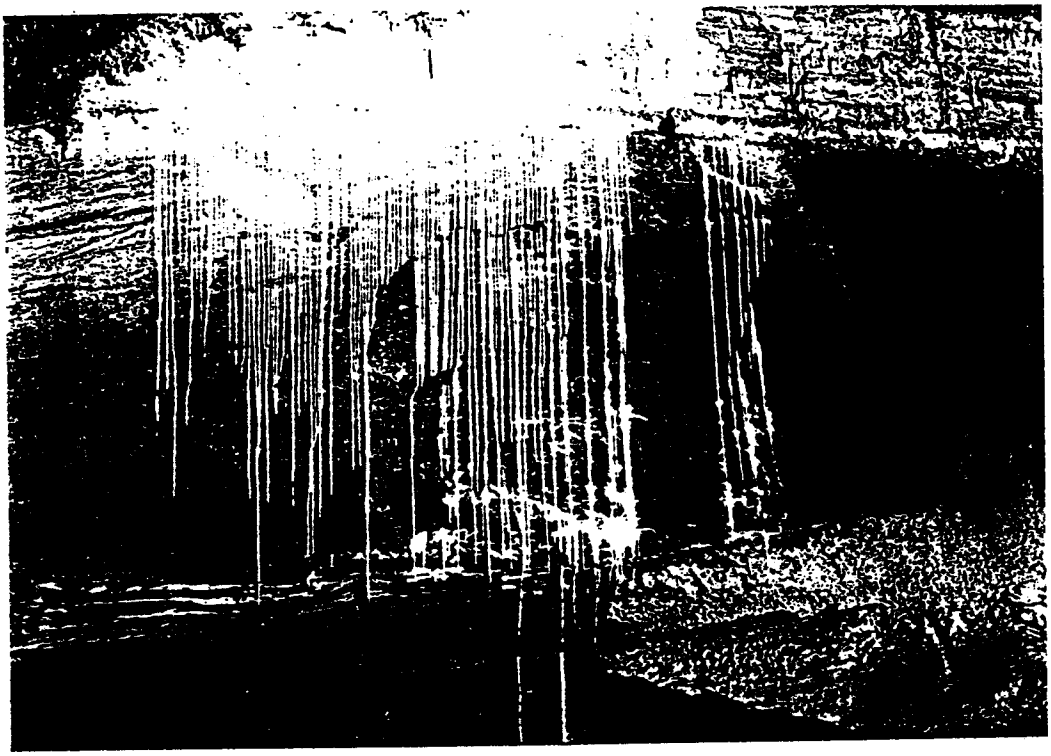
EXHIBIT "A"


SOLANA BEACH
BLOCKS 14,18,19 & PTNS. 23-24
MAP 1749
SCALE 1 IN. = 50 FT.
MAP 2143
SOLANA BEACH VISTA
CLIFF STREET
PACIFIC AVENUE
SIERRA AVENUE
ACACIA AVENUE
CLARK STREET
PACIFIC OCEAN
CITY
PTN 24
PTN 23
301
302
303
304
HIGHWAY (X1 SD 2A)
EXHIBIT "B"

COATING RUNNING DOWN
OF OUR BLUFF. NOTICE CORMORANT

4) A CRAMPTON RETAINING WALL
THE RIP RAP LEFT IN PLACE FOR
WHAT REASON?

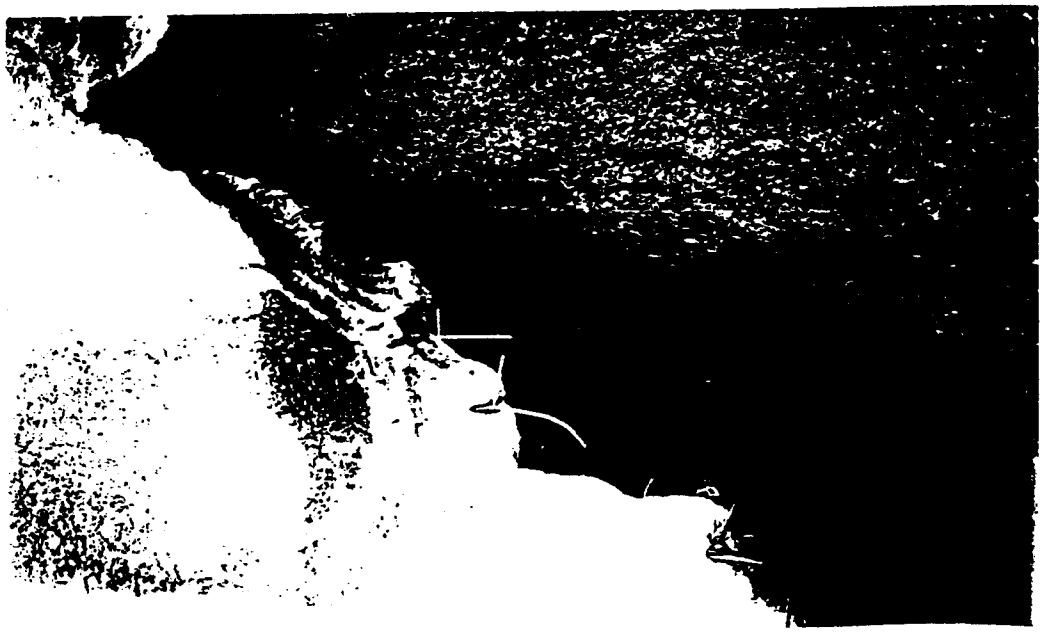
#1



#2

SOLANA BEACHES BLUFFS HAVE BEEN A GUINEA PIG FOR NUMEROUS EXPERIMENTS. PLEASE DO NOT O.K. ONE MORE. A SEA WALL THAT ERODES AT THE SAME RATE AS THE BLUFFS; HAVE THEM PROVE IT!

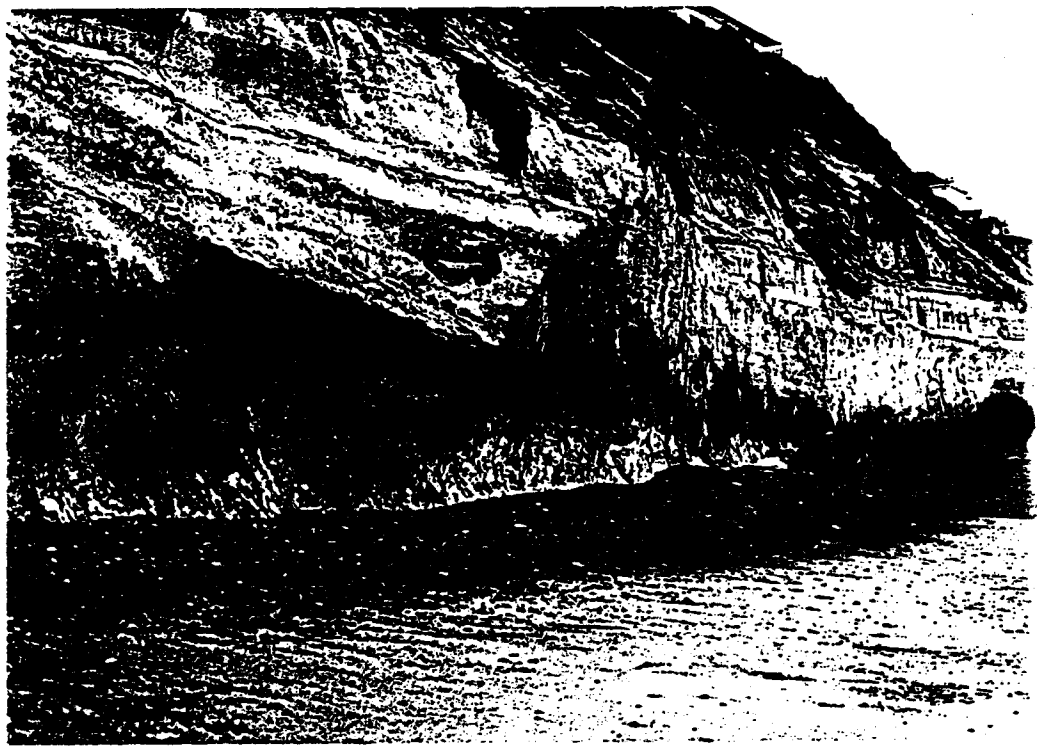
THESE ARE ALL NORTH OF FLETCHER COVE



SEA CAVE PLUG NORTH OF TIDE PARK

SEA CAVE PLUG REBAR EXPOSED - NORTH OF FLETCHER COVE.

KIP RAP LEFT IN P
AND GUNITED OVER.
COLOR IS NOT A MATCH.



South of Tide Park

A brown gunite sprayed on bluff face mid way between Tide Park and Fletcher Cove

Sea Cave Plug North of Tide Park Ugly, Ugly!

CHERYL KUHN

Diana Lilly
California Coastal Commission
San Diego, California

December 2, 1998

Dear Ms. Lilly,

I understand you are the person to talk to about a proposed seawall north of Fletcher Cove in Solana Beach. I am sending this letter to voice my objection to the whole idea of sea walls on our beautiful cliffs!!!

Our coast line was so beautiful with its undulating, ochre, sandstone cliffs, and now ugly concrete walls are marring their beauty! These walls are only a temporary measure – the ocean always wins. The property developers and owners above should have known sandstone is unstable and not expect it to last forever. Now they want to ruin our beaches to protect something that should never have been built! Soon they will have entire length of the California coast walled up with concrete.

Please vote against this project and others like it in the future!

Sincerely,

Cheryl Kuhn

339 S. Granados, Solana Beach, California 92075 619.755.5729

6-98-134

CDP 6-98-134

December 7, 1998

City Of Solana Beach
City Council
635 S. Hwy. 101
Solana Beach, CA

Honorable Member Joe Kellejian,

As per my statement and ensuing discussion during the Public Hearing for item C1 (permit for shoreline stabilization devices) on Decmeber 1, at City Council Chambers, I am happy to send you copies of the the following documents found in the public record. Enclosed find a copy of one of the numerous geological studies (February 1995) submitted on behalf of bluff top property owners for previous Coastal Development Permits(CDPs) for improvements or re-building of their properties. Note the assurance language by the consultant which states that protective devices will not be needed within the remaining 40 year lifetime of the dwelling. Obviously this study was incorrect and demonstrates the need for public review of such studies.

Furthermore, please find the enclosed copies of CDPs which contain language of risk assumption by bluff top property owners (Special Conditions, #3 CDP 6-84-168, CDP 6-89-366, CDP 6-84-62, CDP 6-95-23, CDP 6-94-33), future bluff protective works and future development (#3, 4 CDP 6-89-288), and deed restrictions on any lower bluff stabilization devices (Special Conditions C. 2., 2.a, b. CDP 6-95-23). Homeowners should be held accountable for the above permit conditions that allowed improvements or rebuilding at the 25' setback rather than the 40' setback.

In regards to your question of an emergency condition at Mr. Coulton's property - As much as I sympathize with his plight, I would say he has an emergency situation, BUT it was not caused by an emergency occurance as defined in CEQA. Bluff erosion and failure is a natural, episodic, geological process. His situation, and that of all the bluff top property owners, is caused by their decisions to build at such a proximity to an eroding shoreline.

My question to you and your fellow council members is this: is it just to risk the loss of a public resource (the beach) to protect the decisions made by a handful of property owners? And if the City Council allows the armoring of Solana Beach's coast to continue, who is liable for the stabilization devices that will line the beach?

By by-passing the EIR (through either declaring an emergency condition or Mitigated Negative Declaration), consultant's studies are not subject to public review and scrutiny which may avoid the submission of inaccurate, biased studies such as the one produced by Rugg & Associates. We are now in a position to find out post fact if the Mitigated Negative Declaration finding by Council Staff is correct ot not. Unfortunately, this may be determined after the beach is lost.

I also take issue with accuracy of some of the statements made by the homeowner's consultant, Walt Crampton, during the hearing for the shoreline stabilization projects in Solana Beach. After changing a previously stated position that bluff erosion does not contribute to beach sand, Mr. Crampton proposed using an erosion factor of 0.2'/year for sand mitigation estimates. This figure varies from the 1'/year estimate used in the SANDAG Shoreline Erosion Assesment and Atlas of the San Diego Region, which was edited by his consulting partner, Dr. Ron Flick.

Personally, I hope that the 6 hours I spent at the city council meeting to speak on the issue of beach preservation/shoreline stabilization was not for a foregone conclusion. If council continues to heed the advice from consultants to construct "a small shoreline stabilizer" and approve these permits, like the others before it, the entire question of beach re-nourishment will be moot. There will be no beach.

Sincerely,

Clay Clifton
222 N.Helix Ave
Solana Beach, CA 92075
Surfrider Foundation
San Diego County Chapter

CC: Solana Beach City Council Members and Mayor,
California Coastal Commission

November 30, 1998
Honorable Council Members, Mayor and Citizens,

My name is Clay Clifton and I live in Solana Beach. I am a member of the Environmental Task Force of the San Diego County Chapter of the Surfrider Foundation. I have a Master's Degree in Marine Affairs & Policy.

The Surfrider Foundation is an environmental organization dedicated to preserving and maintaining ocean water quality beaches and waves through CARE (Conservation, Activism, Research and Education). See endnote.

In the last month the City of Solana Beach has had a rush for permits for sea cave plugs and other erosion control devices that purpose to alter our shoreline and stabilize the bluffs to protect the property at the bluff top. The City as well as its residents also shares a responsibility to protect the property at the bottom of the bluff, namely the beach. In this country and this state, the beach is held in a public trust for the use and enjoyment by all residents. In order to protect this public trust we must insure that short-term goals such as erosion control do not have long term negative impacts, such as beach loss. I will address three aspects of this issue tonight:

- Due process, and the right for public comment and review on projects that purpose to affect a public resource
- An alternative solution to shoreline stabilization devices
- Responsibility and adherence to the conditions of previously granted Coastal Development Permits

Firstly, the audience in the issue of shoreline stabilization for the sake of protecting bluff top properties is not limited to those bluff top property owners. As the permit proposes to affect the beach, which is held in a public trust, due process must be applied as outlined in the California Environmental Quality Act and the California Coastal Act. The public review and scrutiny integral to due process, including Environmental Impact Reports, are essential requirements for accuracy and objectivism in the decision making process. They cannot be bypassed by stating that bluff erosion is not an episodic, natural geological process, but an emergency. Poor planning by a few individuals does not constitute an emergency for all.

Secondly, as an alternative solution to shoreline stabilization devices, we support sand replenishment as a means to slow bluff erosion. This entails physically depositing sand on the beaches in order to maintain the public's lateral access, and to provide protection against storms and high surf, which contribute to bluff erosion. A good deal of this responsibility should also fall on the bluff top owners applying for protection.

At a previous hearing for the Coulton seawall, consultants Walter Crampton and Ron Flick indicated the homeowners would donate to the sand mitigation fund with a onetime donation including cash and sand. They have also stated that sand from

the bluff is inconsequential in contributing to the sand on the beaches. Assuming that the scope of projects in Solana Beach includes a width (W) of 3000ft of shoreline or 1000 yards at a height (H) of 84ft or 28 yards, at an annual retreat rate (RR) of 2 ft per year (0.67 yards/yr.) based on "Shoreline Erosion Assessment and Atlas of the San Diego Region," by California Dept. of Boating and Waterways and SANDAG, then the average annual loss of sand from bluff erosion is given by:

$V = W*H*RR = 1000*28*0.67 = 18,760$ cubic yards of beach building material per year

where V is annual volume of sand contributed per year. This may be slightly incorrect in that it does not discriminate between sand and other materials.

The annualized cost of this material at $15 per cubic yard is $281,400 per year. Since all the construction in this coastal zone is in an eroding shoreline, consistency with the Coastal Act provides for mitigation of this lost volume of sand (see "Procedural Guidance Document: Review of Permit Applications for Shoreline Protection Devices").

Until a long-term strategy of sand re-nourishment for area beaches can be agreed upon, some consideration for sand volume loss and replenishment on an annual basis must be applied to the project.

Some have questioned the difference between a seawall and an eroding bluff. An episodic failure causes the collapse of the bluff under large wave and tidal events. The bluff recedes, leaving a beach. In contrast, a seawall forms a fixed back beach. As recession occurs, all tidal events will eventually be in contact with the wall and scour sand away from the bottom of the wall, leaving no beach at any tide.

Thirdly, with respect to responsibility, we submit that some of the applicants have produced geological studies over the years to support their applications to improve or rebuild the residences on the property. Some of these studies offered between 1984 and 1995 indicated that it would be between 40 and 70 years before protection of the residence would be necessary. Further, in their Coastal Development Permits, several of the applicants had options to build at a 40 foot setback, but chose to build closer to the bluff edge at a 25 foot setback. We submit that the applicants are responsible for these studies and Permits as well as the current study. The City needs to appreciate institutional memory, and its residents need an enforceable means to assure responsibility for biased information and incorrect results.

In summary, we request that this permit and others like it are subject to all applicable laws and policies; that an alternative solution be considered to a measure that may sacrifice our beaches; and that the citizens of Solana Beach have an enforceable means to assure responsibility for previous permit agreements. We want to avoid a legacy that appears to

include 1/2 mile of seawalls and bluff stabilization 35 to 80 ft high. It must, however, consist of a means to assure preservation of our access, beaches and surf.

Respectfully,

Clay Clifton
Environmental Task Force
San Diego County Chapter of the Surfrider Foundation

Cc: California Coastal Commission

Endnote:
Surfrider Foundation (SF) has a membership of 2000 in San Diego County and 35,000 internationally. SF has an Environmental Issues Team consisting of experts and professionals in Ocean Engineering, Physical Oceanography and many other scientific disciplines to advise our membership on technically challenging environmental issues. They receive no pay for their services and do so for their love of the ocean and its waves. SF members are also homeowners, property owners, taxpayers, voters, and business people. We like to refer to ourselves as the "Keepers of the Coast."

JGG & ASSOCIATES
GEOSCIENCES

PROJECT NO. 2101
02/23/95

Layna Bennett
265 Pacific Avenue
Solana Beach, California

SUBJECT: ADDENDUM TO GEOLOGIC RECONNAISSANCE - BLUFF RECESSION STUDY OF 265 PACIFIC AVENUE, SOLANA BEACH, CALIFORNIA.

Dear Mrs. Bennett,

This addendum addresses several questions of geologic concern communicated in a letter from the California Coastal Commission (CCC) dated 02/16/95. During our original study dated 10/21/94, it was our understanding that the second story addition was to be constructed flush with the rear of the existing structure. Since that time, the details of the design have been updated, and the final second story footprint has changed (see attached Plates No. 1 & 2 entitled, "Site Sketch/Geologic Map" and "Cross-Section A"). In general, the new footprint consists of extending the north half of the addition 3.5' west of the rear wall of the existing dwelling and holding the south half 6' east of the rear wall. In light of this new footprint, we have reevaluated the geologic factors impacting the site, and determined that no significant change of the conclusions within our original report are required. This is because the extension of northern half of the second story westward, is still behind the noted maximum anticipated 75 year bluff recession line.

The CCC has also requested a response to two additional concerns. These include documentation of "the presence or absence of any existing shoreline protective devices on the bluff, and specifically address the anticipated need for shoreline protective devices within the lifetime of the existing residence, and the proposed addition". During our original inspection of 10/13/94, no shoreline protective devices were observed either directly below the property or on the adjacent properties.

Concerning whether protective devices will be required within the lifetime of existing dwelling and proposed addition, it is our opinion that these devices will not be required. This is based on anticipated normal recession rates noted in our previous report.

It should be pointed out, that our previous conclusions were based on a 75 year period. Discussion with the architect, indicate that the existing dwelling is

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approximately 35 years old (previously noted as 40 years in our original report) and that the proposed addition work will not add any significant life expectancy to the overall expanded structure. This means that the remaining lifetime is 40 years. Based on this time frame, the maximum slope recession eastward, under normal conditions, would be 22 inches over a 40 year period. Even considering a catastrophic failure from cave collapse or deep seated circular failure, the bluff edge would not be anticipated to migrate into the footprint of the proposed structure within the next 40 years.

As noted in our previous report, significant bluff recession can occur in a relatively short period of time due to unpredictable events such as severe storms or abnormal tidal conditions. The conclusions in this letter and our previous report are based on normal, relatively predictable recession rates, which are the commonly accepted design considerations.

If you have any questions, please do not hesitate to contact us. This opportunity to be of service is sincerely appreciated.

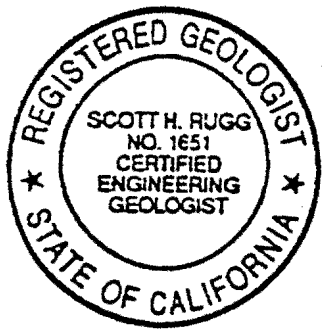
Respectfully submitted,

RUGG & ASSOCIATES GEOSCIENCES

Scott H. Rugg

Scott H. Rugg, CEG 1651
Certified Engineering Geologist

SHR:tb



that the applicant understands that the site may be subject to extraordinary hazard from bluff retreat and 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. Future Bluff Protective Works. In the event that erosion threatens the existing deck, the proposed thickened wall forms for the family room and kitchen of the existing residence, or other accessory structuress in the future, the Coastal Commission will consider removal of these structures as preferred and practical alternatives to proposals for bluff and shoreline protective works.

4. 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. 6-89-288; and that any future additions or improvements to the exterior walls or foundation of the existing residence, or accessory structures seaward of 25 feet from the bluff edge; or other development as defined in Public Resources Code Section 30106 will require an amendment to permit No. 6-89-288 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.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Project Description. Proposed is a 1,630 sq.ft. addition to an existing one-story, 1,424 sq.ft. single family residence on a 4,190 sq.ft. ocean blufftop lot. The proposed improvements will consist of expanding the entry and living room to the first floor on the east side of the residence at the street frontage and a new second story addition. The northern limit of the residence is set back 12 feet from the bluff edge and the southern limit of the residence is set back 26 feet from the bluff edge. The second story addition is set back 25 feet from the bluff edge.

Interior modifications include a new chimney on the first level which would be located closer than 25 feet from the bluff edge. Also, replacement of existing metal windows with wood windows (or doors) is proposed for the family room along the westernmost portion of the residence located 12 feet from the bluff edge and a new 12-inch high thickened wall form is proposed. Additionally, a new 30-inch high thickened wall form is also proposed for the kitchen. The applicant's architect has indicated that these improvements are purely for aesthetic purposes and architectural design and will not result in any modifications to the exterior wall or foundation in this area. The majority of these improvements are regarded as repair and maintenance

has submitted preliminary foundation plans which illustrate new footings including underpinning the existing footing and pouring new footing along the existing western wall of the southern half of the residence. In addition, preliminary building plans indicate replacement of existing metal windows of the family room with wooden windows (or doors). These improvements are regarded as repair and maintenance activities to an existing structure that does not require a coastal development permit. Other proposed improvements that do require a permit include installation of a new 12-inch high thickened wall form along the westernmost portion of the residence. Additionally, another thickened wall form (30-inches high) is proposed for the kitchen along the western wall of the residence. This proposed work is seaward of the 25-foot setback area. The applicant's architect has indicated that this proposed work is purely for aesthetic purposes and will not result in any modifications to the exterior wall or foundation.

The purpose of establishing a minimum 25 foot blufftop setback area is to provide a buffer between development and the natural bluff erosion process. By definition, the geologic setback area is an area that can erode away over the lifetime of the structure. Therefore, to make improvements which increase the economic life of the structure within the setback and not expect endangerment to occur is illogical. Likewise, to allow new development to occur within the geologic setback area is not prudent.

Section 30253 also states that new development must not in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. One issue raised by the project that is not addressed in the County or City's regulations is that of prolonging the economic life of existing structures located within the blufftop setback zone through rehabilitation such as that proposed. Any type of remodeling or modificaton will prolong the economic life of the structure, although not to the degree of new construction or additions.

As noted above, this project includes interior modifications to portions of the residence located within the 25-foot setback area which include installation of a new fireplace on the first floor. However, any exterior improvements or modification to the foundation seaward of the 25-foot setback line would require a geology report including recommendations for specific foundation design. No such improvements are proposed or approved at this time and would not be supported by the submitted geology report. Additionally, frequently during the remodeling process, structural faults are found in the existing structure and demolition or partial demolition is required. Special Condition #1 notifies the applicant if any changes to the plans result in exterior modifications within 25 feet of the bluff edge an amendment to this permit will be required.

Therefore, Special Condition #1 is designed to assure that the project is constructed consistent with the recommendations of the geology report and requires final building, grading and drainage plans which incorporate all the recommendations contained in the submitted geology reports to assure stability consistent with Section 30253 of the Act. In addition, this condition requires submittal of final plans approved by the City which confirm that the

The subject proposal involves the construction of a residence on a bluff-top site between the first coastal road and the sea. The site is, however, located very near (less than one-quarter mile) to existing beach accessways. Therefore, the Commission finds that the subject proposal is consistent with Section 30212(a) of the Act, given there is adequate access nearby and further finds the project consistent with all the public access and recreation policies of the Act.

3. Local Coastal Planning. Section 30604(a) requires that, prior to certification of the local coastal program, the Commission shall issue a coastal development permit only after it 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 particular case such a finding can be made. As stated in the above finding, the development, as conditioned, would be in conformity with the provisions of Chapter 3 of the Coastal Act.

As stated above, the County usually requires the observance of a 40-foot setback. However, the County allows exceptions for single-family residences given the adherence to specific conditions which would minimize the impacts of the residential development. The conditions the County would require are essentially the same as those in the special conditions proposed above. In all other respects, the proposed development is consistent with the policies of the Certified LCP Land Use Plan. Therefore, the Commission finds that the subject proposal will not prejudice the ability of the County of San Diego to prepare a certifiable LCP for the San Dieguito communities.

SPECIAL CONDITIONS:

1. Geologic Stability. Prior to the transmittal of the coastal development permit, the applicant shall submit for the review and approval in writing of the Executive Director, the final building, foundation, grading and drainage plans approved by the County which incorporate all recommendations contained in the geology report. The submitted report and plans must be approved in writing by the Executive Director in consultation with the State Geologist and/or the Division of Mines and Geology prior to the transmittal of the permit.

2. Landscape Plan. Prior to transmittal of the coastal development permit, the applicant shall submit detailed landscape and irrigation plans for the bluffward side of the residence which have been approved by the County. Within the 27-foot setback from the bluff edge, said plans shall indicate minimal, if any, landscaping, no permanent or pressurized irrigation system, spas or pools. Said plans shall be approved by the Executive Director, prior to transmittal of the permit.

3. Applicant's Assumption of Risk. Prior to the transmittal of a coastal development permit, the applicant shall submit to the Executive Director a deed restriction for recording free of prior liens, except for tax liens, that binds the applicant and any successors in interest. The form and content of the deed restriction shall be subject to the review and approval of the Executive Director. The deed restriction shall provide (a) that the applicant understands that the site

Permit Application No.: 6-84-168

ay be subject to extraordinary hazard from waves during storms and from erosion, and the applicant assumes the liability from those hazards; (b) the applicant unconditionally waives any claim of liability on the part of the Commission or any other regulatory agency for any damage from such hazards, as a consequence of approval of the project; and (c) the applicants understand that construction in the face of these known hazards may make them ineligible for public disaster funds or loans for repair, replacement, or rehabilitation of the property in the event of storms.

CKNOWLEDGEMENT OF PERMIT RECEIPT/ACCEPTANCE OF CONTENTS:

I/We acknowledge that I/we have received a copy of this permit and have accepted its contents including all conditions.

Applicant's Signature

May 4, 1984
Date of Signing