CALIFORNIA COASTAL COMMISSION
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Staff Report:	December 18, 2003
Hearing Date:	January 14-16, 2004

REGULAR CALENDAR
STAFF REPORT AND PRELIMINARY RECOMMENDATION

Application No.: 6-03-48

Applicants: Richard and Patricia Sorich
Erin and Nancy Gault

Agent: Bob Trettin

Description: Follow-up to emergency permits for construction of an approximately 94 ft.-long, 17 to 20 ft.-high and 27 inch-thick reinforced tieback concrete seawall to be colored and textured to match the adjacent natural bluff. The project also includes a request to remove all unpermitted rock rip-rap seaward of the seawall.

Site: On the public beach below 808 and 816 Neptune Avenue, Encinitas, San Diego County. APN Nos. 256-011-11 and 256-011-12

STAFF NOTES:

Summary of Staff's Preliminary Recommendation: This application is the follow-up permit to emergency permits 6-00-146-G/Brem and 6-01-62-G/Sorich issued by the Commission in September 2000 and May 2001. The construction of the two connected seawalls was substantially completed during 2001 with coloring and texturing of the seawall below 816 Neptune (Sorich) still to be completed. The staff is recommending approval of the proposed follow-up application with special conditions requiring payment of an in-lieu fee to mitigate impacts of the seawall on the beach sand supply, monitoring of the seawall's condition and performance, recordation of deed restrictions to provide notice to future buyers (because of the various conditions imposing ongoing obligations, such as those addressing future erosion and assumption of risks), certification that the seawall will be storm resistant, future maintenance, and copies of any additional governmental permits that might be required. With these conditions, impacts of the seawall on coastal resources will be minimized or mitigated, consistent with Chapter 3 Policies of the Coastal Act.

February 4, 2004 represents the 180th day since filing of the subject application. Therefore, the Commission must act on the subject request at the January 2004 meeting unless the applicants request a 90 day extension of the time period.

Substantive File Documents: Certified City of Encinitas Local Coastal Program (LCP); 02-52 MUP/CDP/ dated 2/20/2002; "Preliminary Geotechnical Evaluation/Brem Residence, 808 Neputune Avenue" by Soil Engineering Construction dated 8/7/00; "Preliminary Geotechnical Evaluation Sorich Residence, 816 Neptune Avenue" by Soil Engineering Construction dated 10/18/00; "Landslide Hazards in the Encinitas Quadrangle, San Diego County, California", Open File Report, dated 1986 by the California Division of Mines and Geology; San Diego Association of Governments (July 1993) Shoreline Preservation Strategy (including technical report appendices, The Planners Handbook, Beachfill Guidelines, and Seacliffs, Setbacks and Seawalls Report); "Batiquitos Lagoon Dredging Survey", dated September 1994, State Land Commission; Reconnaissance Report for the Encinitas Shoreline by the U.S. Army Corps of Engineers, dated March 1996; Final Draft Technical Report for the City of Encinitas Comprehensive Coastal Bluff and Shoreline Plan by Moffatt and Nichol Engineers, dated February 1996; CDP Nos. 6-85-396/Swift, 6-89-136-G/Adams, 6-89-297-G/Englekirk, 6-92-82/Victor, 6-92-212/Wood, 6-93-36-G/Clayton, 6-93-131/Richards, et al, 6-93-136/Favero, 6-93-181/Steinberg, 6-95-66/Hann, 6-98-39/ Denver/Canter, 6-98-131/Gozzo, Sawtelle and Fischer, 6-99-9/Ash, Bourgualt, Mahoney, 6-99-35-G/MacCormick, 6-99-75-G/Funke, Kimball, 6-99-131-G/Funke, Kimball, 6-99-41/Bradley, 6-00-009/Ash, Bourgault, Mahoney, 6-00-74/Grey Diamond Marketing, Funke, Kimball; 6-00-146-G/Brem, Warke; 6-00-171-G/Brown, Sonnie, 6-01-005-G/Okun, 6-01-11-G/Okun, Sorich; 6-01-040-G/Okun, 6-01-041-G/Sorich, 6-01-42-G/Brown and 6-01-62-G/Sorich.

I. PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

MOTION: ***I move that the Commission approve Coastal Development Permit No. 6-03-48 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

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

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as

conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions.

See attached page.

III. Special Conditions.

The permit is subject to the following conditions:

1. 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 total fee of $24,140.53 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing 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 12/18/03 prepared for Coastal Development Permit #6-03-48. All interest earned shall be payable to the account for the purposes stated below.

The developed mitigation plan covers impacts only through the identified 22-year design life of the seawall. No later than 21 years after the issuance of this permit, the permittee or her successor in interest shall apply for and obtain an amendment to this permit that either requires the removal of the seawall within its initial design life or requires mitigation for the effects of the seawall on shoreline sand supply for the expected life of the seawall beyond the initial 22 year design life. If within the initial design life of the seawall the permittee or her successor in interest obtains a coastal development permit or an amendment to this permit to enlarge or reconstruct the seawall or perform repair work that extends the expected life of the seawall, the permittee shall provide mitigation for the effects of the seawall on shoreline sand supply for the expected life of the seawall beyond the initial 22 year design life.

The purpose of the account shall be to establish a beach sand replenishment fund to aid the San Diego Association of Governments ("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 memorandum of

agreement ("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. In the event the MOA is terminated, the Commission can appoint an alternative entity to administer the fund.

2. Completion of Color/Texture of Seawall. **WITHIN SIXTY (60) DAYS OF ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT** or within such additional time as the Executive Director may grant for good cause, the applicants shall complete the proposed coloring and texturing of the subject seawall to closely match the color and texture of the surrounding natural bluffs.

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 civil engineer, 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. The evaluation shall also include an assessment of whether any rock rip-rap has become exposed from beneath the sand seaward of the seawall below 816 Neptune.

b. Annual measurements of the distance between the residences 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 #7 of this permit, and identified through permanent markers, benchmarks, survey position, written description, or other precise indicators 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 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 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, report preparation and submittal, and any necessary development pursuant to paragraph e in accordance with the approved plan. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. Assumption of Risk. By acceptance of this permit, the applicants, on behalf of themselves and their successors and assigns, acknowledge and agree (i) that the site may be subject to hazards from erosion and wave action; (ii) to assume the risks to the applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

5. Future Maintenance/Removal of Debris. The permittees 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 Title 14 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 natural bluffs, the permittee shall contact the Commission office to determine whether a coastal development permit is necessary, and shall subsequently apply for any necessary coastal development permit for the required maintenance.** In addition, the permittees shall also be responsible for the removal of debris resulting from failure of, or damage to, the shoreline protective device in the future as well as the removal of any construction

debris (including non-soil backfill material) that reaches the beach from any structure landward of the seawall.

6. Other Permits. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit copies of all other required local, state or federal discretionary permits for the development herein approved. Any mitigation measures or other changes to the project required through said permits shall be reported to the Executive Director. No changes to the project shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

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

WITHIN SIXTY (60) DAYS OF COMPLETION OF THE COLOR AND TEXTURING OF THE SUBJECT SEAWALL, the permittee shall submit as-built plans of the approved seawall and associated structures that have been approved by the City of Encinitas' Engineering Department and certified by a registered civil engineer, acceptable to the Executive Director, verifying the seawall and associated structures have been constructed in conformance with the approved plans for the project submitted with this application by Soil Engineering Construction for 808 Neptune Avenue with a revision date of 7-16-03 and by Soil Engineering Construction for 816 Neptune Avenue with a revision date of 7-16-03

The as-built plans shall include 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.

8. Condition Compliance. **WITHIN SIXTY (60) DAYS OF COMMISSION ACTION OF THIS COASTAL DEVELOPMENT PERMIT APPLICATION**, or within such additional time as the Executive Director may grant for good cause, the applicants shall satisfy all requirements specified in the conditions of the subject permit that the applicants are required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

9. State Lands Commission Approval. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT 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 applicants with the State Lands Commission for the project to proceed without prejudice to the determination.

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

11. Removal of Unpermitted Rip-rap. **WITHIN SIXTY (60) DAYS OF ISSUANCE OF THE SUBJECT COASTAL DEVELOPMENT PERMIT,** or within such additional time as the Executive Director may grant for good cause, the applicants shall, as proposed, remove all visible rock rip-rap seaward of the seawall below 816 Neptune Avenue. If any additional rock rip-rap that currently is covered by sand seaward of the seawall below 816 Neptune Avenue should become visible in the future, the applicants are required to remove it within sixty (60) days of exposure, or within such additional time as the Executive Director may grant for good cause.

12. Future Response to Erosion. If in the future the permittee seeks a coastal development permit to construct additional shoreline protective devices at this site, the permittee will be required to include in the permit application information concerning alternatives to the proposed shoreline protection that will eliminate impacts to scenic visual resources, recreation and shoreline processes. Alternatives shall include but not be limited to: relocation of all or portions of the principle structure that are threatened, structural underpinning, and other remedial measures capable of protecting the principal structure and providing reasonable use of the property, without constructing bluff or shoreline stabilization devices. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission or the applicable certified local government to evaluate the feasibility of each alternative, and whether each alternative is capable of protecting existing structures that are in danger from erosion. No additional shoreline protective devices shall be constructed on the beach in front of the proposed seawall unless the alternatives required above are demonstrated to be infeasible. No shoreline protective devices shall be constructed in order to protect ancillary improvements (patios, decks, fences, landscaping, etc.) located between the principal residential structure and the ocean.

13. Deed Restriction. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicants shall submit to the Executive Director for review and approval documentation demonstrating that the applicants have executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit,

the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Project Description/History. The proposed project involves the construction of an approximately 94 ft.-long, 17 to 20 ft.-high and 27 in.-wide tiedback concrete seawall at the toe of the bluff fronting two single family residential structures. The seawall will be tied-back to the bluff by two rows of approximately 55 to 80 foot-long anchors inserted into the face of the bluff. The face of the proposed seawall has been designed for coloring, texturing and sculpturing to closely match the colors and contours of the surrounding bluffs. Seawalls similar in height and design to the proposed development are located adjacent to both the north and south sides of the subject seawall location. The subject application represents a follow-up regular coastal development for seawall structures constructed in 2000 and 2001, and removal of rip-rap placed on the beach following issuance of emergency permits. Because the emergency permits for the seawalls required follow-up regular permits be applied for within 60 days of issuance, the subject developments involve violations of the conditions of the emergency permits. In addition, the applicants propose that following completion of the seawall below 816 Neptune, all rock rip-rap seaward of the seawall below 816 Neptune Avenue which was placed on the beach pursuant to an emergency permit in 2001 (ref. Emerg. Permit #6-01-11-G/Okun, Sorich) will be removed. The emergency permit for placement of the rip-rap required its removal by no later than May 11, 2001 which to date has not occurred. Therefore, this portion of the subject request also involves a violation of the emergency permit for the placement of the rip-rap.

The subject development is located at the base of an approximately 90 foot-high coastal bluff fronting two blufftop lots containing two single-family residences constructed prior to the Coastal Act. In September of 2000, following a bluff sloughage which threatened the structure at the top of the bluff at 808 Neptune Avenue, the Executive Director approved an emergency permit for the construction of an approximately 44 ft.-long, 17 ft.-high and 27 inch-wide concrete seawall and an approximately 40 ft.-long below-grade, concrete reinforced, upper bluff retention system located seaward of the residence at 808 Neptune Avenue (Emerg. CDP #6-00-146-G/Brem, Warke). In January 2001, the Executive Director issued an emergency permit to the property owners of 816 and 828 Neptune Avenue for the placement of 60 to 80 lineal feet of 5 to 7 ft. high rip-rap stone to

be placed on the public beach to protect a seawall construction platform below 816 and 828 Neptune Avenue (Emerg. permit #6-01-11-G/Okun, Sorich). Although the rip-rap emergency permit required its removal within 120 days, the rock rip-rap to date has not been removed. In March of 2001, following a bluff sloughage that threatened the residence at 816 Neptune Avenue, the Executive Director approved an emergency permit for construction of an approximately 50 ft. long below-grade, concrete reinforced upper bluff retention system at the top of the bluff (Emerg. CDP #6-01-41-G/Sorich). Because of the emergency conditions, the Executive Director also approved in May of 2001 the construction of an approximately 50 ft.-long, 17 to 20 ft.-high, 27 inch-wide concrete seawall at the base of the bluff (Emerg. CDP #6-01-62-G/Sorich).

Both the seawalls and upper bluff retention systems authorized by the emergency permits were subsequently constructed although the visual treatment portion of the seawall below 816 Neptune (Sorich) has not been completed. The subject coastal development permit represents the regular coastal development permit for the seawalls constructed under the emergency permits (Emerg. CDP 6-00-146-G/Brem, Warke and 6-01-62-G/Sorich). The City of Encinitas has subsequently issued regular follow-up coastal development permits for the upper bluff retention systems that lie in their permit jurisdiction along the top of the bluff at 808 and 816 Neptune Avenue.

The subject seawall development lies seaward of the mean high tide line (MHTL). In September 1994, State Lands Commission surveyed the MHTL in Encinitas and concluded that the MHTL follows the toe of the bluff in the City of Encinitas ("Batiquitos Lagoon Dredging Survey", 1994). The City of Encinitas has a certified LCP and has been issuing coastal development permits since May of 1995. However, because the proposed development lies seaward of the MHTL, it is located within the Commission's area of original jurisdiction, where permit jurisdiction is not delegated to the local government. As such, the standard of review is Chapter 3 policies of the Coastal Act, with the certified LCP used as guidance.

2. 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 in danger from erosion and when designed to eliminate or mitigate adverse impacts on shoreline sand supply. 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 development is located at the base of a coastal bluff in the City of Encinitas that currently contains similarly designed seawalls at both the north and south sides of the subject site. Continual bluff retreat and the formation and collapse of seacaves have been documented in northern San Diego County, including the Cities of Solana Beach and Encinitas. Bluffs in this area are subject to a variety of erosive forces and conditions (e.g., wave action, reduction in beach sand, landslides). As a result of these erosive forces, the bluffs and blufftop lots in the Encinitas area are considered a hazard area. Furthermore, in 1986 the Division of Mines and Geology mapped the entire Encinitas shoreline as an area susceptible to landslides, i.e, mapped as either "Generally Susceptible" or "Most Susceptible Areas" for landslide susceptibility (ref. Open File Report, "Landslide Hazards in the Encinitas Quadrangle, San Diego County, California", dated 1986). The properties immediately north of the subject site have recently experienced significant landslides that have threatened residences at the top of the bluff and resulted in numerous Executive Director approved emergency permits for seawall and upper bluff protection devices (ref. Emergency Permit Nos. 6-00-171-G/Brown, Sonnie, 6-01-005-G/Okun, 6-01-040-G/Okun, 6-01-041/Sorich, 6-01-42-G/Brown, Sonnie and 6-01-62-G/Sorich). In addition, documentation has been presented in past Commission actions concerning the unstable nature of the bluffs in these communities and nearby communities (ref. CDP Nos. 6-93-181/Steinberg, 6-92-212/Wood, 6-92-

82/Victor, 6-89-297-G/Englekirk, 6-89-136-G/Adams, and 6-85-396/Swift, 6-00-009/Ash, Bourgault, Mahoney).

Pursuant to Section 30253 of the Coastal Act, in approving new development on blufftop lots, structures are required to be setback an appropriate distance (based on a site specific geotechnical report) from the edge of the bluff that will allow for the natural process of erosion without triggering the need for a seawall. This "geologic setback area" is so designated to accommodate the natural erosion of the bluff. In other words, on blufftop lots, residences are set back from the bluff edge to allow the natural process of erosion to occur on the site without causing the residence to be threatened. Thus, at some future point when evidence of some erosion of the setback area is identified (even undercutting and subsequent block failures), this does not necessarily confirm the need for bluff or shore protection to protect the residence. However, in the subject case, the residences are setback from the bluff edge varying from 28 to 30 feet and the applicants' engineer has demonstrated that even at these setbacks the residences at the top of the bluff are threatened.

The geologic reports prepared for the subject properties at the time of the emergency permits in 2000 and 2001, described the bluff as experiencing both lower Ardath formation failures and an upper bluff fracturing extending across both 808 and 816 Neptune Avenue ("Preliminary Geotechnical Evaluation/Brem Residence, 808 Neputune Avenue" by Soil Engineering Construction dated 8/7/00 and "Preliminary Geotechnical Evaluation Sorich Residence, 816 Neptune Avenue" by Soil Engineering Construction dated 10/18/00). The Geotechnical reports identify the bluffs fronting the subject residences as consisting of a bedrock formation of Torrey Sandstone up to elevation 0 Mean Sea Level (MSL), an approximately 20 foot layer of Ardath Formation extending from 0 MSL to 20 MSL and Terrace Deposits (unconsolidated sands) that extend from elevation 20 MSL to the top of the bluff at elevation 90 MSL. However, the report also identified that the Ardath Formation contains an approximately 1 ft. clay seam layer at elevation 8 MSL which extends under both properties. The applicants' geologist indicates that the presence of the clay seam on properties to the immediate north has led to massive landslides in the last few years. When this clay seam layer becomes saturated by ground water it reaches a point where it acts like a layer of ice and allows the material above it to slide or rotate out. The landslides to the north of the subject site have resulted in numerous emergency permits being granted by the Executive Director (ref. Emergency Permit Nos. 6-00-171-G/Brown, Sonnie, et al.). In addition, in one case, the western portion of the residence at 828 Neptune Avenue, immediately adjacent to the subject 816 Neptune Avenue site, collapsed over the edge of the bluff.

The design of the approximately 17 to 20 ft.-high seawall at the base of the bluff incorporates the use of 50 to 80 ft.-long tiebacks installed down into the bedrock formation below the clay seam layer. This design will prevent the landslide potential that could occur along the clay seam at elevation 8 MSL. While ongoing upper bluff sloughage is likely to occur as the bluff seeks its natural angle of repose above the seawall (approximately 33 degrees), the approximately 90 ft.-long, 35 ft.-deep below-grade retention system which lies at the top of the bluff will function as a wall to prevent

the natural repose of the bluff from undercutting beneath the two residential structures. The upper wall has been designed to intersect with the natural repose of the bluff at approximately elevation 65 ft. MSL.

The proposed seawall will front two lots containing residential structures. The applicants' representative has identified that the residence at 808 Neptune Avenue is setback approximately 28 feet from the edge of the existing bluff. The residence at 816 is identified as at approximately 30 feet from the edge of the bluff. The applicants' geotechnical reports also included a slope stability analysis that indicated the factor of safety for each of the residences without the proposed seawall was 1.18 for the property at 808 Neptune Avenue and 1.07 for the property at 816 Neptune Avenue. In each case the failure plane identified by the slope stability analysis intersected under the residences at the top of the bluff. The report concluded that the bluff collapses placed the residential structures in danger and recommended construction of a seawall and upper bluff stabilization devices to protect them. The Commission's staff geologist and coastal engineer have reviewed the applicants' geotechnical and engineering information regarding the need and design of the seawall and concur with its conclusions. In addition, the applicants' geotechnical reports have also been subject to third party review by a geologist employed by the City of Encinitas. The City's geologist has also concurred with the reports' findings.

Alternatives

Relative to alternatives, the applicants' engineer has indicated that removal of the threatened portions of the residences is not a feasible alternative since the landslide potential of the bluff would continue to be a threat to the subject property as well as to neighboring properties. The applicants haves also examined the alternative of placing rip-rap at the base of the bluff, however, rip-rap would occupy far more substantial area of beach than would the proposed seawall and would do nothing to address the landslide potential. The applicants' engineer has also indicated that the height of the seawall has been designed to be the minimum necessary based on the elevation of the clay seam (8 ft. MSL), the height of the Ardath formation (20 ft. MSL) and natural repose of the bluff, and to prevent overtopping of the wall by wave action. In addition, since the proposed wall will connect to similarly designed seawalls on either end, the potential of scouring by the seawall's end-effects should not be a concern. In addition, the wall will be designed to be colored and sculptured to closely match the surrounding bluffs.

Since the applicants have documented the need to protect the existing residences, the Commission finds that a shoreline-altering device must be approved pursuant to Section 30235 of the Coastal Act. Based on the analysis presented by the applicants, the Commission finds that there are no less environmentally feasible alternatives than the proposed 17 to 20 ft. high seawall.

Sand Supply/In Lieu Mitigation Fee

Although construction of a seawall is required to protect the existing principle structures on the site, 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 structures. The natural shoreline processes referenced in Section 30235, such as the formation and retention of sandy beaches, are altered by construction of a seawall. 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 wearing away of the lower bluff material, undercutting and/or 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 some or all of these natural processes.

Some of the adverse effects of a shoreline protective structure on the beach, such as scour, end effects and, modifications to the beach profile, are temporary or difficult to distinguish from all the other actions which modify the shoreline. Seawalls also have non-quantitative effects to shoreline character and visual quality. However, some of the effects which a structure may have on natural shoreline processes can be quantified. Three adverse effects of a shoreline protective device that can be quantified at this time 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 impacts on beach sand supply would result from construction of the proposed seawall. The proposed seawall, which is approximately 94 ft. long by 2.25 feet seaward of the toe of the bluff occupying approximately 211.5 sq. ft. of public beach area. Because the proposed seawall is located seaward of the MHTL it is land subject to the public trust, and therefore will displace beach that would otherwise be available for public use. In addition, since the seawall will fix the back beach location, approximately 1,388.21 cubic yards of sand that would otherwise erode from the bluff face will not become available over the estimated 22-year lifespan of the seawall.

Loss of beach material and loss of beach area are two separate concerns. A beach is the result of both sandy material and a physical area between the water and the back beach. Thus, beach area is not simply a factor of the quantity of sandy beach material. In Encinitas, the shoreline is a shallow bedrock layer covered by a thin veneer of sand. The bedrock layer provides an area for collection of sandy material. The sand material is important to the overall beach experience, but even without the sand, the bedrock layer provides an area for coastal access between the coastal bluff and the ocean. The loss of beach material that will be a direct result of this project can be balanced or mitigated by obtaining similar quality and quantity of sediment from outside the littoral cell and

adding this sediment to the littoral cell. There are sources of beach quality sediment that can be drawn upon to obtain new sediment for the littoral cell. Unfortunately there is not source of extra beach land that can be used to add new land area to the littoral cell and therefore it is not possible to directly mitigate for the loss of coastal land when shoreline protective devices are required to protect existing development. In this particular case, dedication of an isolated portion of the applicants' blufftop properties would not mitigate for potential impacts to public access and recreation associated with the loss of beach land because the blufftop property is not accessible to the public in the same manner as the beach. Instead, beach nourishment is an indirect method to mitigate the loss of coastal land in that allows us to shift the shore profile seaward and create a new area of dry beach. This will not create new coastal land, but will provide many of the same benefits that will be lost when the beach area is covered by a seawall or "lost" through passive erosion when the back bluff location is fixed.

It is possible to estimate the volume of sand needed to create a given area of dry beach through beach nourishment. The proposed project will result in the total loss of 769.86 sq. ft. of beach, due to the long-term physical encroachment of the seawall (211.5 sq. ft.) combined with the beach area that will no longer be formed because the back of the beach will be fixed (558.36 sq. ft.). This 769.86 sq. ft. of beach can be built or created, through the one-time placement of 692.87 cubic yards of sand seaward of the seawall. This estimate is only a "rough approximation" of the impact of the seawall on beach area because one-time placement of this volume of sand cannot result in creation of beach area over the long term.

The overall impacts from the proposed seawall will be the entrapment of 1,388.21 cu. yds. of sand that would have been added to the littoral cell and the long-term loss of 769.86 sq. ft. of beach area. This 769.86 sq. ft. of beach area cannot be replaced by land, but a comparable area can be build through the addition of 692.87 cu. yds. of sand as beach nourishment. This 692.87 cu. yds. of sand, added to the 1,388.21 cu. yds. of sand that would have been added to the cell, totals 2,081.08 cu. yds. of sand that is needed to balance the quantifiable impacts from the entire project.

Special Condition #1 requires the applicants to deposit an in-lieu fee of $24,140.53 (based on 2,081.08 cubic yards of sand multiplied by the cost of obtaining a cubic yard of sand as proposed by the applicants' engineer) to fund beach sand replenishment, as mitigation for impacts of the proposed shoreline protective device on beach sand supply and shoreline processes. The following is a detailed description of the methodology used by the Commission to develop the estimated amount of sand lost as a result of the proposed seawall and the in-lieu fee, which is based upon that estimated amount. The methodology uses site-specific information provided by the applicants 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 methodology does not include estimates of the bluff material that will continue to be contributed to the beach following construction of the seawall since those changes will be unaffected by the seawall construction. The upper bluff will

continue to retreat due to subaerial processes; the seawall protects the lower bluff and is intended to prevent the landward progression of the bluff that occurs when the lower bluff erodes or collapses. The sediment contribution from the landward retreat of the bluff over 22 years is included in the methodology, since this is the action that the seawall is intended to prevent over its estimated design life. As stated before, the upper bluff may continue to retreat, and the bluff material will be provided to the littoral cell. Since this material will continue to reach to littoral cell it is not included in the material losses that are addressed by the mitigation.

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 #8 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 (cubic yards) 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. 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 Encinitas area, this regional retreat has been estimated to be 0.27 ft./year. The use of any alternative retreat rates must be documented by the applicant

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.)

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

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

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

R_{cu} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in

place, assuming no seawall were installed (ft/yr). This value can be assumed to be the same as R unless the applicant provides site-specific geotechnical information supporting a different value.

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

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

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

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 0.27 ft./year. The use of any alternative retreat rates must be documented by the applicant

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.

The applicants are being required to pay a fee in-lieu of directly depositing the sand on the beach, because the benefit/cost ratio of such an approach would be too low. Many of the adverse effects of the seawall on sand supply will occur gradually. In addition, the adverse effects impact the entire littoral cell but to different degrees in different locations throughout the cell (based upon wave action, submarine canyons, etc.) Therefore, mitigation of the adverse effects on sand supply is most effective if it is part of a larger project that can take advantage of the economies of scale and result in quantities of sand at appropriate locations in the affected littoral cell in which it is located. 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, ensures that the fee is roughly proportional to the impacts to sand supply attributable to the proposed seawall. 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 Encinitas. 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 at 312 through 402 Neptune Avenue, south 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 along Neptune Avenue (ref. CDP Nos. 6-93-36-G/Clayton, 6-93-131/Richards, et al, 6-93-136/Favero, 6-95-66/Hann, 6-98-39/ Denver/Canter, 6-98-131/Gozzo, Sawtelle and Fischer, 6-99-9/Ash, Bourgualt, Mahoney, 6-99-41/Bradley and 6-00-74 Grey Diamond Marketing, Funke, Kimball).

It has been argued that regional approaches to shoreline erosion are environmentally preferable to building separate seawalls to protect individual structures. Coastal Act Section 30235, however, requires the Commission to approve shoreline protection for existing structures in danger from erosion when the shoreline protection is designed to eliminate or mitigate effects on local shoreline sand supply. In this particular case, the Commission finds the applicants' residences are faced with an immediate threat from erosion and requires protection prior to implementation of a comprehensive regional shoreline erosion strategy.

It also has been argued that the impacts of the seawall on shoreline sand supply, public access, and recreation must be reduced to insignificance. Given that the seawall necessarily fixes the inland extent of the beach on an eroding beach, the adverse effects of the seawall on public access and recreation cannot be completely eliminated. By

requiring sand mitigation fees that will fund beach sand replenishment, the Commission is minimizing the adverse effects of the seawall on public access and recreation to the greatest extent feasible.

b) Geologic Hazards

If the proposed wall were damaged in the future (e.g. as a result of wave action, storms, etc.) it could threaten the stability of the site, which could lead to need for more bluff alteration. In addition, damage to the seawall could adversely affect the beach by resulting in debris on the beach and/or creating a hazard to the public using the beach. Therefore, in order to find the proposed seawall consistent with the Coastal Act, the Commission finds that the condition of the seawall in its approved state must be maintained for the estimated life of the seawall. Further, in order to ensure that the permittee and the Commission know when repairs or maintenance are required, the permittee must monitor the condition of the seawall annually. The monitoring will ensure that the permittee and the Commission are aware of any damage to or weathering of the seawall wall and can determine whether repairs or other actions are necessary to maintain the seawall in its approved state. In addition, mitigation for impacts to sand supply are based on the estimated 22-year design life of the seawall and, therefore, the proposed in-lieu fee sand replenishment plan only mitigates for the initial design life of the structure. The seawall, however, might outlast its design life. To address the impacts of the seawall on shoreline sand supply that will occur if the seawall lasts for more than its design life, Special Condition #1 requires that the applicants or successors in interest apply for an amendment to the subject permit within 21 years of issuance in order to either remove the proposed seawall or to provide additional mitigation for the additional years of design life that occurs to the seawall. If the applicants or successors in interest enlarges, reconstructs, or performs repairs that extend the design life of the seawall, the applicants or successors in interest will at that time be required to provide mitigation for the additional impacts to shoreline sand supply.

Accordingly, Special Condition #5 requires the permittee to maintain the seawall in its approved state. In addition, Special Condition #5 advises the applicants that ongoing maintenance and repair activities which may be necessary in the future could require permits. Section 30610(d) exempts repair and maintenance activities from coastal development permit requirements unless such activities enlarge or expand a structure or the method of repair and maintenance presents a risk of substantial adverse environmental impact. The Commission's regulations identify those methods of repair and maintenance of seawalls that are not exempt (see California Code of Regulations Section 13252). Special Condition #3 requires that the applicants monitor the wall on an annual basis and if the monitoring determines that repairs/maintenance is necessary, Special Condition #5 requires the applicants to consult with the Commission to determine whether any proposed repair and maintenance requires a permit.

There may also be other local, state or federal agencies having jurisdiction over this project. Conditions of approval and/or mitigation measures may be required from these agencies. As such, Special Condition #6 has been imposed. This condition requires the

applicants to submit copies of any discretionary permits obtained from other local, state or federal entities before the coastal development permit is issued. Should any project modifications be required as a result of any of these permits, the applicants are further advised that an amendment to this permit may be necessary to incorporate such mitigation measures into the project.

The applicants have submitted "as built" plans for the seawall with a revision date of 7-16-03 by Soil Engineering Construction, Inc. Some elements of the "as-built" plans raise concerns relating to the structural integrity of the seawall, what was actually constructed and/or previously authorized. For instance, the "as built" plans do not verify the location of hydraugers as part of the seawall design to protect the seawall from the build-up of water pressure behind the seawall. Three hydraugers were recommended in the applicants' engineering report. Other elements on the "as built" plans are described as "to be determined in the field". In addition, the "as-built" plans show work within the City's jurisdiction behind the seawall that apparently has not been reviewed or approved by the City, namely backfill consisting of gravel, fabric and soil. To assure consistency with local approvals and structural integrity of the seawall, Special Condition #7 requires the applicants to submit to the Executive Director for review and written approval final as-built seawall plans that have been approved by the City of Encinitas' Engineering Department.

The Commission typically requires that any proposed shore/bluff protection be constructed to withstand serious episodic storms. Special Condition #7 has been attached which requires the applicants to submit certification by a registered civil engineer verifying the proposed seawall, as proposed herein, has been designed to withstand storms comparable to the winter storms of 1982-83.

Special Condition #12 requires that feasible alternative measures must be implemented on the applicants' blufftop properties 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 reduce risk to the principle residential structures and provide reasonable use of the property. The condition will ensure that future property owners will be aware that any future proposals for additional shoreline protection, such as augmented seawall, will require an alternative analysis similar to one required for the subject project. If there are feasible alternatives to shoreline protection that would have less impact on visual quality, sand supply, or public access, the Commission can require implementation of those alternatives. The condition also states that no shore or bluff protection shall be permitted for ancillary improvements located within the blufftop setback area (such as decks, patios, etc.). Through this condition, the property owner is required to acknowledge the risks inherent in the subject property and that there are limits to the structural protective measures that may be permitted on the adjacent public property in order to protect the existing development in its current location.

The applicants are proposing to construct the development in an area subject to wave and storm hazards. Although the applicants' geotechnical report asserts that the proposed development can withstand such hazards and protect existing development from such

hazards, the risk of damage to the structure and the existing development cannot be eliminated entirely. The Commission finds that in order for the proposed development to be consistent with the Coastal Act, the applicants must assume the risks of damage from flooding and wave action. As such, Special Condition #4 requires the applicants to waive any liability on the part of the Commission for approving the proposed development. In addition, these conditions require the applicants to indemnify the Commission in the event that third parties bring an action against the Commission as a result of failure of the proposed development to withstand and protect against the hazards. Special Condition #13 requires the applicants to record a deed restriction imposing the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property. 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 residences on the blufftop are in danger from erosion and bluff failure. Thus, the Commission is required to approve protection for the homes pursuant to Section 30235 of the Act. The applicants have presented information which documents that there are no other less damaging feasible alternatives available to reduce the risk from bluff erosion and provide the necessary protection. Since the proposed seawall will have adverse impacts on beach sand supply, Special Conditions require the applicants to pay an in-lieu mitigation fee to offset this impact. Therefore, as conditioned, the Commission finds that the proposed seawall is consistent with Sections 30235 and 30253 of the Coastal Act.

3. 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:
>
> (1) 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 beach seaward of the proposed seawall is public trust lands because it is seaward of the MHTL. The State Lands Commission (SLC) retains ownership of the public trust lands, however, in this case, the SLC leases the area to the City of Encinitas. The site is located approximately two blocks south of the City of Encinitas' Beacon's Beach public access pathway. The beach at the project site is used by local residents and visitors for a variety of recreational activities. Thus, the proposed seawall is located on sandy beach area that would otherwise be available to the public. The project will have several adverse impacts on public access.

The proposed approximately 94 foot-long seawall will encroach approximately 2.25 feet seaward of the toe of the bluff occupying approximately 211.5 sq. ft. of public beach area. The seawall will be attached to similarly constructed seawalls on both its north and south ends. Although the seaward encroachment of the wall will not extend further than the existing walls on either side, 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 may be impassable. As such, any encroachment of structures, no matter how small, onto the sandy beach in this area, reduces the beach area available for public use. 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. The adverse impacts of the proposed seawall on shoreline processes, sand supply and beach erosion rates, as described previously in Section 2 of this report, alter public access and recreational opportunities. The loss of sandy beach area, and the loss of sand contribution to the beach reduce the beach area available for public access and recreation.

Although the proposed seawall is in essentially the same alignment as the adjacent walls, the seawall will reduce lateral beach access by encroaching onto the beach and will have adverse impacts on the natural shoreline processes. The Commission finds that the probable negative impacts of the seawall must be weighed against the property owner's need to protect the structure behind it. The Commission further recognizes that any type of shoreline protective devices have been shown to have adverse impacts upon the beach. 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. However, in this case, the City and the State Lands Commission have both agreed that the MHTL currently is at the toe of the existing bluff. As such, public access is assured through the public ownership of the beach. However, this stretch of beach has historically been used by the public for access and recreation purposes. Special Condition #10 acknowledges that the issuance of this permit does not waive the public rights that exist on the property. In addition, the seawall may be located on State Lands Property, and as such, Special Condition #9

requires the applicants to obtain any necessary permits or permission from the State Lands Commission to perform the work. In addition, impacts of the seawall on the beach will be mitigated by Special Condition #1, discussed in a previous section of the staff report, which requires the applicants to pay an in-lieu fee for sand replenishment.

As previously mentioned, the subject application request identifies that following completion of the seawall, rock rip-rap that lies on the beach fronting 816 Neptune Avenue will be removed from the beach. The property owners at 816 Neptune (Sorich) and 828 Neptune (Okun) received an emergency permit in January 2001 to construct an approximately 60 to 80 ft.-long, 5 to 7 ft.-high rip-rap structure on the beach fronting 828 Neptune Avenue with a small portion placed below 816 Neptune Avenue (Emerg. Permit #6-01-11-G/Okun, Sorich). The rip-rap was necessary to protect a temporary construction related platform/access mound used in the construction of a seawall below 828 Neptune Avenue. The construction platform/access mound has subsequently been dismantled. The emergency permit for the rip-rap was conditioned to require the rip-rap be removed within 120 days of placement (by May 11, 2001). To date the rip-rap has not been removed. The continued placement of this rip-rap on the public beach that would otherwise be available for public use has a significant adverse impact on public access. Commission staff has recently visited the site and confirmed that rip-rap continues to be located seaward of the seawall below 816 Neptune Avenue. In addition, part of the rip-rap appears to be covered by sand. The subject application includes a statement that the applicants intend to remove the rip-rap following completion of the subject seawall. However, since the seawall has been substantially completed and the construction platform for which the rip-rap was supposed to protect no longer exists, the Commission's staff engineer can find no need for the rock rip-rap to remain on the public beach. Therefore, Special Condition #11 requires the applicants to remove all visible rip-rap seaward of the proposed seawall within 60 days of issuance of the subject permit. In addition, if any additional rip-rap that currently is covered by sand becomes visible in the future, the applicants are required to remove it within 60 days of exposure.

As debris may become dislodged overtime from the seawall or from structures at the top of the bluff as a result of failure or damage of the structures which would have the potential to affect public access if the material were to land on the beach, Special Condition #5 has also been proposed. This condition notifies the applicants that they are responsible for maintenance and repair of the seawall and that should any work be necessary, they must contact the Commission office to determine permit requirements. The condition also requires the applicants to remove any construction debris that originates from the subject properties (including the gravel backfill or fabric materials placed behind the seawall) that may eventually reach the beach which could result in impacts to public access as well as damage to the marine environment.

With special conditions assuring maximum public access, addressing sand supply and authorization from the State Lands Commission, impacts to public access will be minimized to the maximum extent feasible. Thus, as conditioned, the Commission finds the project consistent with the public access and recreation policies 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 Encinitas coastline currently have a series of seawalls at the toe of the bluff that are approximately 15 to 27 feet in height and extend from the end of the subject properties for approximately 200 feet to the north and 269 feet to the south. The approximately 70 ft. high area above the seawalls remain in their natural state in terms of their visual appearance although a series of below-grade retention systems have been installed on the top of the bluff seaward of the residential structures. As such, the potential for adverse impacts on visual resources associated with the proposed development could be significant.

The proposed 17 to 20 ft.-high seawall to be constructed along the base of the bluff raises concerns relative to adverse impacts on visual resources. In order to address this concern and reduce potential adverse visual impacts associated with the proposed development, the proposed seawall has been designed with the minimum feasible height of approximately 17 to 20 ft. above MSL. The seawall will be placed as close the bluff as possible and follow the natural contour of the bluff. In addition, a surface treatment is proposed to be incorporated that allows for coloring and texturing of the seawall to reduce the contrast between the wall and the adjacent natural bluff. According to the applicants' representative, the seawall below 808 Neptune (Gault) has already been sculpted and colored to match the surrounding bluff. However, the seawall is currently completely covered by bluff talis material and the applicants have not provided photographic evidence of its completion. Therefore, Commission staff is unable to verify that the Gault seawall structure has been completed or that its design appropriately matches the surrounding natural bluffs. Overtime or following winter storms, it is likely the seawall will become exposed. If additional visual treatment of the seawall is necessary at that time, the applicants will be required to perform the work consistent with the following special conditions. Special Condition #2 requires the applicants to complete the color and texturing of the seawall within 60 days of issuance of the subject permit. Special Condition #3 requires the applicants to monitor the condition and performance of the seawall over its lifetime including the coloring and texturing of the wall. In addition, Special Condition #5 requires that the seawall be maintained in its approved state over its lifetime and requires the applicants to apply for a coastal development for substantial maintenance or repairs as needed. 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. 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. Unpermitted Development. The proposed development will occur on a site where conditions of approval for three previously issued emergency permits have not been satisfied. This application was submitted in follow-up to those three emergency permits to authorize the temporary emergency work as permanent development. In September of 2000, the applicant for 808 Neptune Avenue received an emergency permit from the Executive Director granting temporary authorization to construct a seawall at the base of the bluff which was conditioned to require the applicants to submit a complete application to the Coastal Commission for a regular coastal development permit within 60 days (no later than November of 2000) in order to permanently authorize the termporary emergency work as permanent development (Emer. Permit 6-00-146-G (Brem/Warke). However, the regular application was not submitted until April 2003. In addition, in May of 2001 the applicant at 816 Neptune Avenue received an emergency permit from the Executive Director (Emer. Permit 6-01-62-G/Sorich) granting temporary authorization to construct a seawall at the base of the bluff below their residence which included a condition to submit a complete application for a regular permit within 60 days (by no later than July 2001) and stipulated that only construction of the seawall was authorized. However, the regular application was not submitted until April 2003. In addition, the applicant's representative has identified that in addition to the seawall, backfill was placed behind the Sorich seawall at 816 Neptune Avenue and that they observed the work being performed (ref. letter from John Niven, Soil Engineering Construction, Inc. dated August 6, 2003). There is no record of Commission approval for the backfill as an emergency measure. In addition, although the backfill is located landward of the mean high Tide Line (MHTL) in the City of Encinitas' permit jurisdiction, there is no record of a City permit for its placement. This application does not address unpermitted backfill that was placed immediately landward of the proposed seawall because such backfill is located within the City's coastal development permit issuance jurisdiction. Resolution of the unpermitted backfill should occur through separate enforcement or permit action by the City of Encinitas. The Commission's enforcement division will also evaluate further actions to address this matter.

In addition, a third emergency permit has been previously issued for emergency work on site. The property owners at 816 Neptune (Sorich) and 828 Neptune (Okun) received an emergency permit in January 2001 to construct an approximately 60 to 80 ft.-long, 5 to 7 ft.-high rip-rap structure on the beach fronting 828 Neptune Avenue with a small portion placed below 816 Neptune Avenue (Emerg. Permit #6-01-11-G/Okun, Sorich). The rip-rap was necessary to protect a temporary construction related platform/access mound used in the construction of a seawall below 828 Neptune Avenue. The construction platform/access mound has subsequently been dismantled. The emergency permit for the rip-rap was conditioned to require the rip-rap be removed within 120 days of placement (by May 11, 2001). To date the rip-rap has not been removed. The subject application includes the proposal to remove the segment of rip-rap located on on the subject site at 816 Neptune Avenue following completion of the subject seawall. However, since the seawall has been substantially completed and the construction platform for which the rip-rap was suppose to protect no longer exists, the Commission's staff engineer can find no need for the rock rip-rap to remain on the public beach. Therefore, in order to ensure that the applicant's proposal to remove the unpermitted rip rap on the sandy beach at 816

Neptune Avenue is implemented and to ensure that the unpermitted development component of this application is resolved in a timely manner, Special Condition #11 requires the applicant to remove all visible rip-rap seaward of the proposed seawall within 60 days of the issuance of the coastal development permit. In addition, if any additional rip-rap that currently is covered by sand becomes visible in the future, the applicant is required to remove it within 60 days of exposure. Further, to ensure that the components of unpermitted development addressed by this application are resolved in a timely manner, Special Condition #8 requires that the applicant satisfy all conditions of this permit, which are prerequisite to the issuance of this permit within 60 days of Commission action, or within such additional time as the Executive Director may grant for good cause.

Consideration of this application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Review of this permit does not constitute a waiver of any legal action with regard to the alleged violation nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal permit. Nothing in the Commission's action authorizes or retroactively validates any such backfill that may be shown on plans submitted in conjunction with this application.

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

The subject site is located on the beach within the City of Encinitas. In November of 1994, the Commission approved, with suggested modifications, the City of Encinitas Local Coastal Program (LCP). Subsequently, on May 15, 1995, coastal development permit authority was transferred to the City. Although the site is within the City of Encinitas, it is within the Commission's area of original jurisdiction. As such, the standard of review is Chapter 3 policies of the Coastal Act, with the City's LCP used as guidance.

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.

Based on specific policy and ordinance language requirements placed in the LCP by the Commission, the City of Encinitas is in the process of developing a comprehensive program addressing the shoreline erosion problem in the City. The intent of the plan is to look at the shoreline issues facing the City and to establish goals, policies, standards and strategies to comprehensively address the identified issues. To date, the City has conducted several public workshops and meetings on the comprehensive plan to identify

issues and present draft plans for comment. However, at this time it is uncertain when the plan will come before the Commission as an LCP amendment or when it will be scheduled for local review by the Encinitas City Council.

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

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

7. 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, public access and visual resource policies of the Coastal Act. Mitigation measures 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, as conditioned, is the least environmentally-damaging feasible alternative and is 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. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

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

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

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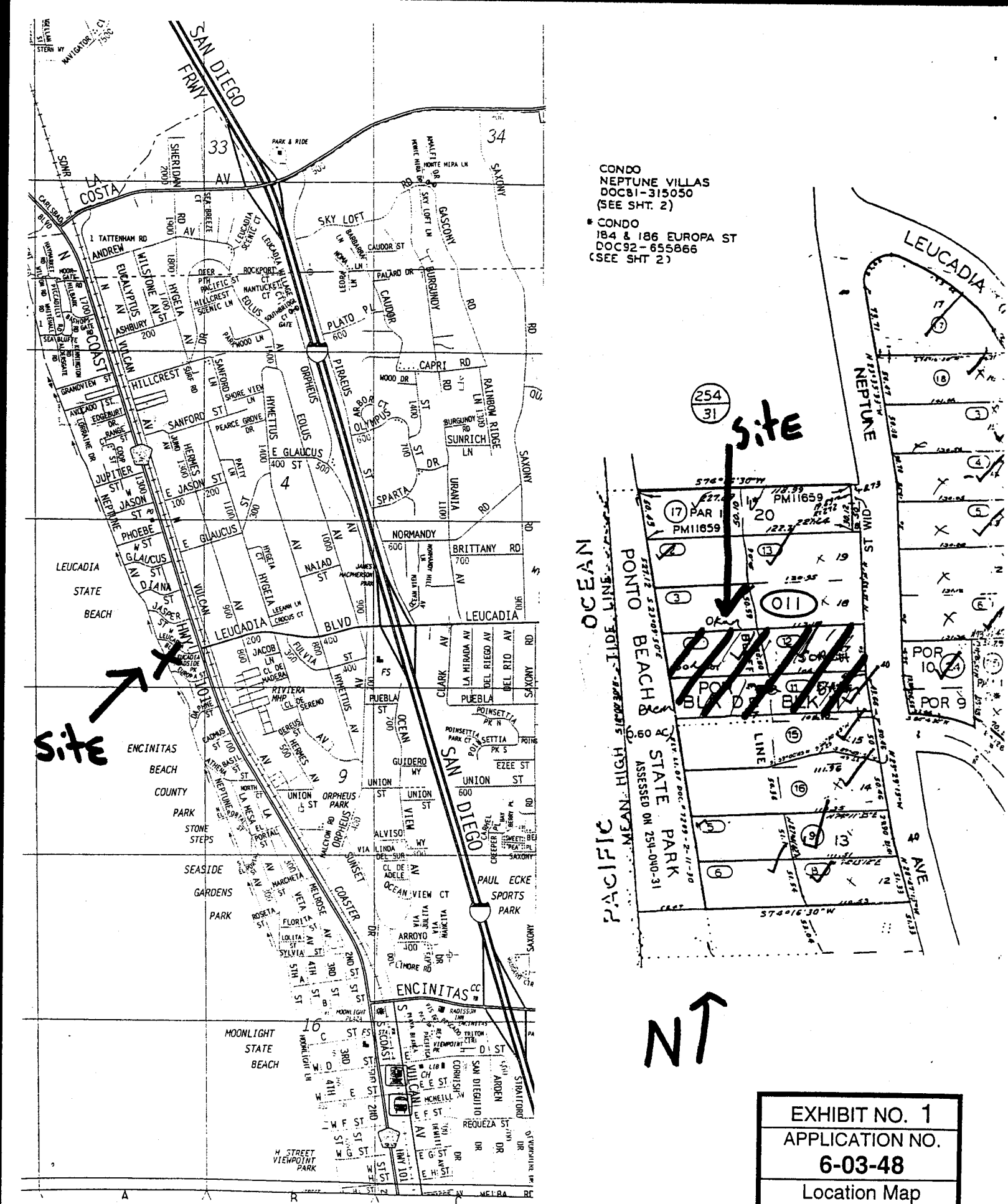


EXHIBIT NO. 1
APPLICATION NO. 6-03-48
Location Map
California Coastal Commission

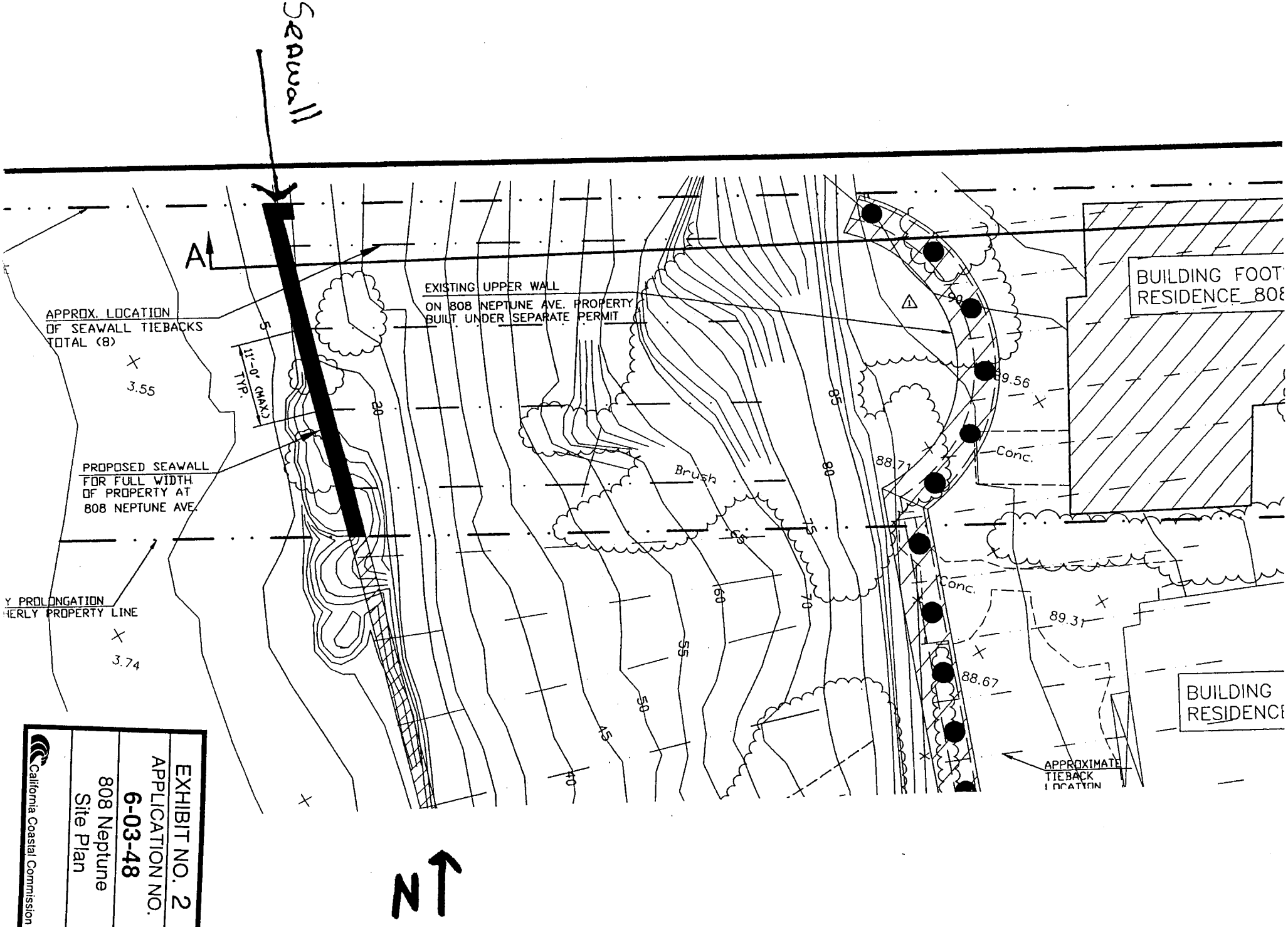
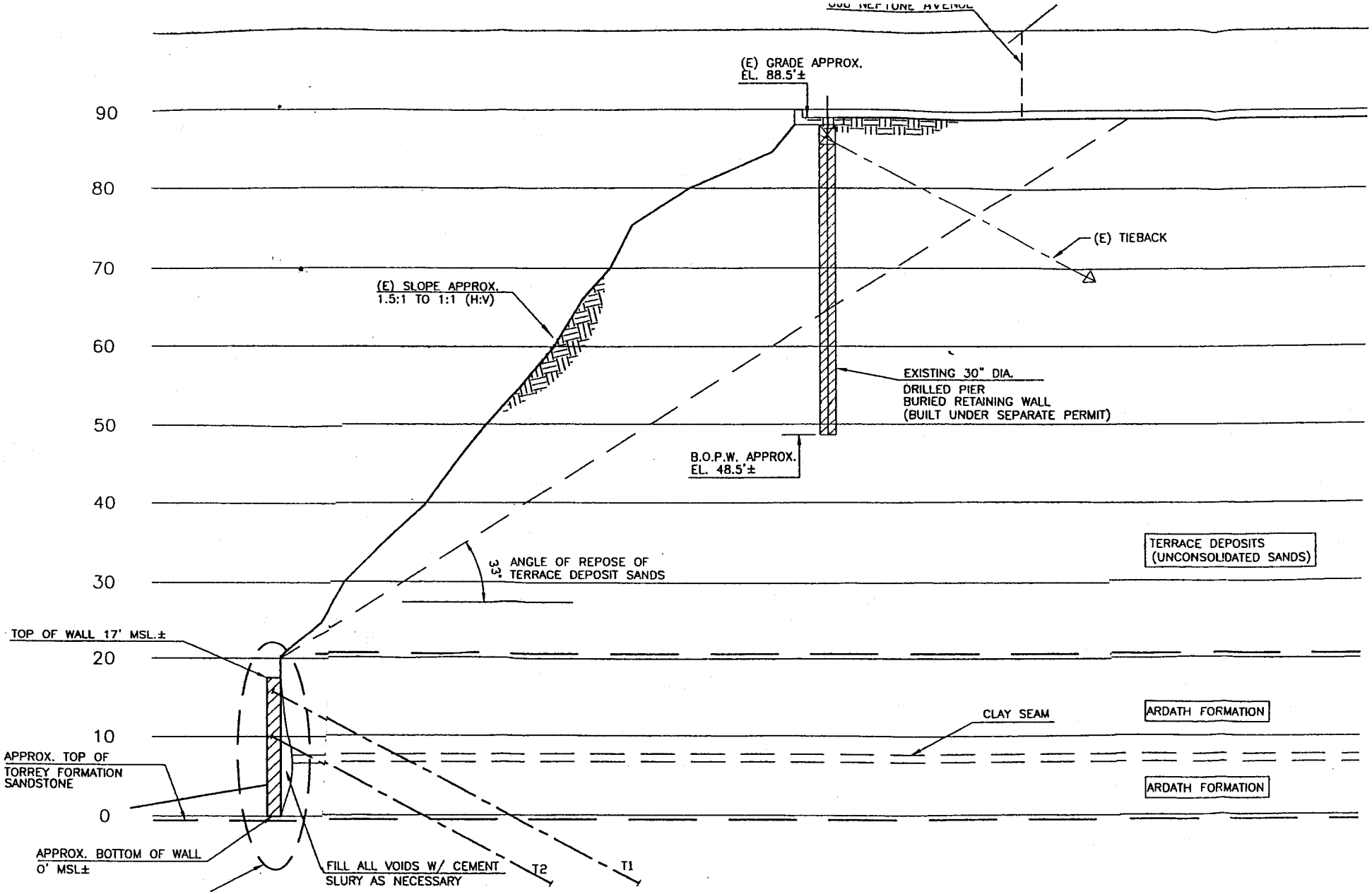


EXHIBIT NO. 2
APPLICATION NO.
6-03-48
808 Neptune
Site Plan

California Coastal Commission



FOR SECTIONS AND
DETAILS OF SEAWALL
SEE SHEET 4

PROFILE SECTION A-A

SCALE: 1"=10'

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EXHIBIT NO. 3
APPLICATION NO.
6-03-48
808 Neptune
Cross-Sections

California Coastal Commissi

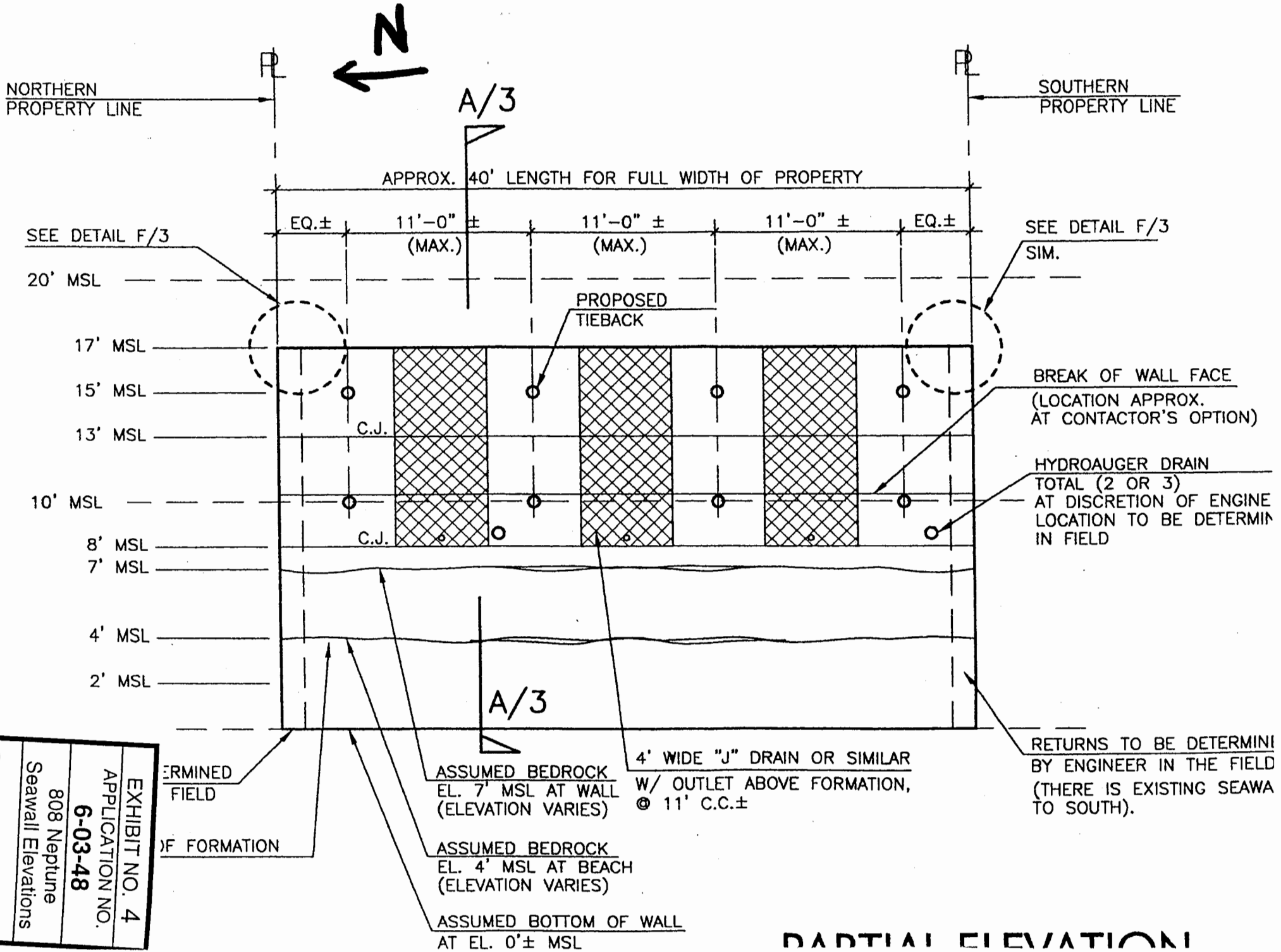


EXHIBIT NO. 4
APPLICATION NO.
6-03-48
808 Neptune
Seawall Elevations

PARTIAL ELEVATION

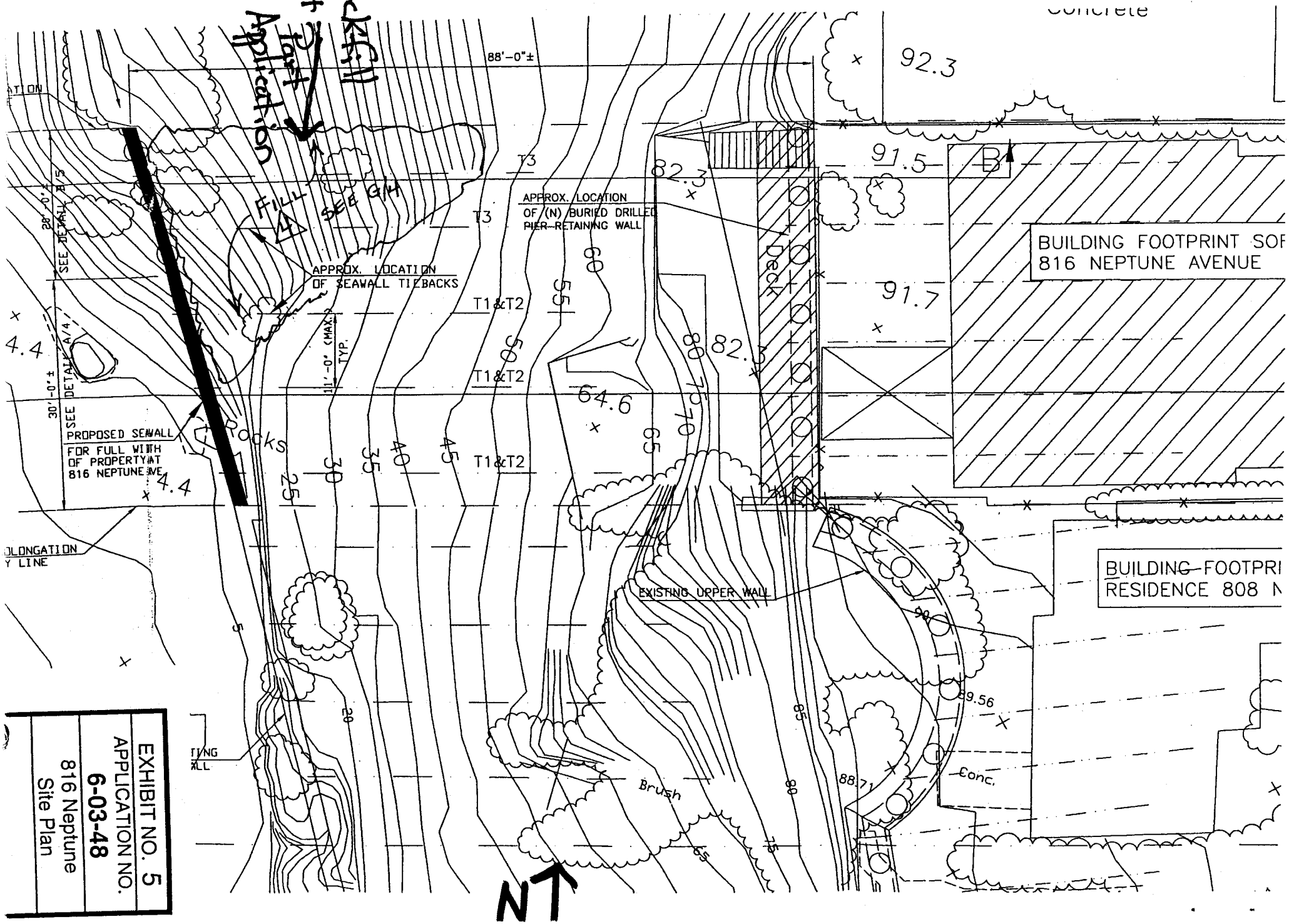


EXHIBIT NO. 5
APPLICATION NO.
6-03-48
816 Neptune
Site Plan

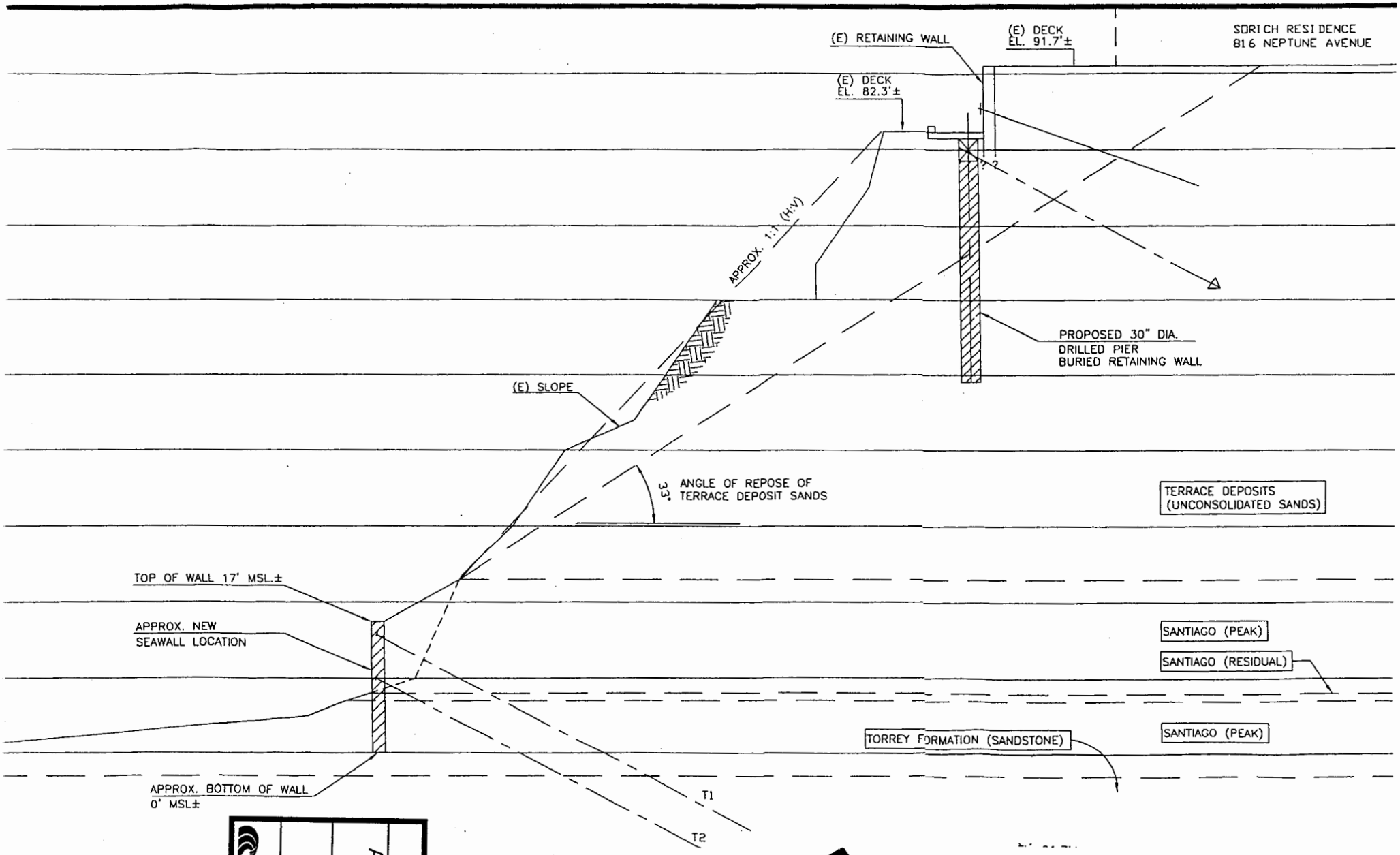
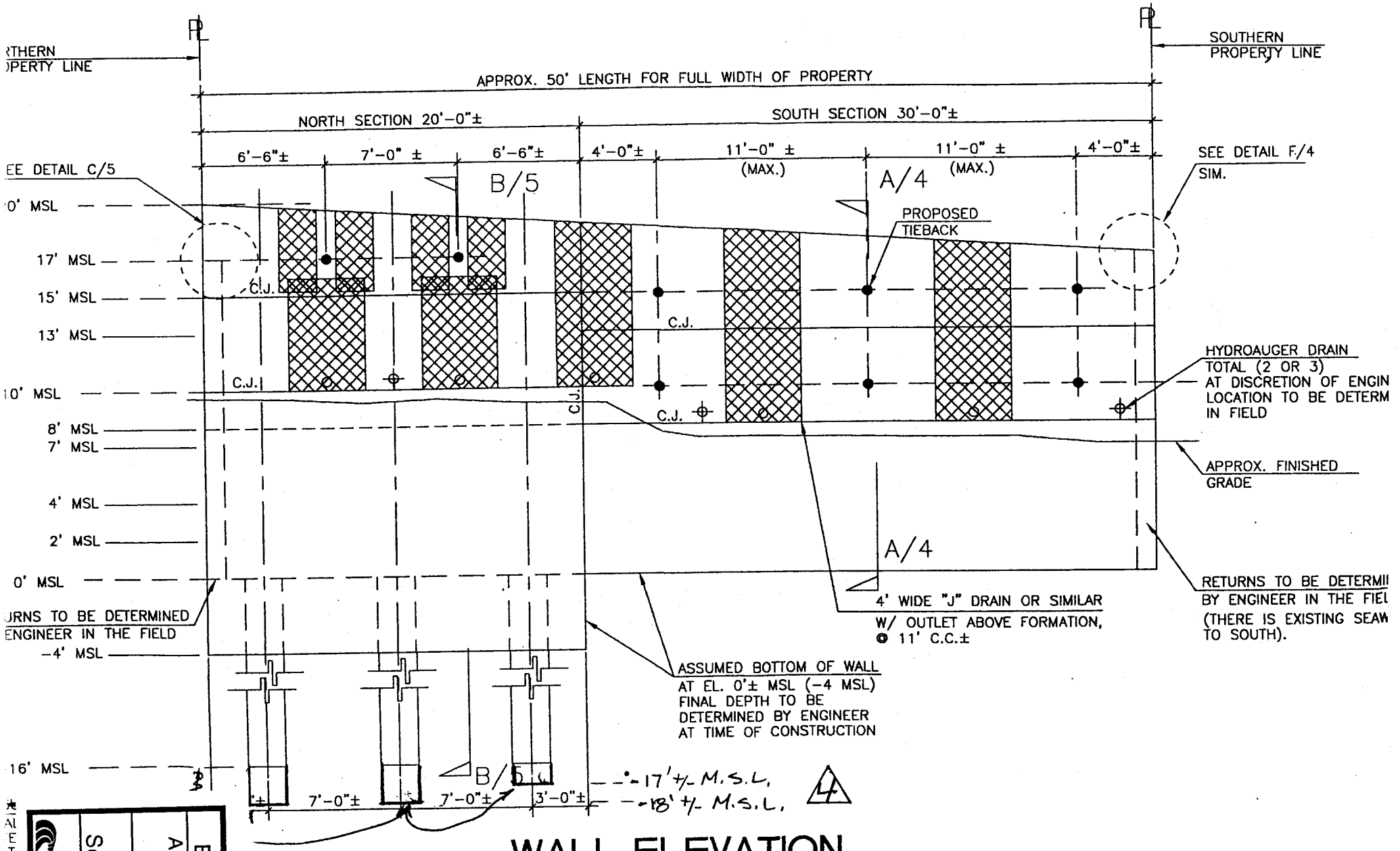


EXHIBIT NO. 6
APPLICATION NO.
6-03-48
816 Neptune
Cross-Sections

California Coastal Commissi



WALL ELEVATION

SCALE: 3/16"= 1'-0"

EXHIBIT NO. 7
APPLICATION NO.
6-03-48
816 Neptune
Seawall Elevations
California Coastal Commission

Beach Sand Replenishment
In-lieu Fee Worksheet
6-03-48

V_e = Volume of sand to rebuild the area of beach lost due to encroachment by the seawall; based on the seawall design and beach and nearshore profiles (cubic yards)

$V_e = A_e \times v$

A_e = The encroachment area which is equal to the width of the properties which are being protected (W) times the seaward e encroachment of the protection (E)

$A_e = W \times E$

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

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

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 ft. of beach. 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 ft. (40 feet x 1 foot x 1 foot/27 cubic feet per cubic yard). If the vertical distance for a reversible sand movement is less than 40 feet, the value of v would be less than 1.5 cubic yards per square foot. The value of v would be less that 1.5 cubic yards per square foot. The value of v will vary from one coastal region to an another. A value of 0.9 cubic yards per square foot has been suggested for the Oceanside Littoral Cell (Oceanside Littoral Cell Preliminary Sediment Budget Report, December 1997, prepared as part of the Coast of California Storm and Tide Wave Study)

V_w = Volume of sand to rebuild the area of beach lost due to long-term erosion (V_w) of the beach and near-shore, resulting from stabilization of the bluff face and prevention of landward migration of the beach profile; based on

the long-term regional bluff retreat rate, and beach and nearshore profiles (cubic yards)

$V_w = A_w \times v$

A_w = The area of beach lost due to long-term erosion is equal to the long-term average annual erosion rate (R) times the number of years that the back beach or bluff will be fixed (L) times the width of the property that will be protected (W) (ft./yr.)

$$A_w = R \times L \times W$$

R = The retreat rate which must be based on historic erosion, erosion trends, aerial photographs, land surveys, or other acceptable techniques and documented by the applicant. The retreat rate should be the same as the predicted retreat rate used to estimate the need for shoreline armoring

L = The length of time the back beach or bluff will be fixed or the design life of the armoring without maintenance (yr.). For repair and maintenance projects, the design life should be an estimate of the additional length of time the proposed maintenance will allow the seawall to remain without further repair or replacement

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

$V_b = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$

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 of the bluff 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

$\mathbf{V_t}$ = 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 above

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

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

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

In-lieu Fee Worksheet
for
808 Neptune Avenue (Gault)
CDP #6-03-48

W = 44 ft.
E = 2.25
v = .9
R = .27
L = 22 yr.
S = .74
hs = 17
hu = 72.6
Rcu = 0
Rcs = .27
C = $11.60

$V_e = A_e \times v$

$V_e =$ 99 x .9 = 89.1 cubic yards

$V_w = A_w \times v$

$V_w =$ 261.36 x .9 = 235.22 cubic yards

$V_b = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$

$V_b =$ (.74 x 44 x 22) x [(.27 x 17) + (72.6/2 x (.27 + (.27 – 0)))]/27 = 641.77 cubic yards

$V_t = V_b + V_w + V_e$

$V_t =$ 641.77 + 235.22 + 89.1 = 966.09 cubic yards

$M = V_t \times C$

M = 966.09 x $11.60 = $11,206.64

Beach Sand Replenishment
In-lieu Fee Worksheet
816 Neptune Avenue (Sorich)
CDP #6-03-48

W = 50 ft.
E = 2.25
v = .9
R = .27
L = 22 yr.
S = .74
hs = 18.5
hu = 73.2
Rcu = 0
Rcs = .27
C = $11.60

$V_e = A_e \times v$

$V_e =$ 112.5 x .9 = 101.25 cubic yards

$V_w = A_w \times v$

$V_w =$ 297 x .9 = 267.30 cubic yards

$V_b = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$

$V_b =$ (.74 x 50 x 22) x [(.27 x 18.5) + (73.2/2 x (.27 + (.27 – 0)))]/27 = 746.44 cubic yards

$V_t = V_b + V_w + V_e$

$V_t =$ 746.44 + 267.30 + 101.25 = 1,114.99 cubic yards

$M = V_t \times C$

M = 1,114.99 x $11.60 = $12,933.88

TOTAL FOR BOTH PROPERTIES = 12,933.88 + 11,206.64 = $24,140.52

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