

CALIFORNIA COASTAL COMMISSION

CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
(831) 427-4863

Th3a**RECORD PACKET COPY**

Filed: 9/14/2003
49th day: 11/2/2003
180th day:* 3/12/2004
*PSA deadline extended to: 6/10/2004
Staff: D.Carl
Staff report prepared: 3/24/2004
Hearing date: 4/15/2004
Hearing item number: Th3a

COASTAL DEVELOPMENT PERMIT APPLICATION – CONSENT ITEM

Application number3-00-164, Chambers Deck and Revetment

Applicant..... Wendell Chambers

Project location.....Bluffs and beach seaward of 101 26th Avenue, immediately adjacent to the 26th Avenue Beach public coastal access overlook and stairway, in the unincorporated Live Oak region of Santa Cruz County (APN 028-234-08).

Project descriptionReconstruct deck and revetment seaward of residence.

File documents.....Santa Cruz County Certified Local Coastal Program (LCP); California Coastal Commission Coastal Development Permit (CDP) files XS-82-36 and 3-02-096 (26th Avenue stairway), and 3-81-078 (Ferraro revetment); Santa Cruz County CDP file 97-0799 (Chambers revetment) and 01-0056 (26th Avenue overlook); California Coastal Commission Monterey Bay ReCAP.

Staff recommendation ...Approval with Conditions

Summary: The Applicant proposes to reconstruct an existing cantilevered deck and revetment located seaward of his residence that is itself located immediately adjacent to the 26th Avenue overlook and stairway site in the Live Oak beach area of Santa Cruz County. The existing deck pre-dates the coastal permitting requirements of Proposition 20 (the Coastal Initiative) and the Coastal Act, as does the residence at this location. A revetment has likewise been present at this location since before Prop. 20, and it has increased to its current size by virtue of past County-approvals (the latest in 1998). The keyway/revetment expansion and reconstruction, and everything supported by it, including the deck reconstruction, is the project currently before the Commission.

The bluffs fronting the Applicant's site are part of an essentially continuous, half-mile long, rip-rap revetment extending from Corcoran Lagoon to Moran Lake. The Applicant's portion of this revetment is over-steepened, failing in spots, and at least partially in a state of some disrepair. A concrete retaining wall, extending to about ten feet in height, is located within the rip-rap about half way up the bluffs (just seaward of the deck), apparently constructed without a CDP. The Applicant proposes to reconstruct the revetment at a gentler slope (roughly 2 to 1 seaward of the deck) and with a new keyway that would extend its toe seaward; the retaining wall would be removed.

**California Coastal Commission****April 2004 Meeting in Santa Barbara**Staff: D.Carl Approved by: *DSL*

3-00-164 Chambers revetment sfrpt 4.15.2004.doc

The gentler slope and new keyway of the reconstructed revetment would extend the rock slope approximately 15 feet seaward, occupying a greater area of the back beach than that currently occupied at this location. The 26th Avenue Beach fronting the site is an extremely popular recreational beach, and a prime skimboarding, bodysurfing, and surfing destination. This beach has been diminished over time by the half-mile revetment along the bluffs that has reduced the useable beach area to nearly nothing in wintertime and about 50 feet or less (on average) in summer time. Although the 2:1 slope and new keyway would provide greater stability at the site, the intrusion into a prime beach area that has already been reduced over time would further diminish important public beach and recreational access, and is inconsistent with the Coastal Act policies protecting this area from such inappropriate development.

Fortunately, it is possible to provide for enhanced revetment stability at this location with no net loss of beach area coverage by instead contouring the revetment at a 1.5:1 slope for its full length (and still constructing a new keyway). Although a 1.5:1 sloped revetment will require relatively more maintenance than would a 2:1 slope, it is more appropriate in this case to reduce permanent beach area coverage than to attempt to incrementally reduce long-term maintenance given the importance of the beach area fronting the site. In addition, a 2:1 revetment slope is not necessarily required for long-term stability. In fact, the Commission regularly approves 1.5:1 revetments, including several projects along this same half-mile stretch of coast in the past couple of years. In addition, the 1.5:1 slope will readily match the toe of the up and downcoast permitted revetments because the 26th Avenue project (approved by the Commission in June of 2003; CDP 3-02-096) was specifically configured to wrap back to the Applicant's existing revetment (roughly to the point where a the 1.5:1 slope would extend to), and the upcoast revetment was likewise permitted at a 1.5:1 slope (CDP 3-81-078, Ferraro).

Even in this revised configuration, the project will result in additional rock massing in the public viewshed. In addition, the deck portion of the project retains the existing deck and fence configuration, and this existing profile both imposes on and blocks (to varying degrees) views from the beach and the adjacent 26th Avenue public access overlook and stairway site.

Staff has worked with the Applicant on a roughly proportional project mitigation and condition package meant to address the resource impacts associated with the project. Conditions are attached that:

- Require that the revetment slope be 1.5:1 to essentially eliminate seaward encroachment of the keyway/refurbishment;
- Require that the base of the deck and the top portion of the revetment to be screened with cascading native bluff plantings over the life of the development (all non-native-invasive plants would be removed and prohibited);
- Require that the existing blufftop fence located along the deck at the property line, and any planter box seaward of the blufftop edge on the deck, be reduced in size so that upcoast views from the 26th Avenue overlook/stairway site are no longer blocked, and that this public viewshed be kept clear of obstructions over the life of the development;



- Require that all development be located on the Applicant's property (some is partially in the 26th Avenue right-of-way);
- Require an offer-to-dedicate (OTD) an easement or fee-title providing for public recreational access to the beach area seaward of the revetment;
- Require that all drainage be collected and properly discharged, and that the discharge not be visible from public viewing areas;
- Require that construction impacts be limited, and that all beach areas and beach access points be restored immediately following construction;
- Require long-term monitoring based on as-built plans, and both require (i.e., retrieval of rock and debris seaward of the revetment) and allow routine maintenance, subject to the construction and restoration parameters for five years (where this term can be extended if there aren't changed circumstances that warrant a re-review of it);
- Require that there be no further seaward expansion of the revetment or any other structure beyond the as-built profile established;
- Require that the property owner assume all risk for development at this location;
- Require the property owner to participate in future shoreline planning efforts that may involve this stretch of coastline, where such efforts may involve consideration of a shoreline armoring management entity (meant to cover the larger shoreline that includes the revetment here), and may involve consideration of potential modifications and/or programs designed to reduce public viewshed and beach access impacts due to shoreline armoring; and
- Require that all the terms of the approval be recorded as restrictions on the affected property.

With the recommended conditions, Staff believes that the completed project will proportionately offset its impacts to coastal resources, and further believes that it is the best possible result given the existing shoreline conditions in this area and the history at this site. As so conditioned, Staff recommends approval.

Report Contents

	page
1. Staff Recommendation on CDP Application.....	4
2. Conditions of Approval.....	5
A. Standard Conditions.....	5
B. Special Conditions.....	5
Findings and Declarations.....	16
3. Existing Conditions.....	16



4. Proposed Project20

5. Coastal Development Permit Determination20

 A. Geologic Conditions and Hazards20

 B. Public Access and Recreation34

 C. Visual Resources.....37

 D. Cumulative Impacts39

 E. Other41

 F. Coastal Development Permit Conclusion41

6. California Environmental Quality Act (CEQA)43

7. Exhibits

 Exhibit A: Project Location

 Exhibit B: Project Area Photos

 Exhibit C: Project Plans

 Exhibit D: Geologic Cross Section

 Exhibit E: Annotated Site Plan

1. Staff Recommendation on CDP Application

The staff recommends that the Commission, after public hearing, **approve** a coastal development permit for the proposed development subject to the standard and special conditions below.

Motion. I move that the Commission approve Coastal Development Permit Number 3-00-164 pursuant to the staff recommendation.

Staff Recommendation of Approval. Staff recommends a **YES** vote. Passage of this motion will result in approval of the coastal development 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 a Coastal Development Permit. The Commission hereby approves the coastal development permit on the grounds that the development as conditioned, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the coastal development 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 feasible mitigation measures or alternatives that would substantially lessen any significant adverse effects of the development on the environment.



2. Conditions of Approval

A. 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 Co-Permittees or their 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 Co-Permittees to bind all future owners and possessors of the subject property to the terms and conditions.

B. Special Conditions

1. **Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit Final Plans (in both full-size and 11" x 17" formats with a graphic scale; two sets of each) to the Executive Director for review and approval. The Final Plans shall be prepared by a licensed civil engineer with experience in coastal structures and processes and shall be substantially in conformance with the plans submitted to the Coastal Commission (*Chambers Residence Beach Revetment* by Ifland Engineers dated received in the Coastal Commission's Central Coast District Office on August 18, 2003) but shall show the following changes and clarifications to the project:
 - (a) **Conditions of Approval.** The conditions of approval shown on plan sheet C2 (see exhibit C) shall be replaced by these conditions of approval.
 - (b) **Slope and Seaward Extent of Revetment.** The revetment shall be at a 1.5:1 slope for the full revetment (and not at a 2:1 slope seaward of the deck), and shall not extend further seaward than the seaward extent of the existing permitted configuration of the revetment located on the property to the northwest (i.e., upcoast), and shall not extend further seaward than the permitted configuration of the revetment approved by the Coastal Commission for the 26th Avenue stairway site (CDP 3-02-096) to the southeast (i.e., downcoast) (see exhibit E).



- (c) **Extent of Deck.** The deck structure, including but not limited to any structural support members and the planter boxes at its edge, shall extend no further seaward than the existing deck structure, and shall be located entirely within the Permittee's property. The plans shall show the location of the existing deck structure in relation to the proposed deck structure, and all property lines, in site plan and cross section that clearly demonstrate this to be the case.
- (d) **Blufftop Fence.** That portion of the fence extending seaward from the to-be-installed traffic barrier in the 26th Avenue right-of-way (see exhibit E) shall be: (1) reconstructed so that it is located completely on the Permittee's property; (2) prohibited seaward of the blufftop edge; (3) reduced in height as necessary to allow unencumbered upcoast views from the 26th Avenue public blufftop overlook, including views from a standing or sitting (on benches) position, where the maximum height allowed is 42 inches above the grade at the 26th Avenue overlook; and (4) shall be constructed of unfinished wood materials evocative of natural coastal bluff materials (e.g., weathered redwood) that shall not be painted for the life of the fencing.
- (e) **Viewshed Planters and Plants.** The planter boxes located in the area adjacent to the 26th Avenue public blufftop overlook in the upcoast viewshed as seen from the overlook (see exhibit E) shall be lower in height than the top of the reduced height blufftop fence specified in subsection (d) above, and all plant species in the planters shall be species that are not expected to grow taller than the top of the reduced height blufftop fence. For the deck area adjacent to the 26th Avenue public blufftop overlook that is located seaward of the blufftop edge, planters and the species within them are allowed, but neither shall extend higher than 24 inches above the deckboards. If above-deck planters are omitted in the area seaward of the blufftop edge, then this area shall include the same cable-rail (see-through) railing as the remainder of the deck.
- (f) **Edge of Deck Planters.** The upper and lower planter box system shall be extended so that it is included for all portions of the edge of the deck that are located seaward of the blufftop edge. The top row of the planters shall not be in sections between beams, but rather shall be continuous (i.e., the beams shall be cut back as necessary to allow for a continuous planter to be installed).
- (g) **Grouting Prohibited.** Grouting between rock shall be prohibited seaward of the deck.
- (h) **Drainage.** The plans shall clearly identify all permanent measures to be taken to collect and direct site drainage, including drainage in the area below the deck. Such drainage may be used for landscape irrigation provided such irrigation use does not contribute to bluff instability in any way. Any drainage not used for on-site irrigation purposes shall be collected and directed to inland storm drain collection systems. Drainage shall not be allowed: to pond at the blufftop edge; sheet flow over the bluff seaward; or otherwise be directed seaward. Drain pipes shall not be directed over, through, or in any way seaward of the blufftop edge.
- (i) **Non-Native and/or Invasive Plants Prohibited.** Non-native and/or invasive plant species shall be prohibited in the area seaward of the residence. The plans shall provide for this, including providing for the removal of existing non-native and/or invasive plant species (e.g., iceplant) in



this area initially and over the life of the revetment and/or deck. The plans shall include certification from a licensed landscape professional experienced with native species indicating that all plant species are native and non-invasive.

- (j) **Plant Maintenance.** Maintenance and monitoring parameters shall be identified for the plants seaward of the residence to ensure that this area remains devoid of invasive and/or non-native plant species (e.g., iceplant), and to ensure that the cascading planter box system provides for a dense cascading screen of vegetation that completely screens the base of the deck, the deck support columns and beams, and the top of the revetment over the life of the revetment and/or deck. At a minimum, the cascading plants shall be maintained so that they screen all structures and revetment rocks within at least ten vertical feet of a plane measured from the top of the edge of the deck. All plants shall be replaced as necessary to maintain the required dense cascading screen of vegetation over the life of the deck and/or revetment. To allow for initial growth, the required screening shall be initially achieved within at least two years of completion of construction, with an interim standard that at least the top five vertical feet below a plane measured from the top of the edge of the deck be screened within at least one year of completion of construction.

All requirements of this condition above shall be enforceable components of this coastal development permit. All requirements of this condition above shall be specified as plan notes on the Final Plans, and the plan notes shall indicate that they shall apply for the lifetime of the approved development. The Final Plans shall be submitted with evidence of the review and approval of a licensed civil engineer with experience in coastal structures and processes.

The Permittee shall undertake development in accordance with the approved Final Plans. Any proposed changes to the approved Final Plans shall be reported to the Executive Director. No changes to the approved Final Plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

2. **Construction Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a Construction Plan (in both full-size and 11" x 17" formats with a graphic scale; two sets of each) to the Executive Director for review and approval. The Construction Plan shall include, at a minimum, the following:
- (a) **Construction Areas.** The Construction Plan shall identify the specific location of all construction areas, all staging areas, all storage areas, all construction access corridors (to the construction sites and staging areas), and all public pedestrian access corridors in site plan view. All such areas within which construction activities and/or staging are to take place shall be minimized to the maximum extent feasible in order to minimize construction encroachment on both the beach and 26th Avenue overlook site, and to have the least impact on public access.
- (b) **Construction Methods and Timing.** The Construction Plan shall specify all construction methods to be used, including all methods to be used to keep the construction areas separated



from beach and blufftop recreational use areas (including using the blufftop space available on the Permittee's property inland of the revetment for staging, storage, and construction activities to the maximum extent feasible) and shall include a final construction schedule. All erosion control/water quality best management practices to be implemented during construction and their location shall be noted.

- (c) **Property Owner Consent.** The Construction Plan shall be submitted with evidence indicating that the owners of any properties on which construction activities are to take place, including properties to be crossed in accessing the site, consent to the use of their properties in these manners.
- (d) **Construction Coordinator.** The Construction Plan shall designate a construction coordinator to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and in emergencies), and shall include their contact information (i.e., address, phone numbers, etc.) including, at a minimum, a telephone number that will be made available 24 hours a day for the duration of construction. The Construction Plan shall require that the construction coordinator record the name, phone number, and nature of all complaints received regarding the construction, and that the construction coordinator investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.
- (e) **Construction Criteria.** The Construction Plan shall, at a minimum, include the following required criteria specified via written notes on the Plan:
- All work shall take place during daylight hours and lighting of the beach area is prohibited unless, due to extenuating circumstances, the Executive Director authorizes non-daylight work and/or beach area lighting.
 - Construction work or equipment operations shall not be conducted below the mean high water line unless tidal waters have receded from the authorized work areas.
 - Grading of intertidal areas is prohibited with one exception as follows: existing rock that has migrated seaward of the revetment, that is naturally exposed, and that can be retrieved without substantial excavation of the surrounding sediments, shall be retrieved and reused or removed to an appropriate disposal site offsite. Any existing rock retrieved in this manner shall be recovered by excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).
 - Any construction materials and equipment that cannot be delivered to the site from the blufftop above, shall be delivered to the beach area by rubber-tired construction vehicles. When transiting on the beach, all such vehicles shall remain as high on the upper beach as possible and avoid contact with ocean waters and intertidal areas.
 - All construction materials and equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. All construction materials and



equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. The only exceptions shall be for erosion and sediment controls (e.g., a silt fence at the base of the revetment) as necessary to contain rock and/or sediments at the revetment site, where such controls are placed as close to the toe of the revetment as possible, and are minimized in their extent.

- Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas.
- No work shall occur on the beach during weekends and/or the summer peak months (i.e., from the Saturday of Memorial Day weekend through Labor Day, inclusive) unless, due to extenuating circumstances, the Executive Director authorizes such work.
- Equipment washing, refueling, and/or servicing shall not take place on the beach.
- The construction site shall maintain good construction site housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain (including covering exposed piles of soil and wastes); dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the beach).
- All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each work day. At a minimum, silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from entering into the Pacific Ocean.
- The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least 3 working days in advance of commencement of construction, and immediately upon completion of construction.

All requirements of this condition above shall be enforceable components of this coastal development permit. The Permittee shall undertake construction in accordance with the approved Construction Plan. Any proposed changes to the approved Construction Plan shall be reported to the Executive Director. No changes to the approved Construction Plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

- 3. Construction Site Documents.** DURING ALL CONSTRUCTION, copies of each of the following shall be maintained in a conspicuous location at the construction job site at all times (where such copies shall be available for public review) and all persons involved with the construction shall be briefed on the content and meaning of each prior to commencement of construction: (a) the signed coastal development permit; (b) the approved final plans (see special condition 1); and (c) the approved construction plan (see special condition 2). In addition, the designated construction



coordinator's contact information (including their address and 24-hour phone number at a minimum) shall be conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies).

4. **Beach Restoration.** WITHIN THREE (3) DAYS OF COMPLETION OF CONSTRUCTION, the Permittee shall restore all beach areas and all beach access points impacted by construction activities to their pre-construction condition or better. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach. The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office upon completion of beach-area restoration activities to arrange for a site visit to verify that all beach-area restoration activities are complete. If planning staff should identify additional reasonable measures necessary to restore the beach and beach access points, such measures shall be implemented immediately. The beach and beach access points shall be considered restored, and this condition satisfied, upon written indication of same from planning staff of the Coastal Commission's Central Coast District Office.
5. **Beach Access Easement.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall execute and record a document, in a form and content acceptable to the Executive Director, granting or irrevocably offering to dedicate to a political subdivision, public agency or private association approved by the Executive Director either fee title or an easement for public beach access (Beach Dedication). The Beach Dedication shall apply to that portion of the Permittee's property (APN 028-234-08) located seaward of the intersection of the revetment with beach sand or, when beach sand has been stripped, with Purisima Formation sandstone (see area identified as "OTD Area" on exhibit E) (Beach Dedication Area). The recorded document shall include a legal description and a site plan of the easement area and APN 028-234-08.
6. **As-Built Revetment Plans.** WITHIN TWO (2) MONTHS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit to the Executive Director for review and approval As-Built Plans of the deck and revetment structures in 11" x 17" format with a graphic scale that includes one or more permanent surveyed benchmarks inland of the revetment for use in future monitoring efforts. The As-Built Plans shall at a minimum identify in site plan and cross-section views: the full extent of the revetment and deck structures; the bluff and the blufftop edge, and all principal residential structures immediately inland of the deck and revetment. All property and parcel lines, and any other structures, shall be identified in site plan view. Photographs of the as-built structures, with the date and time of the photographs and the location of each photographic viewpoint noted on a site plan, shall be included. The benchmark elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall indicate vertical and horizontal reference distances from the surveyed benchmark(s) to survey points along the inland-most top and seaward-most toe of the revetment (located at those points in site plan view where the delineation of the revetment's edge changes direction) and for use in future monitoring efforts; there shall be at least 3 such survey points along the inland top edge of the revetment (one at each parcel line and one in between), and at least 3 such survey points along the seaward toe of the revetment



(one at each parcel line and one in between). The survey points shall be identified through permanent markers, benchmarks, survey position, written description, et cetera to allow measurements to be taken at the same location in order to compare information between years.

The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the shoreline structure has been constructed in conformance with the approved final plans described by special condition 1 above.

7. **Monitoring.** The Permittee shall ensure that the condition and performance of the as-built revetment and deck is regularly monitored by a licensed civil engineer with experience in coastal structures and processes. Such monitoring evaluation shall at a minimum address whether any significant weathering or damage has occurred that would adversely impact future performance, and identify any structural damage requiring repair to maintain the as-built revetment and/or deck profile. At a minimum, the Permittee shall submit to the Executive Director for review and approval a monitoring report at five year intervals by May 1st of each fifth year (with the first report due May 1, 2009, and subsequent reports due May 1, 2014, May 1, 2019, and so on) for as long as the revetment and/or deck exists at this site. Each such report shall be prepared by a licensed civil engineer with experience in coastal structures and processes and shall cover the monitoring evaluation described in this condition above. All monitoring reports shall also include a section on the effectiveness of the planter box vegetation screen. Photographs of the as-built structures for representative viewpoints (including, at a minimum, from the 26th Avenue overlook and the beach below the deck), with the date and time of the photographs and the location of each photographic viewpoint noted on a site plan, shall be included. Each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the as-built revetment, deck, and/or planter box system.
8. **Shoreline Development Stipulations.** By acceptance of this permit, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns that:
 - (a) **No Further Seaward Encroachment.** Any future development, as defined in Section 30106 ("Development") of the Coastal Act, including but not limited to modifications to the revetment, shall be constructed inland of, and shall be prohibited seaward of, the seaward plane of the revetment and deck with the following development excepted from this prohibition: (1) appropriately permitted construction activities associated with construction, maintenance, or repair of the revetment, deck, plant screen, and related structures approved by coastal development permit 3-00-164; and (2) standard beach maintenance activities (e.g., those undertaken by the grantee of the fee or easement or of the offer of dedication thereof recorded pursuant to special condition 5). The seaward plane of the revetment and deck is defined by the approved (per coastal development permit 3-00-164) revetment and deck footprint and profile as shown on: (1) the approved final plans; and (2) the approved as-built plans.
 - (b) **Plant Screening.** At a minimum, all deck structures and all rocks within at least ten vertical feet



of a plane measured from the top of the edge of the deck shall be completely screened from public view (as seen from the beach and from vantage points at the 26th Avenue blufftop access point, including from the public stairway) by a dense cascading screen of native vegetation. Final plans have been approved pursuant to coastal development permit 3-00-164 that specify the native planting palette and the required vegetation maintenance parameters. All native plantings shall be maintained in good growing conditions, including the use of appropriate irrigation and drainage apparatus, and shall be replaced as necessary to maintain the required screening vegetation.

- (c) **Public View.** All structures and vegetation located within the 26th Avenue blufftop view corridor (see exhibit E) shall be not block public views as follows: (1) in the area immediately adjacent to the 26th Avenue blufftop overlook inland of the blufftop edge, structures and vegetation shall be no higher than 42 inches above the grade at the blufftop overlook; (2) in the area immediately adjacent to the 26th Avenue blufftop overlook seaward of the blufftop edge, structures and vegetation shall be no higher than 24 inches above deck board elevation; and (3) in all other areas, any structures placed on the deck (i.e., structures not shown on the approved plans) shall be lower in height than 42 inches (i.e., the railing height) and shall not be placed within deck areas seaward of the existing blufftop edge. Plants shall be kept pruned, and structures removed, to the extent necessary to keep them below these height limits.
- (d) **Maintenance.** It is the Permittee's responsibility to maintain the revetment, deck, and vegetative screening in a structurally sound manner and their approved state (per coastal development permit 3-00-164) as shown on: (1) the approved final plans; and (2) the approved as-built plans. Future maintenance of the revetment as specified in special condition 12 is authorized pursuant to the parameters of coastal development permit 3-00-164, but this does not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.
- (e) **Rock Retrieval.** Any rocks that move seaward of the as-built revetment shall be retrieved as soon as is feasible and either: (1) restacked within the approved as-built revetment footprint and profile; or (2) removed off the beach to a suitable inland disposal location (subject to any permits and/or approvals that may be required to place the rocks at the chosen disposal location). Final plans and as-built plans have been approved pursuant to coastal development permit 3-00-164 that define the profile and footprint of the approved revetment. Any rock retrieval episode shall be pursuant to the maintenance parameters of coastal development permit 3-00-164. Any existing rock retrieved in this manner shall be recovered by excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).
- (f) **Debris Removal.** The Permittee shall immediately remove all debris that may fall from the area seaward of the residence onto the revetment or the beach below.
- (g) **Assumption of Risk, Waiver of Liability and Indemnity Agreement.** The Permittee acknowledges and agrees, on behalf of itself and all successors and assigns: (i) that the site is subject to hazards from episodic and long-term bluff retreat and coastal erosion; (ii) to assume



the risks to the Permittee 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; (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; and (v) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the landowner.

(h) Future Shoreline Planning. The Permittee agrees, on behalf of itself and all successors and assigns, to participate in future shoreline armoring planning efforts that involve the revetment approved pursuant to coastal development permit 3-00-164. Such planning efforts may involve consideration of a shoreline armoring management entity meant to cover the larger shoreline that includes the revetment here, and may involve consideration of potential modifications and/or programs designed to reduce public viewshed and beach access impacts due to shoreline armoring. Agreeing to participate in no way binds the Permittee (nor any successors and assigns) to any particular outcome of such planning efforts, and in no way limits the ability of the Permittee (nor any successors and assigns) to express his/her viewpoint during the course of such planning efforts.

9. Other Agency Review. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, and/or authorizations for the project as approved by coastal development permit 3-00-164 have been granted by: (1) the California State Lands Commission; (2) Santa Cruz County; and (3) the Monterey Bay National Marine Sanctuary. Any changes to the approved project required by these agencies shall be reported to the Executive Director. No changes to the approved project shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

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

11. Rodent Removal. If, at any time, evidence indicates that rodents are living in the voids within the revetment, then the Permittee shall take reasonable action to eliminate such rodent colonization consistent with generally accepted professional pest control methods that also ensure the health and safety of the public.

12. Future Maintenance. Coastal development permit 3-00-164 authorizes future maintenance as described in this special condition. The Permittee acknowledges and agrees, on behalf of itself and all successors and assigns that: (a) it is the Permittee's responsibility to maintain the approved revetment, the vegetative screening, and all irrigation and drainage structures in a structurally sound



manner and their approved state; (b) to retrieve rocks that move seaward of the revetment and either restack them (within the approved revetment footprint and profile) or dispose of them at a suitable inland disposal location as soon as is feasible after discovery of the rock movement; and (c) to remove all debris that may fall from the area seaward of the residence onto the revetment or the beach below. Any such development, or any other maintenance development associated with the revetment, the vegetative screening, and all irrigation and drainage structures, shall be subject to the following:

- (a) **Maintenance.** "Maintenance," as it is understood in this condition, means development that would otherwise require a coastal development permit whose purpose is: (1) to reestablish or place rock within the permitted footprint and/or profile of the approved revetment structure; (2) to reestablish the permitted drainage, vegetation, and/or irrigation elements of the approved planter box system; and/or (3) to retrieve any rocks that move seaward of the approved revetment footprint and/or profile.
- (b) **Maintenance Parameters.** Maintenance shall only be allowed subject to the approved construction plan required by special condition 2. All beach areas shall be restored subject to the beach restoration parameters of special condition 4 above. Any proposed modifications to the approved construction plan and/or beach restoration requirements associated with any maintenance event shall be reported to planning staff of the Coastal Commission's Central Coast District Office with the maintenance notification (described below), and such changes shall require a coastal development permit amendment unless the Executive Director deems the proposed modifications to be minor in nature (i.e., the modifications would not result in additional coastal resource impacts).
- (c) **Other Agency Approvals.** The Permittee acknowledges that these maintenance stipulations do not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.
- (d) **Maintenance Notification.** At least two weeks prior to commencing any maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's Central Coast District Office. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, proposed changes to the maintenance parameters, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's Central Coast District Office that the maintenance event complies with this coastal development permit.
- (e) **Maintenance Coordination.** Maintenance events shall, to the degree feasible, be coordinated with other maintenance events proposed in the immediate vicinity with the goal being to limit coastal resource impacts, including the length of time that construction occurs in and around the beach area and beach access points. As such, the Permittee shall make reasonable efforts to coordinate the Permittee's maintenance events with other events (such as those of Santa Cruz



County and nearby landowners), including adjusting maintenance event scheduling as directed by planning staff of the Coastal Commission's Central Coast District Office.

- (f) **Non-compliance Proviso.** If the Permittee is not in compliance with the conditions of this permit at the time that a maintenance event is proposed, then the maintenance event that might otherwise be allowed by the terms of this future maintenance condition shall not be allowed by this condition.
- (g) **Emergency.** Nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).
- (h) **Duration of Covered Maintenance.** Future maintenance under this coastal development permit is allowed subject to the above terms for five (5) years from the date of approval (i.e., until April 15, 2009). Maintenance can be carried out beyond the 5-year period if the Executive Director extends the maintenance term in writing. The intent of the permit is to regularly allow for 5-year extensions of the maintenance term unless there are changed circumstances that may affect the consistency of the development with the policies of Chapter 3 of the Coastal Act and thus warrant a re-review of the permit.

13. Deed Restriction. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director for review and approval documentation demonstrating that the Permittee has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the special conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property. The deed restriction shall include a legal description and site plan 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.



Findings and Declarations

The Commission finds and declares as follows:

3. Existing Conditions

The proposed project is located on the bluffs immediately upcoast of the end of 26th Avenue at 26th Avenue Beach in the unincorporated Live Oak beach area of Santa Cruz County.

Santa Cruz County Regional Setting

Santa Cruz County is located on California's central coast and is bordered to the north and south by San Mateo and Monterey Counties (see exhibit A). The County's shoreline includes the northern half of the Monterey Bay and the rugged north coast extending from the City of Santa Cruz to San Mateo County along the Pacific Ocean. The County's coastal zone resources are varied and oftentimes spectacular, including the Santa Cruz Mountains coastal range and its forests and streams; an eclectic collection of shoreline environments ranging from craggy outcrops to vast sandy beaches (in both urban and more rural locations); numerous coastal wetland, lagoon and slough systems; habitats for an amazing variety and number of endangered species; water and shore oriented recreational and commercial pursuits, including world class skimboarding, bodysurfing, and surfing areas; internationally renowned marine research facilities and programs; special coastal communities like Pleasure Point; large State Parks; and the Monterey Bay itself. The unique grandeur of the region and its national significance was formally recognized in 1992 when the area offshore of the County became part of the Monterey Bay National Marine Sanctuary (MBNMS), the largest of the 12 such federally-protected marine sanctuaries in the nation.

Santa Cruz County's rugged mountain and coastal setting, its generally mild climate, and its well-honed cultural identity has combined to make the area a desirable place to both live and to visit. As a result, the County has seen extensive development and regional growth over the years that the California Coastal Management Program has been in place. In fact, Santa Cruz County's population has more than doubled since 1970 with recent census estimates indicating that the County is home to over one-quarter of a million persons.¹ This level of growth not only increases the regional need for housing, jobs, roads, urban services, infrastructure, and community services, but also the need for park areas, recreational facilities, and visitor-serving amenities. For coastal counties such as Santa Cruz where most of the residents live within a half-hour of the coast, and most significantly closer than that, coastal zone resources are a critical element in helping to meet these needs. Furthermore, with coastal parks and beaches themselves attracting visitors into the region, an even greater pressure is felt at coastal recreational systems and destinations like 26th Avenue Beach. With the Santa Cruz County shoreline and beaches providing arguably the warmest and most accessible ocean waters in all of Northern California,

¹ Census data from 1970 shows Santa Cruz County with 123,790 persons; California Department of Finance estimates for the 2000 census indicate that over 255,000 persons reside in Santa Cruz County.



and with the large population centers of the San Francisco Bay area, San Jose, and the Silicon Valley nearby, this type of resource pressure is particularly evident in coastal Santa Cruz County.

Live Oak is part of a larger area including the Cities of Santa Cruz and Capitola that is home to some of the best recreational beaches in the Monterey Bay area. Not only are north Monterey Bay weather patterns more conducive to beach recreation than the rest of the Monterey Bay area, but north bay beaches are generally the first beaches reached by visitors coming from the north of Santa Cruz. With Highway 17 providing the primary access point from the north (including from the San Francisco Bay Area, San Jose and the Silicon Valley) into the Monterey Bay area, Santa Cruz, Live Oak, and Capitola are the first coastal areas that visitors encounter upon traversing the Santa Cruz Mountains (see exhibit A). As such, the Live Oak beach area is an important coastal access asset for not only Santa Cruz County, but also the entire central and northern California region.

See exhibit A for project location information.

Live Oak Beach Area

Live Oak is the name for the unincorporated segment of Santa Cruz County located between the City of Santa Cruz (upcoast) and the City of Capitola (downcoast). The Live Oak coastal area is well known for excellent public access opportunities for beach area residents, other Live Oak residents, other Santa Cruz County residents, and visitors to the area. Walking, biking, skating, viewing, skimboarding, bodysurfing, surfing, fishing, sunbathing, and more are all among the range of recreational activities possible along the Live Oak shoreline. In addition, Live Oak also provides a number of different coastal environments including sandy beaches, rocky tidal areas, blufftop terraces, and coastal lagoons. Live Oak also includes a number of defined neighborhood and special communities within it. These varied coastal characteristics make the Live Oak shoreline unique in that a relatively small area can provide different recreational users a diverse range of alternatives for enjoying the coast. By not being limited to one large, long beach, or solely an extended stretch of rocky shoreline, the Live Oak shoreline accommodates recreational users in a manner that is typical of a much larger access system.

Primarily residential with some concentrated commercial and industrial areas, Live Oak is a substantially urbanized area with few major undeveloped parcels remaining. Development pressure has been disproportionately intense for this section of Santa Cruz County. Because Live Oak is projected to absorb the majority of the unincorporated growth in Santa Cruz County, development pressure will likely continue to tax Live Oak's public infrastructure (e.g., streets, parks, beaches, etc.) as the remaining vacant parcels are developed and developed residential lots are re-developed with larger homes.² Given that the beaches are the largest public facility in Live Oak, this pressure will be particularly evident in the beach area.

² Live Oak is currently home to some 20,000 residents. The LCP identifies Live Oak at buildout with a population of approximately 29,850 persons; based on the County's recreational formulas, this buildout population would require 150-180 acres of park acreage. Though Live Oak accounts for less than 1% of Santa Cruz County's total land acreage, this projected park acreage represents nearly 20% of the County's total projected park acreage.



Proposed Development Site

The project would take place on the bluffs and back beach area of 26th Avenue Beach, an extremely popular recreational beach,³ and a prime bodysurfing, skimboarding and surfing destination (see photos in exhibit B).⁴ 26th Avenue Beach is a narrow stretch of recreational sand area almost entirely backed by rip-rap revetments, including the Applicant's, extending from Corcoran Lagoon upcoast through to the first outcroppings of Pleasure Point downcoast. Although this beach has been severely impacted over time by rip-rap, it remains a significant public access and recreation area.⁵ Due to intervening residential development, the 26th Avenue stairway access point is a critical vertical accessway and overlook facility, providing the only public access point for the half-mile stretch of beach between Corcoran Lagoon and Moran Lake. Without the stairway, beach and ocean recreational users are forced up and downcoast to Moran Lake and Corcoran Lagoon to get to the beach. Likewise, overlook locations are limited to street ends at 24th and 25th Avenues where public amenities are not provided.

The stairs at 26th Avenue have been destroyed by winter storms repeatedly. Most recently, they have been missing since the stairway was destroyed by winter storms in 1997-98. The Commission recently approved a CDP to replace the stairway and refurbish the revetment at the stairway site (CDP 3-02-096, June 2003), and the County approved a companion project to enhance the blufftop overlook with new benches, landscaping, parking spaces, directional signs, and advanced water quality filtration (CDP 01-0056). It is expected that these public improvements will commence in May of 2004, and that the Applicant's project could be coordinated with them.

The Applicant's site is located on the upcoast side and immediately adjacent to the 26th Avenue stairway site. An existing revetment and an existing cantilevered deck extend seaward of the residence at the site.

³ Historic County analyses estimated average daily use of this beach at 848 persons, showing it to be the second highest beach use area in Live Oak after Twin Lakes State Beach located upcoast near the Santa Cruz Harbor (Technical Appendix; Live Oak General Plan; Planning Analysis and EIR, October 1977). Background LCP reports completed in 1980 estimated annual visitor counts for this beach segment at 195,393 (1980 Public Access Working Paper for the County LCP). Given the doubling of the County's population since 1970, and the increase in recreational use associated with that and population increases in surrounding areas, and the development of a parking area, restrooms, showers, and other park amenities just inland at Moran Lake County Park in the time since these surveys, these historic figures likely underestimate the current level of use at this location.

⁴ Along with Aliso and Tenth Street Beaches in Laguna Beach, and the Wedge in Newport Beach, 26th Avenue/Moran Lake Beach is known as one of the best skimboarding and bodysurfing locations in California. Professional and amateur contests are often held here, and recreational users pack the nearshore area at the project site. It is also home to a well-known surfing break that provides a high energy, if somewhat abrupt, rolling beach break known for its Pipeline-esque (but smaller scale) barrels often delivering surfers right to the sandy shore ("26th Avenue"), as well as the break known as "Little Wind-n-Sea" just downcoast where rolling waves form off of the first outcroppings of Soquel Point (better known as "Pleasure Point").

⁵ The beach here is in most cases less than 50 feet wide in summer and completely disappears during parts of the winter. Rip-rap revetments armor the backshore and encroach onto areas that otherwise would provide sandy beach access. The Commission's 1995 Monterey Bay ReCAP project, or Regional Cumulative Assessment Project, estimated that roughly 1¼ acres of sandy beach at 26th Avenue Beach was covered by rock revetments (based on a conservative footprint width estimate of 20 feet of sand beach coverage for such structures). However, the ReCAP revetment footprint estimate was a general estimate for revetment size over the entire ReCAP area. Because most of the revetments along this portion of the Santa Cruz coast have a footprint that is bigger than the assumed 20-foot width, the actual area of revetment coverage may actually be higher than that estimated in ReCAP. In any case, because such armoring fixes the bluff location and prevents beach replenishment from eroding bluffs, and in light of sea level rise and continuing shoreline erosion, it is expected that the usable beach areas here will continue to narrow over time (see also "Geologic Conditions and Hazards" section that follows).



The existing deck appears to pre-date the coastal permitting requirements of Proposition 20 (the Coastal Initiative) and the Coastal Act, as does the residence at this location. A revetment has likewise been present at this location since before Prop. 20, although its size has increased since that time. The increased size has been approved by the County through a series of emergency, building, and grading permits over the years. Ultimately, the County approved a coastal permit in 1998 for the project currently before the Commission, limiting their coastal authorization to the portion of the project in their jurisdiction. In other words, the County recognized that portion of the project in their jurisdiction, but required (by condition of approval) Commission authorization for the remainder of it.⁶

The existing revetment and deck cover the approximately 30 feet tall bluff (see exhibits B and C). The revetment is over-steepened, failing in sections, and partially in a state of some disrepair. A concrete retaining wall, extending to about ten feet in height, is located within the rip-rap about half way up the

⁶ The Commission retains coastal permit jurisdiction over tidelands, submerged lands, and/or public trust lands. Other areas within the County's coastal zone are within the County's coastal permit jurisdiction. Historically, it has been relatively difficult to determine the precise jurisdictional boundary with respect to shoreline armoring projects (like revetments). In some cases, where the boundary was mapped, it crossed directly through revetments. Thus, in the past, there have been cases where the County alone has done coastal permits, the Commission alone has done coastal permits, and where the County and Commission have both done coastal permits (i.e., split coastal permit jurisdiction over a project); in the later case there has also been the permutation where the County has done a coastal permit that was appealed to the Commission and the Commission has done a coastal permit for that portion in its jurisdiction.

At the time of the County's 1998 action on the Applicant's project, the Commission and County were splitting jurisdiction on projects such as this. Since then, because of the difficulties in determining the precise jurisdiction boundary, and in an attempt to streamline the process for coastal permit applicants, County and Commission staff agreed in late 2002 that future shoreline armoring projects would be presumed to be located in the Commission's retained coastal permit jurisdiction. In this way, applicants could avoid the additional cost and time required to pursue two coastal permits (one at the County and one at the Commission), and avoid the scenario where their County coastal permit is appealed to the Commission and then there is both a Commission coastal permit application and an appeal; this later scenario can add significantly to the time it takes for a final permit decision to be rendered, and had become more typical for shoreline armoring projects.

The presumption that any particular shoreline armoring project is located in the Commission's retained coastal permit jurisdiction can be rebutted. To do so, applicants provide evidence to the Commission's mapping unit that demonstrates the reasons why the project is not located on tidelands, submerged lands, and/or public trust lands. The Commission's mapping unit, in consultation with the California State Lands Commission, then evaluates that evidence and delineates the jurisdictional boundary for that case. Because this process alone is time consuming and costly, because any portion of a shoreline armoring project deemed through this mapping exercise to not be located in the Commission's retained jurisdiction would still be located in an area where local government coastal permit decisions are appealable to the Commission, and for the split jurisdiction reasons detailed above, such an exercise is not generally pursued.

Thus, based on the 2002 agreement, this entire project would be considered in the Commission's jurisdiction. That said, the County's approval was prior to the agreement in 1998 and was a coastal permit for a portion of the project. This history makes it difficult to parse that portion of the project that is in front of the Commission at this time, and also what is the permitted baseline against which this current expansion is to be compared. For Coastal Act evaluation purposes, the Commission has evaluated this project where the permitted (by the County) baseline is the existing rock above mean high tide (roughly 1.6 NGVD) and the new proposed element for the Commission to consider is the existing toe of the revetment, the new keyway/revetment refurbishment, and everything supported by it, including the deck reconstruction. This evaluation methodology was used because of the lack of clarity regarding the amount of rock pre-dating coastal permit requirements; the County's approval of some portion of the existing rock in their actions since then, and the fact that the Applicant has to date only refurbished the portion of the revetment that was there before the County's 1998 action; a revetment slope/configuration that is not atypical of what exists on up and downcoast neighboring properties (including the Commission-approved 26th Avenue project next door); the conclusion that alternative replacement armoring (such as a vertical seawall) would be unlike the rest of this stretch of coast (leading to incongruous aesthetics and difficult transitions at either end); and the mitigations and conditions agreed to by the Applicant.



bluffs, apparently constructed without a CDP. There is a roughly 6-foot tall fence that extends along the edge of the deck adjacent to the 26th Avenue stairway overlook site, and this deck/fence profile both imposes on and blocks (to varying degrees) views from the beach and the adjacent 26th Avenue public access overlook and stairway site. The history of the fence has not been researched as to when it was initially constructed (pre or post coastal permit requirements) and whether appropriate permits were obtained for it (because the Applicant has agreed to reduce the scale of the fence by condition). From the project plans, it appears that this fence and a small portion of the deck are located on the public road right-of-way.⁷

See exhibit A for a location maps, exhibit B for photos of the project area, exhibit C for proposed project plans, and exhibit D for a geologic cross section of the site (showing the existing and proposed representative cross-section of the revetment in relation to winter and summer beach profiles, the Purisima Formation sandstone, and inland structures).

4. Proposed Project

The Applicant proposes to reconstruct the revetment at a gentler slope and with a new keyway cut into the Purisima Formation sandstone. The revetment slope would be at a 1.5:1 slope below the deck (the upper 15 vertical feet or so of the bluff) and at a 2:1 slope for the remainder of the revetment extending seaward. The toe of the revetment would be extended roughly 15 feet seaward (see geologic cross-section in exhibit D).

The Applicant also proposes to reconstruct the cantilevered deck with a new pier foundation, new see-through horizontal cable railing, and planters along the upcoast and downcoast edges of the deck (extending seaward perpendicular to the bluff edge). The fence would apparently be retained and/or reconstructed in kind, but the plans are not clear on this point. Two rows of planters would also be installed at the edge of the deck both at and below the deck board elevation. These planters would be planted with native bluff species ("Carmel creeper" ceanothus in this case) designed to cascade over the planters and screen both the base of the deck and the top of the revetment from view. See project plans in exhibit C.

5. Coastal Development Permit Determination

A. Geologic Conditions and Hazards

Coastal Act Section 30235 addresses the use of shoreline protective devices:

⁷ As shown on the submitted plans (see exhibit C). The Applicant has indicated that this may be a surveying error, and that his private structures that are in the right-of-way on the plans are actually within the Applicant's property. As of the date of this staff report, the location of these structures relative to property lines remains unresolved.



Section 30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Coastal Act Section 30253 addresses the need to ensure long-term structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. Section 30253 provides, in applicable part:

Section 30253. New development shall:

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

1. Shoreline Armoring

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or “hard” methods designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, with the exception of new coastal-dependent uses, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

In addition, the Commission has generally interpreted Section 30235 to apply only to existing principal structures. The Commission must always consider the specifics of each individual project, but has generally found that accessory structures (such as patios, decks, gazebos, stairways, etc.) are not required to be protected under Section 30235, or can be protected from erosion by relocation or other means that do not involve shoreline armoring. The Commission has generally historically permitted at grade structures within the geologic setback area recognizing that they are expendable and capable of being removed rather than requiring a protective device that would alter natural landforms and processes along bluffs, cliffs, and beaches.

In this case, a revetment already exists at this location.⁸ The revetment reconstruction proposed would augment the existing revetment to extend its keyway out to match those of the up and downcoast

⁸ Ibid.



revetments, and to provide a less steep (2:1) slope. As such, it proposes an area of revetment in excess of that previously present and permitted. This additional area of revetment represents new armoring.

For Coastal Act Section 30235 consistency, the proposed project must satisfy all of the following requirements: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) the new shoreline-altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is necessary, while the fourth question applies to mitigating some of the impacts from it.

A. Existing Structures to be Protected

For the purposes of shoreline protective structures, the Coastal Act distinguishes between development that is allowed shoreline armoring, and development that is not. Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device. Coastal development permittees for new shorefront development are thus making a commitment to the public (through the approved action of the Commission, and its local government counterparts) that, in return for building their project, the public will not lose public beach access, offshore recreational access, sand supply, visual resources, and natural landforms, and that the public will not be held responsible for any future stability problems. In other words, coastal zone development approved and constructed since the Coastal Act should not require shoreline protection in order to "assure stability and structural integrity" because it was constructed with adequate setbacks and/or other measures in order to negate the need for future armoring.

Coastal Act 30235 allows for shoreline protection in certain circumstances (if warranted and otherwise consistent with Coastal Act policies) for "existing" structures. One class of "existing structures" refers to those structures in place prior to the effective date of the Coastal Act. Coastal zone development approved and constructed prior to the Coastal Act went into effect was not subject to Section 30253 requirements. Although some local hazard policies may have been in effect prior to the Coastal Act, these pre-Coastal Act structures have not necessarily been built in such a way as to avoid the future need for shoreline protection (in contrast to those evaluated pursuant to Section 30253). Accordingly, Coastal Act 30235 allows for shoreline protection to be considered for these types of existing structures, where "existing" means it was permitted development prior to the Coastal Act.

A second class of existing structures refers to those structures that have been permitted since the effective date of the Coastal Act. There has long been discussion that these structures should not constitute "existing structures" for purposes of Section 30235 because they were developed pursuant to 30253 (and/or similar LCP) standards so as not to require shoreline armoring in the future. However, the Commission has generally interpreted "existing" to mean structures existing at the time the armoring proposal is being considered, whether these structures were originally constructed before or after the Coastal Act, and has not limited consideration of armoring only to those structures constructed prior to



the Coastal Act.⁹

And finally, in a limited number of cases, the Commission and local government counterparts have required applicants for immediate shoreline development (like blufftop houses) to waive any right to a seawall pursuant to Section 30235. In other words, applicants are required to stipulate that the structures being permitted will not be considered existing structures for 30235 purposes in the future because they have been sited and designed to not need shoreline armoring in the future (pursuant to Section 30253 and LCP counterpart policies).¹⁰

The structures that would be protected by the reconstructed revetment would be the existing residence and the existing cantilevered deck. The residence and deck appear to pre-date the coastal permitting requirements of both Proposition 20 and the Coastal Act, and thus qualify as existing structures for purposes of Section 30235.

B. Danger from Erosion

The Coastal Act allows shoreline armoring to protect existing structures in danger from erosion, but it does not define the term “in danger.” There is a certain amount of risk in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all development along the immediate California coastline is in a certain amount of “danger.” It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring pursuant to Coastal Act Section 30235. Lacking Coastal Act definition, the Commission’s long practice has been to evaluate the immediacy of any threat in order to make determinations as to whether an existing structure is “in danger.” While each case is evaluated based upon its own particular set of facts, the Commission has generally interpreted “in danger” to mean that an existing structure would be unsafe to use or otherwise occupy within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the no project alternative).

The Applicant has submitted the following geotechnical evidence to support the contention that the existing structures are in danger from erosion, and that the proposed project is appropriate:

- *Geologic Investigation Chambers Property* by Rogers E. Johnson & Associates, dated March 31, 2003 (RJA);

⁹ Note that there is litigation pending in San Francisco County Superior Court (case number CPF 03503643, *Surfrider Foundation v. California Coastal Commission*) involving the Commission’s application of this interpretation of “existing structures” based on a recent Commission decision in a Pismo Beach seawall case (A-3-PSB-02-016; Grossman-Cavanagh). In their petition, the Surfrider Foundation challenges the interpretation that existing structures mean structures existing at the time of the decision, alleging instead that existing structures (per Section 30235) refers to structures existing prior to the enactment of the Coastal Act. As of the date of this staff report, no decisions have been reached in the case.

¹⁰ For example, the Swenson residence downcoast of this site in the City of Capitola (A-3-CAP-99-023, approved in 1999).



- *Geotechnical and Coastal Engineering Investigation for 101 26th Avenue*, by Haro Kasunich and Associates Inc., dated June 2003 (HKA);

Bluff retreat has effectively been halted at this location by the existing revetment. Provided it were appropriately maintained, there is little reason to believe that this condition couldn't be maintained over the very long-term (RJA). In fact, even if the revetment were allowed to deteriorate without repair, RJA estimates that it would be over a decade until the existing residence were undermined.¹¹ In this sense, the existing structures aren't "in danger" in the typical Coastal Act sense of that term; particularly if the permitted portion of the existing revetment were maintained. There are other reasons that reconstructing the revetment with a keyway helps achieve Coastal Act policies (such as long-term stability), but such reconstruction is not because of an imminent danger if the revetment is not keyed and not extended seaward. Therefore, the project does not meet the second Section 30235 test and the Commission is not required to approve the project.

C. Feasible Protection Alternatives to a Shoreline Structure

The next Section 30235 test that must be met before a shoreline protective device must be approved is that the proposed armoring must be "required" to protect the existing threatened structure. In other words, shoreline armoring may be permitted if it is the only feasible¹² alternative capable of protecting the endangered structure. Other non-armoring alternatives typically considered include: the "no project" alternative; abandonment of threatened structures; relocation of the threatened structures; sand replenishment programs; drainage and vegetation measures on the blufftop itself; and combinations of each. In some cases, different types of armoring alternatives than that proposed (where the alternatives may have lesser impacts) are also considered.

One feasible alternative project in this case would be to approve a repair of the existing revetment in its existing profile. RJA estimates that such a properly maintained structure "could last for the lifetime of the subject dwelling." Because it is oversteepened and unkeyed, however, such a project would be expected to lead to more frequent rock migration seaward (slumping and subsidence) and corresponding impacts to public recreational access. It would also require more intense and more frequent maintenance, where each successive event brings with it additional public recreational access impacts of its own. Thus, such an option is feasible, but the reduction in some impacts (like beach area coverage) would be offset by increased impacts in other ways.

¹¹ Note that RJA's methodology is confusing on this point. Commission staff attempted to clarify RJA's danger evaluation, but, as of the date of this report RJA was not available to provide a clarification. In any case, RJA's estimates are based on the revetment deteriorating over the next 15 years, and the bluffs beginning to erode at up to a foot per year during this time as they are exposed. RJA ultimately concludes that the residence would be expected to be undermined in this scenario in approximately 12 years. RJA has not provided any separate danger evaluation in relation to the deck structure, but he does indicate that the unpermitted retaining wall (that is just seaward of the deck) would be expected to collapse in 5 years. These time frames are longer than the 2 to 3 years generally relied upon by the Commission.

¹² Note that Coastal Act Section 30108 defines feasibility as follows: "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.



Another option would be to reconstruct the entire revetment at a 1.5:1 slope with a new keyway.¹³ This option would provide better stability than the existing revetment, though not as much stability as a gentler sloped revetment would be expected to provide. While a 2:1 slope may be ideal for stability purposes, it also results in more beach coverage; a critical consideration on beaches like this that are prime visitor destinations and that have already been severely limited by rip-rap. In addition, a 2:1 slope may be a general rule of thumb, but 1.5:1 revetment slopes have also performed well in Santa Cruz County, are as much the norm as 2:1, and have been permitted in that configuration by the Commission.¹⁴ The seaward toe of the keyway in this 1.5:1 slope option would be approximately as far seaward as the existing revetment, negating the need for additional seaward expansion to accommodate a 2:1 slope as proposed. In addition, the 1.5:1 slope will readily match the toe of the up and downcoast permitted revetments because the 26th Avenue project (approved by the Commission in June of 2003; CDP 3-02-096) was specifically configured to wrap back to the Applicant's existing revetment (roughly to the point where a the 1.5:1 slope would extend to),¹⁵ and the upcoast revetment was likewise permitted at a 1.5:1 slope (CDP 3-81-078, Ferraro).

Another alternative would be to replace the existing revetment with a vertical seawall of some type. Such an option would result in similar long-term protection with a lesser beach area footprint. Provided the wall were made to mimic natural bluff forms (i.e., colored, contoured, sculpted, etc.), it could also improve aesthetics at the site (over the existing revetment). It would also be expected to have much less maintenance requirements over its design lifetime (and thus less impacts associated with maintenance). This option is feasible. That said, the site is part of a nearly continuous half mile revetment fronting the bluffs here. A seawall would be unlike the rest of this stretch of coast and could make for difficult areas of transitions at its ends, as well as incongruous aesthetics overall. It could also possibly lead to localized refraction issues for the shoreline skimboarding and offshore surfing areas. Thus, as with the 'repair existing only' option, a seawall is a feasible alternative, but the reduction in some impacts (like beach area coverage) would be offset by increased impacts in other ways. It would also cost substantially more to construct.

Yet another alternative would be the true "no project" alternative. In other words, allowing the existing revetment structure to slowly deteriorate. This slow deterioration would result in higher levels of the types of public recreational access impacts identified for the repair option above, and would ultimately

¹³ The Applicant proposes the top 15 vertical feet of the revetment seaward of the blufftop edge and under the deck to be at this slope, with the remainder at a 2:1 slope.

¹⁴ Including nearby projects at this same beach just downcoast that were recently permitted by the Commission: CDP 3-02-012 (Vista del Mar Homeowner's Association, 2002), CDP 3-02-013 (O'Neill, 2002), CDP amendment (O'Neill and Walker, 2003), and CDP application 3-03-016 (Lang, 2004). The upcoast neighboring site was also permitted by the Commission at a 1.5:1 slope (CDP 3-81-078; Ferraro). The Commission also recently approved a long-term maintenance permit for a 1,500 linear foot revetment in south Santa Cruz County (CDP 3-03-099, Sea Cliff Beach Association, November 2003) where the revetment slope was 1.5:1.

¹⁵ Note that the 26th Avenue revetment was approved at a 2:1 slope. One reason for this was because the 26th Avenue bluff armoring has been less well maintained over the years than has the Applicant's and the adjacent property immediately down coast of 26th Avenue. As a result, the bluff has retreated further back at 26th Avenue than it has at the neighboring properties. This is a common phenomena at public streets ending at the beach in Live Oak that are flanked by private residential development. The 2:1 slope approved at 26th Avenue was in recognition of this fact, and was designed to extend the 26th Avenue revetment to match the seaward extent of the Applicant's existing revetment and that of the downcoast property.



lead to the loss of the deck and residence at this location. This option is not feasible because it doesn't recognize any status of the existing revetment, and would result in loss of existing structures in a relatively short time period.

In terms of other options, relocation of the existing structures is infeasible because there is a lack of available space within which to relocate. In particular, the deck could be removed, but there is no location on the project site for it to be moved to. Similarly, the residence occupies most all of the site as well. Relocation is thus more aptly described as demolition without reconstruction of all or parts of the existing structures here. Drainage and vegetation alone would not be expected to significantly alter erosion patterns, although it would be expected to provide added stability in any alternative.

In sum, there are alternatives to the project proposed, but there don't appear to be non-armoring alternatives. New altering of the shoreline (i.e., seaward extension and addition of the keyway) isn't required, though. The project, therefore, does not meet the third Section 30235 test and the Commission is not required to approve the project.

D. Sand Supply Impacts

The last test of Section 30235 (previously cited) that must be met in order to require Commission approval is that shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Shoreline Processes

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gulying, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an on-going mix and exchange of material between beaches and dunes. Many coastal bluffs contain marine terrace deposits that may consist, in part, of ancient beach deposits that formed when land and sea levels differed from current conditions. Since some marine terrace deposits consist of ancient beach material, a large proportion of the material in the terraces is often beach quality sand or cobble, and a valuable contribution to the littoral system when it is added to the beach. While beaches can be preserved as marine terrace deposits over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide material to the beach. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action that may cause 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 the back-beach or bluff is covered by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material is the most important component of most beaches, only the sand portion of the bluff or dune material is quantified as beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be



significantly altered by the construction of shoreline armoring structures since bluff retreat is one of several ways that beach quality sand is added to the shoreline. Bluff retreat and erosion is a natural process resulting from many different factors; shoreline armoring directly impedes these natural processes.

The subject site is located within the Santa Cruz Littoral Cell. The Santa Cruz Cell is a high volume cell with annual longshore transport estimated between 300,000 and 500,000 cubic yards of beach quality materials annually.¹⁶ The dominant direction of longshore transport in this sand supply system is north north-west to south south-east (roughly from up to downcoast in relation to the site).¹⁷ Materials in this system have been estimated to come mainly from coastal streams (roughly 75%), with 20% coming from bluffs, and 5% coming from coastal ravines and sand dunes.¹⁸

Some of the effects of engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary and/or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on local shoreline sand supply shoreline processes can be quantified, however, including: (1) the 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 (also known as "passive erosion"); and (3) the amount of material which would have been supplied to the beach if the back beach or bluff were to erode naturally.

In this case, the back-beach is already armored by the existing revetment,¹⁹ and thus the sand supply impact is limited to the loss of the sand-generating area on which the expanded portion of the structure would be located (its encroachment on the beach).²⁰

Encroachment on the Beach

Shoreline protective devices such as seawalls, revetments, gunnite facings, groins, et cetera are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand-generating area. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it

¹⁶ US Army Corps of Engineers (ACOE), San Francisco District, 1994. Note that ACOE's final EIS/EIR for the recent Pleasure Point Seawall project indicates that there have been differing estimates on the amount of littoral drift over the years, and concludes that annual littoral drift ranges from 250,000 to 325,000 cubic yards annually for the Santa Cruz cell.

¹⁷ Ibid.

¹⁸ Griggs and Best, 1991: (1) "A Sediment Budget For The Santa Cruz Littoral Cell," Soc. Econ. Paleon. & Mineral. Spec. Pub. No. 46, pp. 35 - 50; and (2) "The Santa Cruz Littoral Cell: Difficulties in Quantifying a Coastal Sediment Budget," Proceedings for Coastal Sediments '91, American Society of Civil Engineers, pp. 2262 - 2276.

¹⁹ Ibid.

²⁰ The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the augmentation proposed here would impact sand supply processes. Recreational beach area coverage is also described in the public access finding.



spreads seaward over time. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

The revetment repair would extend the revetment seaward and key it into the underlying sandstone. While there are access and recreational issues associated with the loss of any useable recreational sandy beach space (as discussed in the public access finding of this report), because the sand would be scraped away and the structures placed onto sandstone (and the displaced sand and sandstone materials pushed back over the structures), the sand supply impact in this case concerns the potential loss of sandstone area for generating sand. As discussed above, sandstone is one probable source of sand for the Santa Cruz Littoral Cell shoreline supply. Using the Commission's long-standing methodology, the proposed project would cover a roughly 900 square foot section of sandstone and beach area that would otherwise contribute to the local sand supply during winter beach conditions, and that would otherwise be occupied by beach sand most of the year (i.e., an expansion seaward by roughly 15 feet along 60 feet of bluff frontage).

To convert the 900 square foot loss of beach sand area into the volume of sand necessary to restore the beach commensurately in cubic yards, coastal engineers use a conversion value representing units of cubic yards per square foot of beach.²¹ In this case, the Commission has not been able to establish an actual conversion factor for the 26th Avenue Beach vicinity. RJA has estimated this figure to be 0.88, but rounds this up to 1.0.²² Using the 1.0 conversion factor (i.e., the low end of the spectrum of values typically assumed by coastal engineers, and as ultimately agreed to by RJA), a conservative estimate of the cubic yard equivalent of the 900 square foot area can be calculated. In this case, the impact measures 900 cubic yards of sand.

Sand Supply Mitigation

The 900 cubic yard sand supply impact has not been minimized by project design. It could be eliminated by strictly repairing the existing profile of the revetment (with or without a new keyway), but this would lead to different impacts, as discussed above. Sand supply mitigation has not been proposed. Because the project as designed does not meet the sand supply impact test of Section 30235 (i.e., the proposed project does not eliminate and does not completely mitigate such impacts), the Commission is not required to approve the revetment augmentation proposed.

As far as mitigating for this impact, typical mitigations required by the Commission for such direct sand supply impacts have been in-lieu fees and/or beach nourishment.

²¹ This conversion value is based on the regional beach and nearshore profiles, and overall characteristics. When there is not regional data to better quantify this value, it is often assumed to be between 1 and 1.5, the idea being that to build a beach seaward one foot, there must be enough sand to provide a one-foot wedge of sand through the entire region of onshore-offshore transport. If the range of reversible sediment movement is from -30 feet msl to +10 feet msl, then a one-foot beach addition must be added for the full range from -30 to +10 feet, or 40 feet total. This 40-foot by 1 foot square parallelogram could be built with 1.5 cubic yards of sand (40 cubic feet divided by 27 cubic feet per cubic yard). If the range of reversible sediment transport is less than 40 feet, it will take less than 1.5 cubic yards of sand to rebuild one square foot of beach; if the range of reversible sediment transport is larger than 40 feet, it will take more than 1.5 cubic yards of sand to rebuild one square foot of beach.

²² A 0.88 figure would be fairly low, and it isn't clear that a figure that low is appropriate for the 26th Avenue case.



With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system to mitigate the loss of sand that would be caused by a protective device. Obviously, such an introduction of sand, if properly planned, can feed into the Santa Cruz Littoral Cell sand system to mitigate the impact of the project. However, there are no currently existing beach nourishment programs directed at this beach area. Absent a comprehensive program that provides a means to coordinate and maximize the benefits of mitigation efforts in the area now and in the future, the success of such piecemeal mitigation efforts is questionable. Without a program that evaluates the natural processes and existing conditions in order to establish the most appropriate sites and methods for introducing sand material so that it will mitigate this project's impacts and maximize benefits to the sandy beach, the Commission cannot specify a direct in-kind placement of sandy material as mitigation.

As an alternative mitigation mechanism, an in-lieu fee is oftentimes used by the Commission when in-kind mitigation of impacts is not available. In situations where ongoing sand replenishment programs are not yet in place, the in-lieu sand mitigation fee is deposited into an account until such time as an appropriate program is developed and the fees can then be used to offset the designated impacts. Recent estimates to deliver beach quality sand to Santa Cruz beaches are roughly \$25 a cubic yard. For 900 cubic yards, this translates roughly into a \$22,500 fee. However, the sand supply mitigation fees that have been collected in the past in the Central Coast District area have not yet been applied to any sand nourishment programs to date, and have not yet resulted in any physical sand supply mitigation as a result.²³

E. Shoreline Armoring Conclusion

The project does not meet the Section 30235 tests, and the Commission is not required to approve the project. There are other reasons why the proposed project helps achieve some Coastal Act policy objectives, though, and why some variation of it should continue to be considered to formally recognize structures here and improve coastal recreational and view access (see findings that follow and conclusion).

In order to approve the new armoring, though, the sand supply impact must be eliminated or mitigated per Section 30235. One way of doing this would be to require a \$22,500 fee from the Applicant. This fee amount is generally similar to the amount of the two past sand supply fees imposed as mitigation by the Commission in the Central Coast District area (i.e., \$25,066 required in the Motroni-Bardwell case, and \$26,783 in the Panattoni case), and to the amount of sand brought to the site to partially offset this identified impact in another recent case (726 cubic yards of sand representing roughly \$18,150 in the Podesto case; CDP 3-02-107). That said, there is neither an account nor a program established to implement such an account for the 26th Avenue Beach area.

More appropriately, the project can be reconfigured to essentially negate the need to extend the

²³ The Motroni-Bardwell case upcoast of this site in Capitola (CDP 3-97-065), the Panattoni case downcoast in Carmel (CDP 3-98-102). These fees were collected in 1998 and 1999 respectively.



revetment seaward, and thus eliminate a new area of rock coverage toward the beach. This can be accomplished by modifying the revetment slope so that it is 1.5 to 1 for the whole revetment, as opposed to 1.5 to 1 for only the top 15 vertical feet (and 2 to 1 otherwise), and constructing a keyway for stability. In this way, new areas of seaward encroachment would be limited to an extremely small area necessary to meet the toe of the revetment to be constructed at the 26th Avenue stairway site (as approved by the Commission in June, CDP 3-02-096), and at the upcoast neighbor (see exhibit E). These new areas of encroachment would be offset by areas currently occupied by rock that would be pulled back. In sum, the net sand supply impact can be essentially eliminated, as can the requirement for \$22,500 worth of sand supply mitigation on behalf of the Applicant. And, because there are other benefits to proceeding with a project (see findings that follow), the revised project can be found consistent with Section 30235 as cited in this finding, even though the Commission is not required to approve a project per 30235.

2. Long Term Structural Stability

A. Shoreline Dynamics

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. This is particularly critical given the dynamic shoreline environment within which the proposed project would be placed. Moreover, with global warming and sea level rise,²⁴ increased wave heights and wave energy are likewise expected. Along much of the California coast, the bottom depth controls the nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in water depth and wave height can cause a significant increase in wave energy and wave damage. So, combined with the physical increase in water elevation, a small rise in sea level can expose previously protected back shore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces. Structures that are adequate for current storm conditions may not provide as much protection in the future.

A second concern with global warming and sea level rise is that the climatic changes could cause

²⁴ There is a growing body of evidence that there has been a slight increase in global temperature and that an acceleration in the rate of sea level can be expected to accompany this increase in temperature. According to the *Third Assessment Report - Climate Change 2001*, by the International Panel on Climate Change (IPCC) global sea level is predicted to rise by 0.09 to 0.88 meters (0.3 to 2.88 feet) from the 1990 level by 2100, with significant regional variability. Monterey Bay was not included in the estimates of sea level rise through the year 2100. The closest tidal stations with an adequate record to use for a 100-year projection were San Francisco and Santa Monica. Both those locations could, by the year 2100, have a rise in sea level approaching 3 feet, with a 10% probability that it would be higher than that, based on estimates of historic and future sea level change provided by the U.S. Environmental Protection Agency in Titus and Narayanan (1995) "The Probability of Sea Level Rise" (EPA 230-R-95-008). In the Monterey Bay area, the trend for sea level rise for the past 25 years has been an increase resulting in an historic rate of nearly 1 foot per 100 years (NOAA, National Ocean Service), significantly higher than the average historic change recorded at either San Francisco or Santa Monica. This deviation in historic trends between Monterey Bay and both San Francisco and Santa Monica is very likely due to the short duration of the tidal record at Monterey; however, it can also suggest that the localized rise in sea level in Monterey Bay may be higher than what was experienced at either San Francisco or at Santa Monica. Thus the future 100 year-change in mean sea level for Monterey Bay may be higher than the estimated 2.7 feet (for San Francisco) or the estimated 2.85 feet (for Santa Monica), for both of which there is a 10% probability of being exceeded.



changes to the storm patterns and wave climate for the entire coast. As water elevations change, the transformation of waves from deep water will be altered and points of energy convergence and divergence could shift. The new locations of energy convergence would become the new erosion "hot spots" while the divergence points may experience accretion or stability. It is highly likely that portions of the coast will experience more frequent storms and the historic "100-year storm" may occur more often.

The frequency of major storm events in the Monterey Bay has been documented to be roughly two every three years, and the frequency of such storms causing significant damage roughly one every 5.3 years (RJA). In an attempt to ensure stability under such conditions, the Commission has typically required that new shoreline structures be designed to withstand either a 100-year storm event, or a storm event comparable to the 1982/83 El Niño event. Also, since it is possible that storm conditions may worsen in the future, the Commission has required that structures be inspected and maintained on a regular basis. The coast can be altered significantly during a major storm and coastal structures need to be inspected on a regular basis to make sure they continue to function as designed. If storm conditions worsen in future years, the structures may require changes or modifications to remain effective. In some rare situations, storm conditions may change so dramatically that existing protective structures may no longer be able to provide any significant protection, even with routine maintenance.

B. Revetment Stability

For revetments, an important component of long-term stability is the function of a keyway to "lock" the revetment into place. The existing revetment is not keyed but rather was placed directly atop beach sands. Such an un-keyed structure is liable to "float" around somewhat on the sand as the beach profile changes and scouring takes place, and as regular wave attack takes its toll. As a result, an un-keyed revetment is more liable to shift and undulate than is a keyed structure. Likewise, lacking a keyway individual rocks are more likely to migrate out onto the beach or into the intertidal area, sometimes migrating just under the sand, where these rocks can become a public access impediment (including beach, near-shore, and offshore recreational access) and a public safety hazard, and where they disrupt coastal views. This impact is magnified at this location because the fact that this is a prime recreational beach destination, particularly for active recreational pursuits like skimboarding and body surfing that take place in the near shore environment where the rock would be expected to make its way. A revetment that is over-steep, such as the existing revetment at a 1:1 slope in most places, only exacerbates these stability problems as the rocks themselves are less secure. Finally, although all rock revetments require substantial maintenance, an un-keyed and over-steep revetment will require relatively more maintenance than a keyed revetment.

These stability problems with the existing revetment lead to public recreational access and view impacts (from migrating rocks and individual construction maintenance events), and can lead to the increased probability of projects taking place under emergency conditions that can result in results that are less than ideal for protecting resources and public recreational access and views in the long-term (see also public access findings). The primary reason for the proposed revetment reconstruction is to install a keyway and to reduce the slope to promote long-term stability at this site. In this narrow sense,



restacking to a 2:1 slope and constructing a keyway should reduce long-term impacts to resources and access and views. That said, it would result in some additional public recreational access and view impacts (from the new area of coverage), that must also be factored into this equation. A project at a 1.5:1 slope and with a keyway (as previously detailed) should likewise reduce long-term impacts to resources and access and views, with a net amount of new beach area coverage that is essentially zero. This latter project is more consistent with the Coastal Act in this regard than that proposed (see special conditions).

C. Deck Stability

Furthermore, the cantilevered deck is in need of repair if it is itself not to become structurally unsound; particularly with an un-maintained and/or maintained in its existing steepened and unkeyed state revetment. Absent some form of stabilization, the deck too would be expected to deteriorate and lead to similar types of public recreational access and view problems as would be attributable to the rock from the revetment. In the deck case, it wouldn't be rock, but timbers, concrete foundation, and other structural members making their way onto the beach and into the surf below. It isn't clear from the materials and geotechnical analysis submitted at what point this might occur, but it would likely be in the relatively near term. For example, HKA indicates that the deck slumped downward during the 1998 storms. At that time, and without coastal authorization, concrete was pumped to the base of the masonry wall (itself constructed without coastal permits) in an unsuccessful effort to restore vertical support.

The project proposes to replace the existing sub-standard deck caissons with 18 inch diameter concrete piers embedded approximately 30 feet down into bedrock. This construction will alter the existing natural landform, and is much more substantial than that that exists now. The unpermitted concrete wall in the rip-rap, and the remnants of concrete and soils placed at it, are proposed for removal, thus rectifying this violation. The new deck foundation system is supportable, and the alteration of the bluff that it entails is supportable under the Coastal Act because it would result in better long-term stability for this pre-Prop. 20 structure, avoiding the above-described types of problems from it deteriorating over time, and because of other elements of the project and the agreed-upon project conditions designed to protect and enhance recreational and visual access to the degree feasible (as discussed above and in the findings that follow).

One problem is that a small portion of the deck (about a foot or so) appears to be constructed in the 26th Avenue right-of-way (see exhibit C). Fortunately, this encroachment on public lands can easily be rectified by reconstructing the deck entirely within the Applicant's property (see special conditions).

D. Monitoring and Maintenance

Critical to the task of ensuring long-term stability as required by Section 30253 is a formal long-term monitoring and maintenance program. If the revetment and/or deck were damaged in the future (e.g. as a result of flooding, landsliding, wave action, storms, etc.) it could lead to a degraded public access condition, it could lead to damage to the adjacent stairway (from dislodged rocks and/or deck pieces forced into it), and it could lead to the need for more bluff alteration and/or more substantial armoring. In addition, such damages 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 revised project consistent with Coastal Act Section 30253, the proposed project must be maintained in its approved state. Further, in order to ensure that the property owner and the Commission know when repairs or maintenance are required, the Applicant must regularly monitor the condition of the subject armoring, particularly after major storm events. Such monitoring will ensure that the Applicant and the Commission are aware of any damage to or weathering of the armoring and can determine whether repairs or other actions are necessary to maintain the structures in their approved state before such repairs or actions are undertaken. To assist in such an effort, monitoring plans need to be based on clear as-built plans that provide vertical and horizontal reference distances from armoring structures to surveyed benchmarks for use in future monitoring efforts. Further seaward encroachment (and more substantial armoring) must be prohibited, and drainage controlled. See conditions of approval.

E. Assumption of Risk

The Commission's experience in evaluating the consistency of proposed developments with Coastal Act policies regarding development in areas subject to problems associated with geologic instability, flood, wave, or erosion hazard, has been that development has continued to occur despite periodic episodes of heavy storm damage, erosion, landslides, or other such occurrences. Shoreline development is susceptible to bluff retreat and erosion damage due to storm waves and storm surge conditions. Past occurrences statewide have resulted in public costs (through low interest loans and grants) in the millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding placing the economic burden on the people of the state for damages, the Commission has regularly required that Applicants acknowledge site geologic risks and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed.

The risks of the project include that the revetment, deck, and/or inland residential structures will be damaged by bluff failure, erosion, and wave action. Although the Commission has tried to minimize these risks, the risks cannot be eliminated entirely. Given that the Applicant has chosen to construct the project despite these risks, the Applicant must assume these risks. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see conditions of approval).

F. Long Term Structural Stability Conclusion

The revised revetment (at a 1.5:1 slope and keyed) and the reconstructed deck can be found consistent with Coastal Act Section 30253 because they would result in better long-term stability at the site than exists now, would avoid the above-described types of problems from deteriorating structures over time, and because of other elements of the project and the agreed-upon project conditions designed to protect and enhance recreational and visual access to the degree feasible (as discussed above and in the findings that follow).

4. Geologic Conditions and Hazards Conclusion

Because it doesn't meet all of the Section 30235 tests, the Commission is not required to approve the



revetment reconstruction. However, portions of the project's objectives are sound from a Coastal Act perspective (enhanced stability, improved viewshed, protection of beach recreational access), and a project that provided for enhanced stability while also accounting for these other objectives could be approved. A revised revetment (at a 1.5:1 slope and keyed) and a reconstructed deck can be found consistent with Coastal Act Sections 30235 and 30253 because stability issues can be addressed (i.e., no future expansion, monitoring, maintenance, as-built plans, assumption of risk, etc.) and because the project, including the other project modifications, can protect and enhance beach recreational access and views (see agreed upon conditions of approval).

B. Public Access and Recreation

Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." The proposed project is located seaward of the first through public road (East Cliff Drive). Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

30210. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

30211. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

30212(a). Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects ...

30213. Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. ...

30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.



Coastal Act Section 30240(b) also protects parks and recreation areas such as the 26th Avenue overlook adjacent to the site, and the beach and offshore recreation area seaward of the site. Section 30240(b) states:

30240(b). Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Finally, Section 30253 protects special recreational destination points such as the beach fronting the revetment and its relation to up and downcoast beaches. Section 30253 states, in part:

30253(5). New development shall: where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.

As previously detailed, the project site fronts the extremely popular 26th Avenue Beach that is highly used, and a prime bodysurfing, skimboarding and surfing destination (see also Existing Conditions section of this report preceding). The 26th Avenue public view overlook and to-be-reconstructed stairway is located immediately adjacent to the site.

Permanent Beach Access Loss

The proposed reconstructed revetment would extend the base of the existing revetment²⁵ seaward in order to construct a new keyway and to integrate with up and downcoast revetments. This extension would cover roughly 900 square feet (i.e., 15 feet seaward along 60 feet of project frontage – see project plans and geologic cross section in exhibits C and D). Although this area of coverage would be relatively small during peak use times (as it would be expected to be covered with sand in a typical summer beach profile), it would represent a new impediment to beach use – particularly during the wintertime months. The ability of the public to use that portion of the beach for lateral access, passive access (e.g., sitting and enjoying the beach), and both sand (such a frisbee, soccer, etc.) and water recreational (such as surfing, body boarding, skimboarding, etc.) access would be reduced and diminished. The beach area in question is heavily used for these public recreational pursuits and this impact is inconsistent with the Coastal Act policies listed above that protect these public use areas.

Fortunately as detailed in the preceding finding, the project can be modified so that the revetment slope is installed at 1.5:1. By doing this, the new area of long-term beach encroachment can be essentially eliminated consistent with the Coastal Act policies protecting this area (see conditions of approval).

Temporary Impacts

That said, rocks and/or deck debris may come off of this site (as detailed in the preceding finding) and negatively impact beach recreational use and facilities. This impact can be due to displacement (where

²⁵ Ibid.



rocks occupy beach space), or increased danger to recreation (such as a rock submerged just below the surface or in the recreational surf zone), or increased danger to recreational structures (such as the 26th Avenue stairway site adjacent) when such rocks and/or other debris are thrown landward in storm events, or combinations of each. Individual rocks that migrate can sometimes be retrieved, and other times cannot be located. In both cases, the rock leads to negative impacts depending on its location relative to beach uses areas, the length of time it is located in areas that detract from recreational use, and its potential for causing damage in a storm event (particularly given that such storms typically scour away beach sand and expose strewn rocks otherwise hidden). These impacts need to be mitigated if the revised project is to be found consistent with the above-listed policies.

One way of reducing such impacts is to require that all such rock and debris be retrieved immediately. This is appropriate and required in this case (see conditions). However, while this can reduce these impacts, it does not eliminate them (as the impact will be present from the time the rock and/or debris migrates into the public recreational beach area until it is removed). This impact also requires mitigation.

In addition, during construction times (initially and future maintenance), the project will: require the movement of large equipment, workers, and supplies through the public beach and beach access points to gain access to the revetment site; include large equipment operations on the recreational beach area fronting the site; result in the loss of recreational beach area to a construction zone (at the immediate project area); potentially encroach on Sanctuary waters (depending on tides); and generally intrude and negatively impact the aesthetics, ambiance, serenity, and safety of the recreation beach experience. This is likewise inconsistent with the Coastal Act policies listed above that protect these public use areas

These construction impacts can be contained through construction parameters that limit the area of construction, limit the times when work can take place (to avoid both weekends and peak summer use months when recreational use is highest), clearly fence off the minimum construction area necessary, keep equipment out of Sanctuary waters, require off-beach equipment and material storage during non-construction times, and clearly delineate and avoid to the maximum extent feasible beach use areas. Even with these containment provisions, however, the public will bear the burden of the negative construction impacts associated with construction on this very popular beach. Because this project would allow for multiple such construction episodes, these impacts would be correspondingly multiplied. The Applicant will be required to restore all beach areas and beach access points following construction, but cleaning up one's construction mess does not compensate for the negative public access impacts over the duration of construction.

Thus, mitigation for these temporary construction impacts and for the temporary impacts from rock and/or debris on the beach (as described above) is necessary. In this case, the Applicant owns in fee-title the area of beach extending seaward from the revetment (see exhibit D). To mitigate for the beach recreational access loss, this area can be dedicated directly to an appropriate entity (like the County) or the Applicant can record an offer to dedicate this area. Although the value of such a dedication (in a public recreational access sense) is limited because the area held in fee title by the Applicant is already a de facto part of the existing beach recreational access area, may already be State Lands (see "Other" section of this report), and it cannot be distinguished from the surrounding beach areas, an OTD or fee



title helps in perfecting a public right of access to the beach area in question. While such mitigation is minimal in this sense, lacking an in-lieu (beach access improvement) fee program or some other type of beach acquisition/creation program, this mitigation is sufficient in this case.

Public Access and Recreation Conclusion

By allowing for a project that makes the revetment (at the revised 1.5:1 slope) and deck more stable, impacts to public recreational access from instability can be reduced – this is a public access benefit. The area of permanent increased beach coverage is essentially zero in such a scenario. That said, public recreational access will be negatively impacted during construction (both initially and by future allowed maintenance), and will be negatively impacted during the time that rocks and/or debris enter into the beach access area. These temporary impacts can be mitigated by an OTD for the beach area seaward of the revetment. A revised revetment (at a 1.5:1 slope and keyed) and a reconstructed deck can be found consistent with the Coastal Act sections discussed in this finding because these access impacts can be mitigated by the OTD, and because the project, including the other project modifications, can protect and enhance beach recreational access and views (see agreed upon conditions of approval).

C. Visual Resources

Coastal Act Section 30251 protects coastal viewsheds. Section 30251 states:

Section 30251. 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. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Coastal Act Section 30240(b) also protects parks and recreation areas such as the 26th Avenue overlook adjacent to the site, and the beach and offshore recreation area seaward of the site. Section 30240(b) states:

30240(b). Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Finally, Section 30253 protects special recreational destination points such as the beach fronting the revetment and its relation to up and downcoast beaches. Section 30253 states, in part:

30253(5). New development shall: where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination



points for recreational uses.

Again, as previously detailed, the project site fronts the extremely popular 26th Avenue Beach and is immediately adjacent to the 26th Avenue public access overlook and stairway site. These areas are important coastal access destinations for residents and visitors to the area alike. Although the back beach bluffs have been degraded visually by the placement of large revetments along the beach at 26th Avenue (most of whose genesis is pre-Prop. 20 and the Coastal Act), the grandeur of the Monterey Bay crescent offshore, the up and downcoast varied shoreline, the beach sands, the remaining sandstone outcrops, and other areas of natural landform and vegetation all combine to make this a valuable and invigorating viewshed. The Commission has gone to great efforts in recent years to ensure that permitted revetments are adequately camouflaged by requiring the removal of non-native invasive plant species (like iceplant) and requiring the planting of dense screens of native bluff species (like the "Carmel creeper" ceanothus proposed here) capable of covering the upper portions of the revetments over the life of these revetments. Over time, it is expected that the back beach aesthetic at 26th Avenue Beach and elsewhere will be enhanced by virtue of these efforts as individual revetments are repaired and maintained through the Commission's regulatory process.²⁶

Thus, the site is part of a significant public beach viewshed (from the beach and areas offshore). Because it is immediately adjacent to the 26th Avenue public view overlook and (to-be-reconstructed) stairway, it is also in the overlook viewshed. Because of its special location, and because of the existing structures present currently, there are several significant visual issues with relation to the existing condition at the site and to the proposed project.

The existing cantilevered deck, the fence attached to it, and the revetment intrude significantly into the 26th Avenue overlook and stairway viewshed (blocking upcoast views), and the revetment and cantilevered deck structure further impose on the beach and offshore viewshed. A portion of the deck and fence adjacent to the 26th Avenue overlook site appears to be located in the public right-of-way.²⁷ The proposed project would continue these view impacts in some ways (like the view blockage as seen from 26th Avenue), add to them in other ways (increase rock massing in the beach viewshed, potentially concrete grouting between rocks), and decrease them in others (planters with native bluff species should cascade over the planters and screen both the base of the deck and the top of the revetment from view). In sum, though, the visual intrusion brought by the deck and fence adjacent to the 26th Avenue overlook, and the increased rock massing from even the 1.5:1 sloped revised revetment, would result in impacts inconsistent with the Coastal Act's visual policies listed above.

In addition, and in a similar manner as public recreational access, the public viewshed would be temporarily degraded during construction (both initial construction and future maintenance) and

²⁶ As previously referenced in the revetment slope discussion, the Commission has recently approved several such projects with these revegetation/camouflage requirements along 26th Avenue Beach, and other similar applications along this beach are pending.

²⁷ As shown on the submitted plans (see exhibit C). The Applicant has indicated that this may be a surveying error, and that his private structures that are in the right-of-way on the plans are actually within the Applicant's property. As of the date of this staff report, this is unresolved.



temporarily degraded between the time when rocks and/or debris make their way into the beach areas and when they are retrieved. These impacts, too, are inconsistent with the same visual access policies referenced in the preceding paragraph.

To offset these permanent and temporary impacts, the Applicant has agreed to a series of project modifications designed to reduce overall viewshed blockage and enhance overall viewshed aesthetics. This series of modifications would: ensure that all structures are located on the Applicant's property; reduce the height of the fence and the planters along the 26th Avenue right of way so that through public views are provided (see exhibit D); require that the viewshed area be kept clear of plants and/or structures that would impede public views; ensure that the below-deck planter system is continuous to avoid vegetation gaps that would reduce the effectiveness of the vegetative screen; and require the top 10 vertical feet (including below deck supports and top of revetment) be screened by native vegetation over the life of the project (see conditions of approval).

D. Cumulative Impacts

Coastal Act Section 30250(a) addresses cumulative impacts, stating in part as follows:

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located...where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. ...

Due to the revetments fronting the bluffs, the beach between Corcoran Lagoon and Moran Lake is in most cases less than 50 feet wide in summer to completely disappearing during parts of the winter. The Commission's 1995 Monterey Bay ReCAP project, or Regional Cumulative Assessment Project, estimated that over an acre of beach at 26th Avenue Beach had been covered by rock revetments.²⁸ Since such armoring fixes the bluff location and prevents beach replenishment from eroding bluffs, and in light of sea level rise and continuing shoreline erosion, it is expected that the usable beach areas here will continue to narrow over time.

The mitigations imposed here will alleviate, but cannot completely eliminate, the long-term impacts to the public both as a result of this individual project and the overall cumulative effect of it together with all the other armoring along this stretch of coast. Some of this long term impact was "inherited" by the people of the state due to the fact that much of this stretch of coast was already armored to a certain degree, including the subject site, when the coastal permitting requirements of Proposition 20 and the Coastal Act were instituted in the early 1970s. With the sea level continuing to rise, and the shoreline continuing to erode, it is expected that the beach fronting these properties, like all California beaches on which armoring is located and on which the back-beach has thus been effectively "fixed" in location, will eventually disappear over time. The State has not to date completely come to grips with this

²⁸ ReCAP estimated approximately 2,700 linear feet of revetment between Corcoran Lagoon and Pleasure Point at 26th Avenue Beach. Based on a conservative footprint estimate of 20 feet of sand beach coverage for such structures, this translates to approximately 54,000 square feet of beach covered by rock (roughly 1¼ acres).



phenomena, particularly as it relates to existing permitted and pre-Prop. 20/Coastal Act armoring such as this.

At a minimum, additional regional planning (e.g., a specific plan for addressing armoring needs and impacts along this stretch of coastline), regional planning mechanisms (e.g., a shoreline armoring management entity meant to cover the larger shoreline that includes the revetment here), and/or implementation tools (e.g., a systematic approach for identifying and addressing specific armoring impacts, like boulders migrating from revetments) may be necessary. The Applicant has agreed and is required to participate in future planning efforts that involve the revetment here (see special conditions); participation in no way binds the Applicant to a certain outcome, but ensures that the Applicant (or any future property owner) is part of any such future discourse. At this time, the Commission is unaware of any such efforts for this area of Live Oak, although efforts are underway in the Opal Cliffs area of Santa Cruz County just downcoast,²⁹ at least partially due to the Commission's findings in the 1995 Monterey Bay Regional Cumulative Assessment (or ReCAP) project.³⁰

Past such localized planning efforts, there is also a movement statewide to more comprehensively address shoreline erosion through the concept of planned (or sometimes called "managed") retreat. Planned retreat acknowledges that shoreline armoring designed to protect development along an eroding shoreline will ultimately lead to the loss of California beaches and offshore use (like surfing) areas. While the benefit of such armoring accrues to individual property owners (for whom the armoring maintains their shoreline location), the burden falls on the general public, both visitors and residents, because California's beaches are slowly being reduced as a result.³¹ The concept of planned retreat advocates that instead of allowing continued armoring, the shoreline should be allowed to retreat naturally. In this way, as the shoreline naturally erodes and sea level rises, new beaches would form (as bluffs naturally crumble and become beaches over time).³² The primary difficulty with a planned retreat strategy is that much of the armored shoreline is currently fronting development, residential and otherwise, that would eventually need to be retired (e.g., purchased, armoring (if any) and development on it removed) if the shoreline were to be allowed to retreat naturally. The planned retreat dialogue is currently in its infancy statewide, and it is unclear to what (future) extent this concept will be applied to

²⁹ Property owners and the County have begun preliminary efforts toward developing these types of regional planning tools to address the issue of shoreline armoring with a case study focusing on the Opal Cliffs portion of the Live Oak beach area just upcoast of the City of Capitola. As the Commission currently understands it, the Opal Cliffs project would focus on the removal of the rubble and rock revetments that block much of the beach access in this area, and would develop measures to sculpt and camouflage any armoring that is allowable under the Coastal Act in such a way as to mimic the natural bluff topography and vegetation. Options for building in pedestrian platforms in permitted armoring that allow for lateral access at even higher tides would also be evaluated

³⁰ In the 1995 Monterey Bay ReCAP project, the Commission recommended such a regional shoreline planning approach (i.e., by defined geographic units) for the Monterey Bay area where it was estimated that approximately 25 acres of sandy beach had been covered with shoreline armoring in the study region by 1993, most of that in Santa Cruz County.

³¹ The burden goes beyond just a lack of beach space available to use and a lack of conducive ocean conditions for recreation inasmuch as the beaches themselves are a huge draw for both local communities and the State as a whole, acting as a driver of both local and state economies. The beaches have also always been a large part of coastal California's cultural identity and social fabric; the effect of their slow (but steady) loss over time in this regard is more difficult to measure.

³² Beach formation would partly be assisted by the sand generating material in the "freed" bluffs themselves, but more importantly there would be space for the natural equilibrium between the shoreline and the ocean to establish itself and beaches formed.



development applications, such as this, in California. It is noted here only to provide relevant background context for the current application.

E. Other

Other Approvals

The project area is sometimes occupied by waters of the Monterey Bay and may require Monterey Bay National Marine Sanctuary approval. Likewise, the project may involve State Lands. In addition, a number of intervening landowners may need to consent to construction access. Finally, the project has changed in ways since it was approved by Santa Cruz County in 1998, and these changes need to be approved by them. The project is conditioned for County, Sanctuary and State Lands approvals, and consent of other land owners. See conditions of approval.

Rodents

Revetments are known to harbor rodents; particularly revetments fronting popular beach areas (due to visitors' food and garbage). Such rodent infestations in revetments are common in the Live Oak beach area. Rodents living in revetment voids can negatively impact the beach recreational experience, and can lead to serious public health problems. In this case, the Commission is unaware of any evidence indicating that there is any rodent infestation within the subject revetment. The Applicant has agreed to promptly respond to eradicate such an infestation. This approval is conditioned to require same so as to protect beach recreational users in this regard. See conditions of approval.

Other Beach Area Development and Public Rights

There has been a long and steady history of public use of the beach area fronting this site. So as not to prejudice any future evaluations on this topic, and so as to avoid a situation where this approval were described as resolving any ownership/public use issues, a condition is attached stating that the Commission's approval of this project does not constitute a waiver of any public rights which may exist on the property, and that the Applicant cannot use this approval as evidence of a waiver of same. See conditions of approval.

Future Notice

The terms and conditions of this approval are meant to be perpetual. In order to inform future owners of the requirements of the permit, and add a level of legal implementation of this fact, this approval is conditioned for a deed restriction designed to record the project conditions against the affected property. See conditions of approval.

F. Coastal Development Permit Conclusion

The project, as proposed, is inconsistent with the Coastal Act's shoreline structure, public access, recreation, and view policies as cited in these findings. There are, however, project modifications that can achieve the Applicant's reconstruction and stability objectives while also addressing public



recreational access and view concerns in a manner designed to enhance public use areas. The Applicant has consented to the project changes. Toward that end, conditions are attached that:

- Require that the revetment slope be 1.5:1 to essentially eliminate seaward encroachment of the keyway/refurbishment;
- Require that the base of the deck and the top portion of the revetment to be screened with cascading native bluff plantings over the life of the development (all non-native-invasive plants would be removed and prohibited);
- Require that the existing blufftop fence located along the deck at the property line, and any planter box seaward of the blufftop edge on the deck, be reduced in size so that upcoast views from the 26th Avenue overlook/stairway site are no longer blocked, and that this public viewshed be kept clear of obstructions over the life of the development;
- Require that all development be located on the Applicant's property (some is partially in the 26th Avenue right-of-way);
- Require an offer-to-dedicate (OTD) an easement or fee-title providing for beach recreational access to the beach area seaward of the revetment;
- Require that all drainage be collected and properly discharged, and that the discharge not be visible from public viewing areas;
- Require that construction impacts be limited, and that all beach areas and beach access points be restored immediately following construction;
- Require long-term monitoring based on as-built plans, and both require (i.e., retrieval of rock and debris seaward of the revetment) and allow routine maintenance, subject to the construction and restoration parameters for five years (where this term can be extended if there aren't changed circumstances that warrant a re-review of it);
- Require that there be no further seaward expansion of the revetment or any other structure beyond the as-built profile established;
- Require that the property owner assume all risk for development at this location;
- Require the property owner to participate in future shoreline planning efforts that may involve this stretch of coastline, where such efforts may involve consideration of a shoreline armoring management entity (meant to cover the larger shoreline that includes the revetment here), and may involve consideration of potential modifications and/or programs designed to reduce public viewshed and beach access impacts due to shoreline armoring; and
- Require that all the terms of the approval be recorded as restrictions on the affected property.



As conditioned, the Commission finds that the completed project will proportionately offset its impacts to coastal resources, and further finds that the conditioned project is the best possible outcome given the existing shoreline conditions in this area and the history at this site. The Commission finds the revised conditioned project to be consistent to the degree feasible with the Coastal Act.

6. California Environmental Quality Act (CEQA)

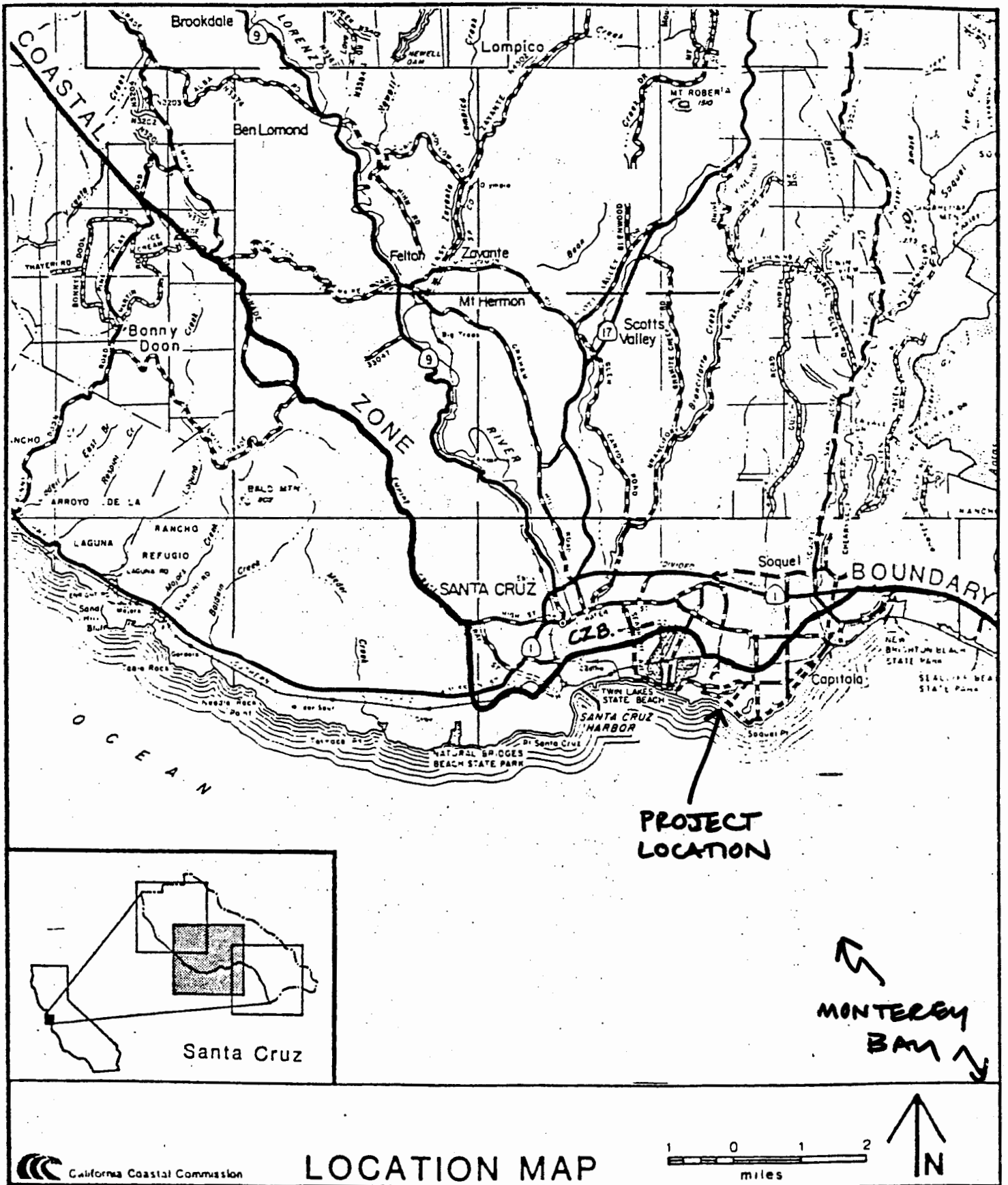
Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development 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 Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. This staff report has discussed the relevant coastal resource issues with the proposal, and has recommended appropriate suggested modifications to avoid and/or lessen any potential for adverse impacts to said resources. All public comments received to date have been addressed in the findings above. All above Coastal Act findings are incorporated herein in their entirety by reference.

As such, there are no additional feasible alternatives nor feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as modified, would have on the environment within the meaning of CEQA. Thus, if so modified, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).







CCC Exhibit A
 (page 1 of 2 pages)

CAPITOLA

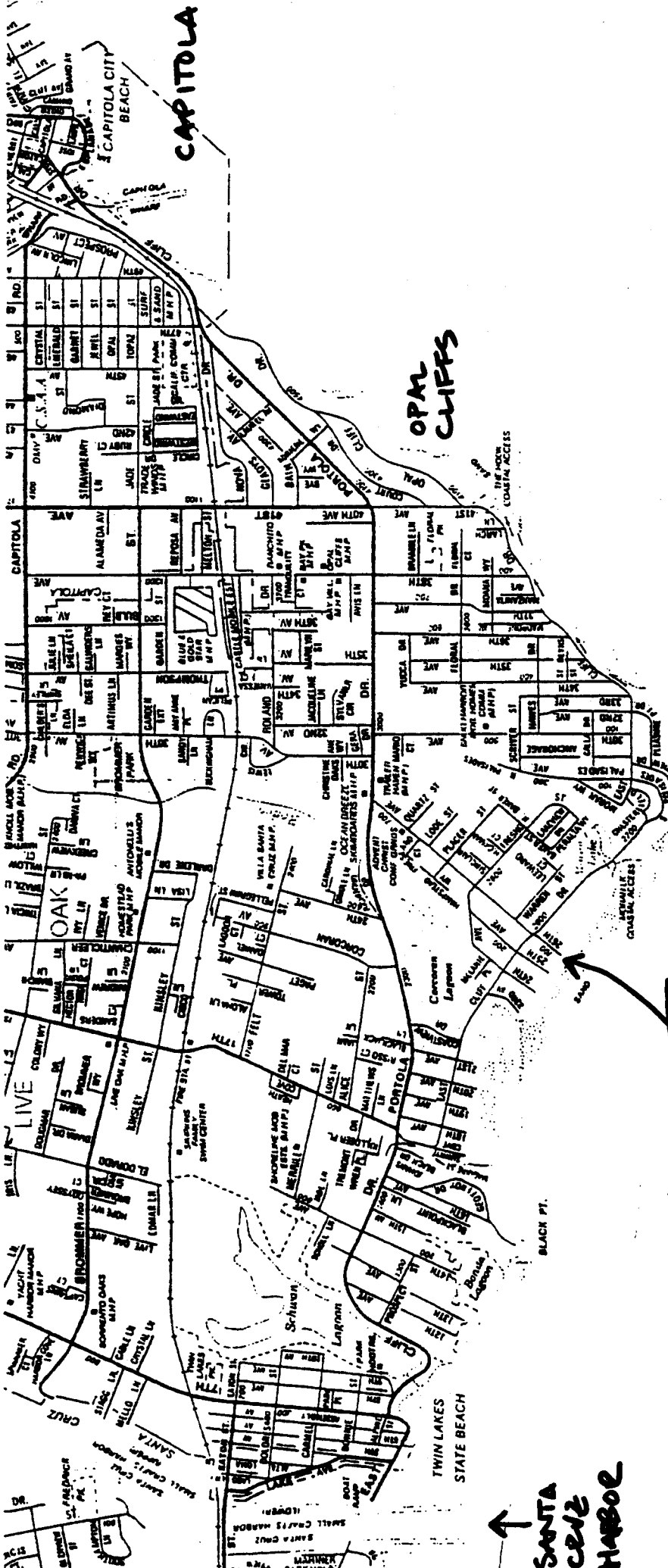
OPAL CLIFFS

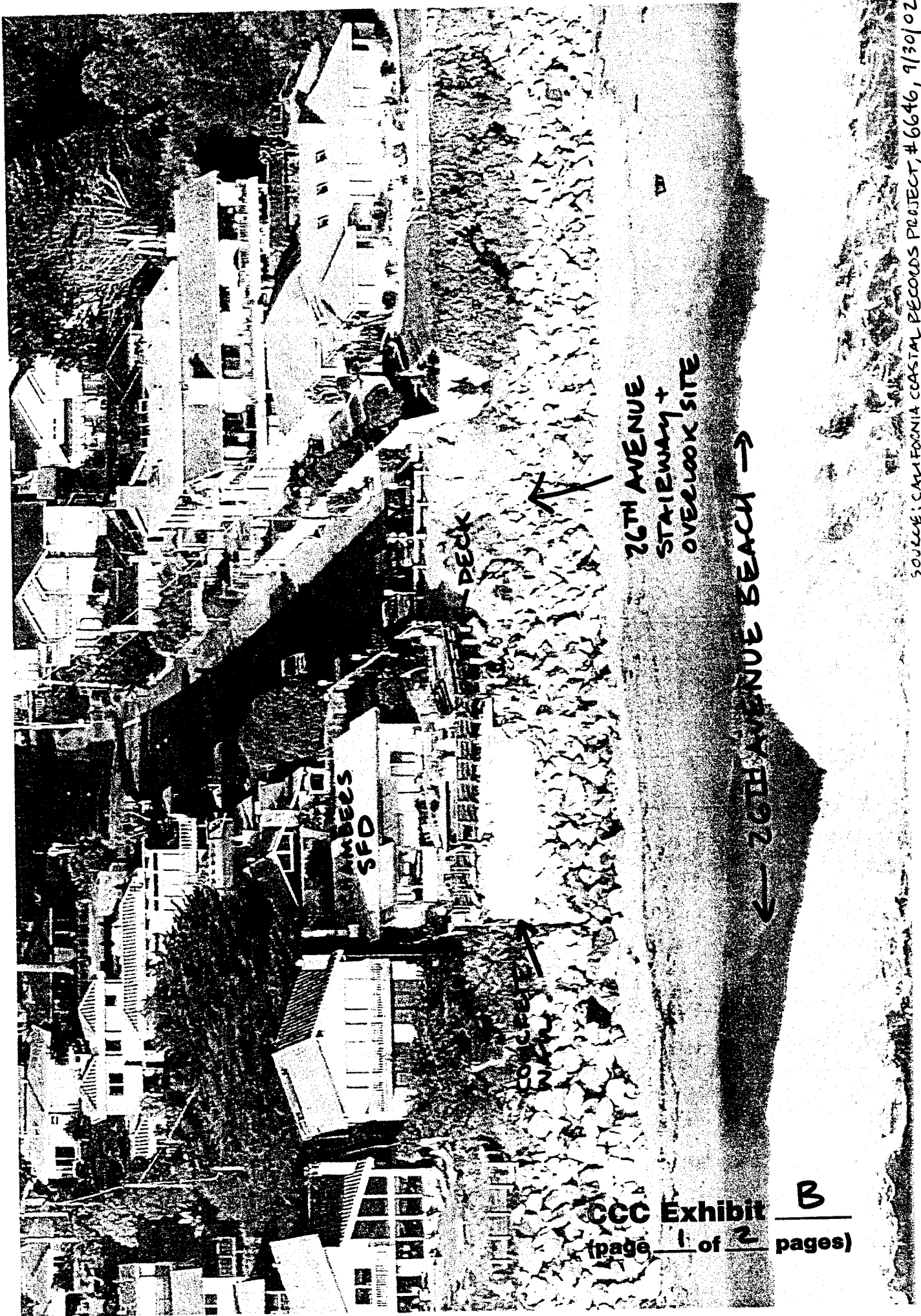
PLEASURE POINT

PROJECT LOCATION

SANTA CRUZ HARBOUR

MONTEREY BAY NATIONAL MARINE SANCTUARY





26TH AVENUE
STAIRWAY +
OVERLOOK SITE

← 26TH AVENUE BEACH →

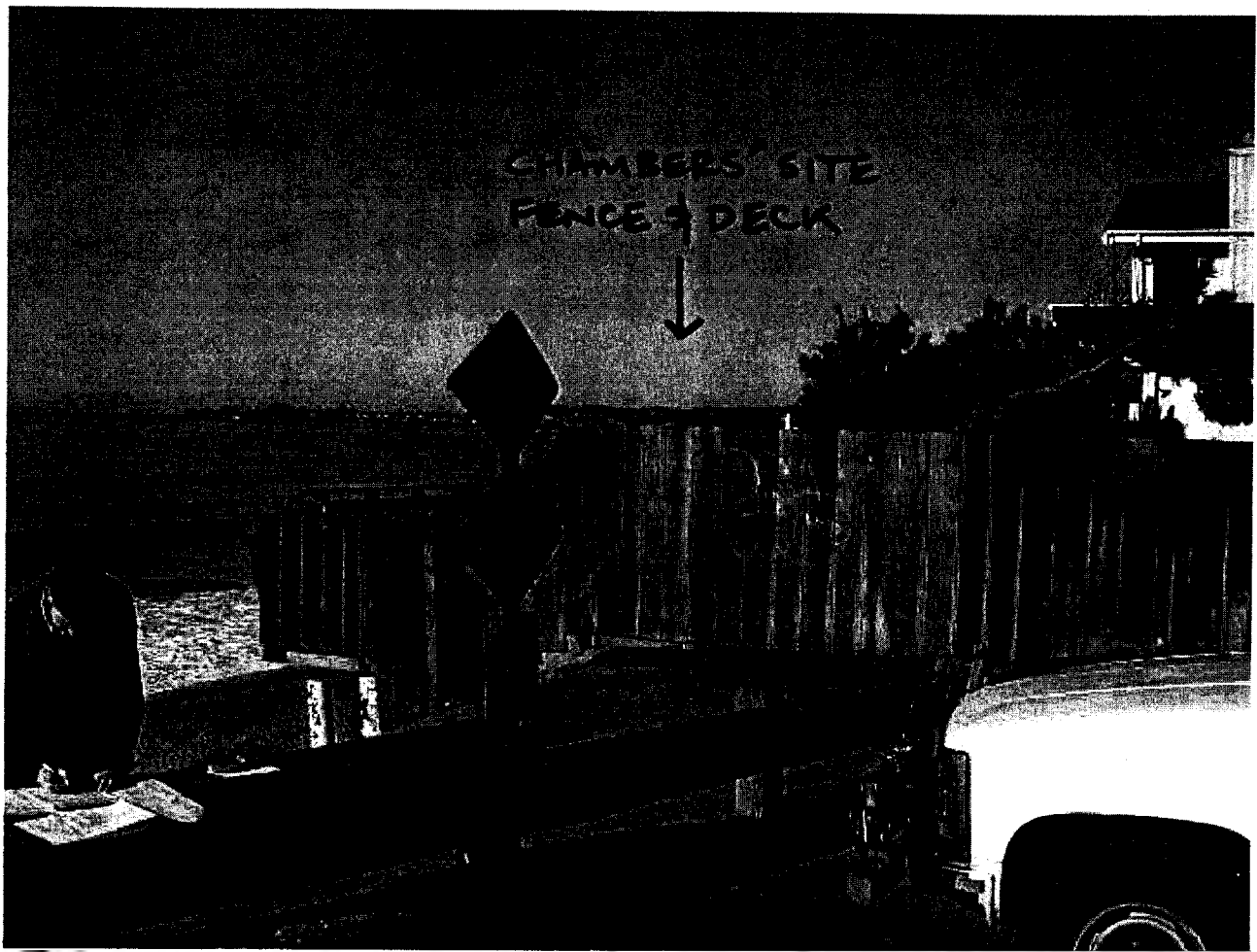
AMBEES
SFD

DECK

CCC Exhibit
(page 1 of 2

B
pages)

SOURCE: CALIFORNIA COASTAL RECORDS PROJECT, #6646, 9/30/02



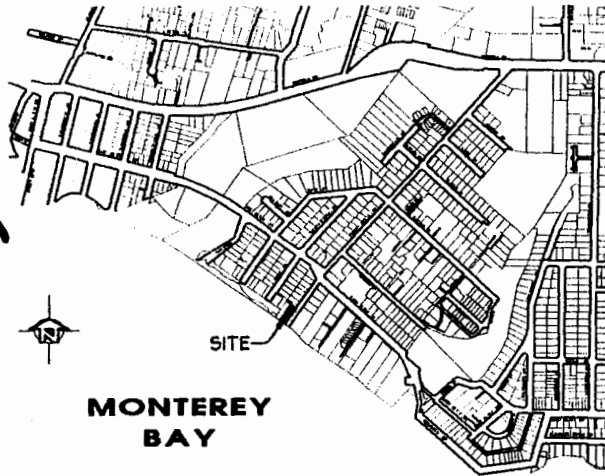
EXISTING VIEW AT 26TH AVENUE OVERLOOK SITE



Chambers Residence Beach Revetment

101 26th Ave., Santa Cruz, California

CCC Exhibit C
(page 1 of 6 pages)



Vicinity Map
NOT TO SCALE

Intent of Construction
 DISCLOSE THE PLANNED, NORMAL, AND EXCESS FLOOD RISK
 PROVISIONS REGARDING THE ABILITY TO MAINTAIN SOME REVERSED
 SPACES AND BEACHES TO BE OPEN TO THE PUBLIC
 LANDSCAPE THE BEACH AND TO BE OPEN TO THE PUBLIC
 AND FROM THE BEACH.

Drawing Index

- C1 COVER SHEET
- C2 COASTAL COMMISSION CONDITIONS OF APPROVAL
- C3 EXISTING CONDITIONS
- C4 SITE PLAN
- C5 STRUCTURAL PLAN
- C6 LANDSCAPE PLAN

Property Owner

WENDELL CHAMBERS
 101 26th AVENUE
 SANTA CRUZ, CA 95062

Civil Engineers

IPLAND ENGINEERS INC.
 100 WATER STREET, SUITE 1
 SANTA CRUZ, CA 95062

Land Surveyor

GARY IPLAND & ASSOCIATES
 100 WATER STREET, SUITE C
 SANTA CRUZ, CA 95062

Structural Engineers

IPLAND ENGINEERS INC.
 100 WATER STREET, SUITE 2
 SANTA CRUZ, CA 95062

Geotechnical Engineer

HARD, KABUNICH & ASSOCIATES
 116 EAST LAKE AVENUE
 WATSONVILLE, CA 95076
 REPORT # SC6980
 DATE: JUNE 2000

Geologist

ROGER E. JOHNSON & ASSOCIATES
 41 HANGER WAY, SUITE 5
 WATSONVILLE, CA 95076
 REPORT #C01001-95
 DATE: MARCH 31, 2000

Project Planner

RICHARD DEALE
 LAND USE PLANNING INC.
 100 DOYLE STREET
 SANTA CRUZ, CA 95062

RECEIVED

AUG 15 2003

CALIFORNIA
 COASTAL COMMISSION
 CENTRAL COAST AREA

IPLAND ENGINEERS, INC.
 CIVIL ENGINEERS

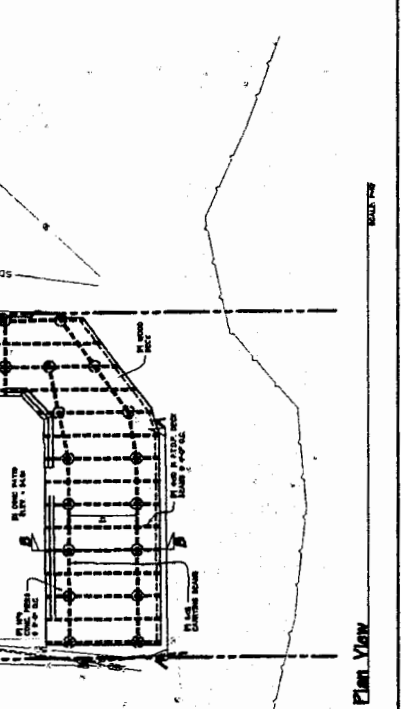
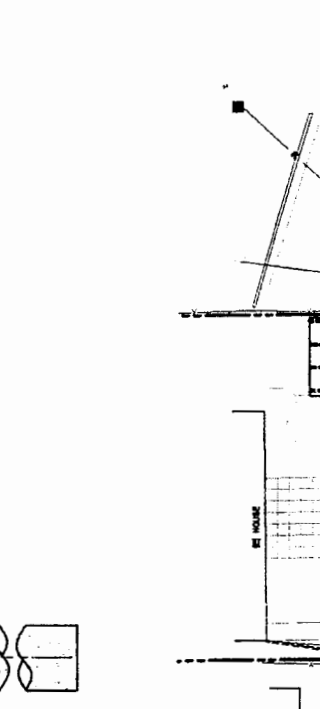
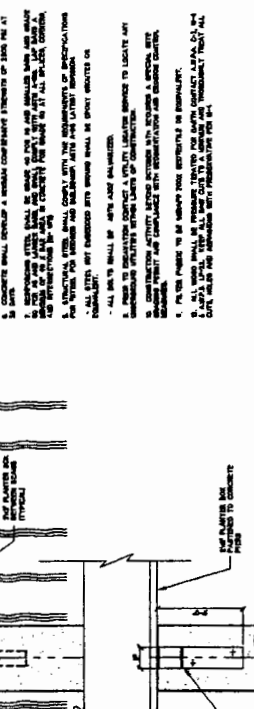
101 26th Avenue, Santa Cruz, California

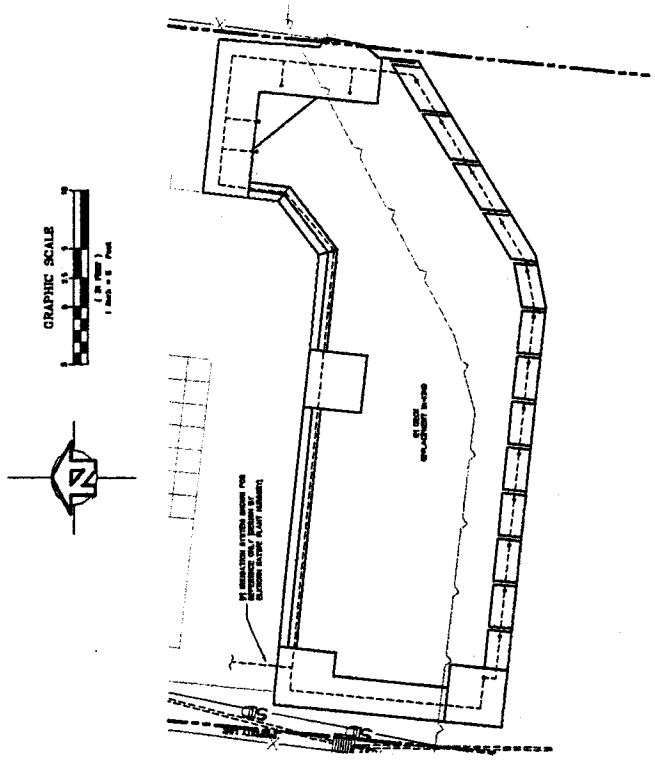
Cover Sheet
 Chambers Residence Beach Revetment
 101 26th Avenue, Santa Cruz, California

APN 028-231-08	DATE 08/15/03	SCALE As Noted	TYPED Enrique
SHEET C1			
OF 6 SHEETS			

REG. NO. 02151

- Notes**
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS AND SPECIFICATIONS OF THE CIVIL ENGINEER AND ARCHITECTURAL DESIGNER.
 2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE.
 3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 9. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.
 10. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LOCAL ORDINANCES.

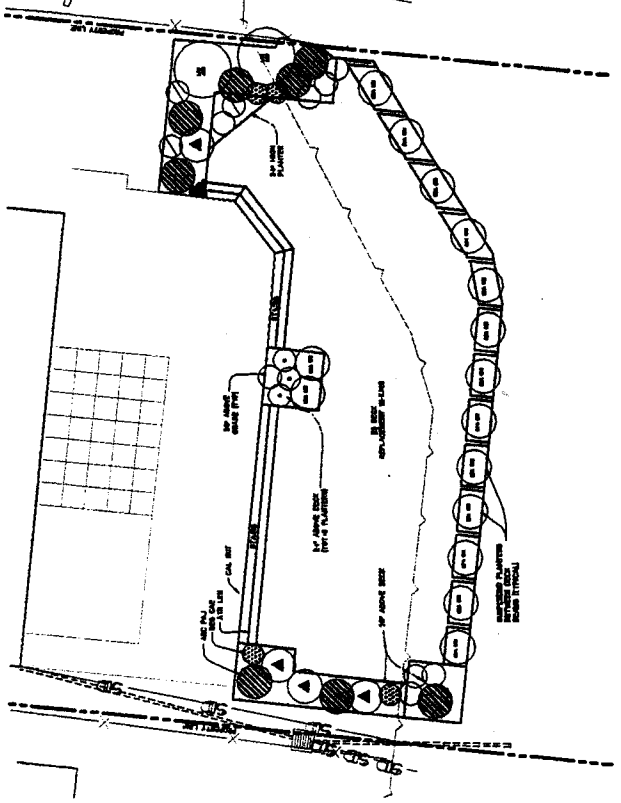




Erosion Control Notice

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA.

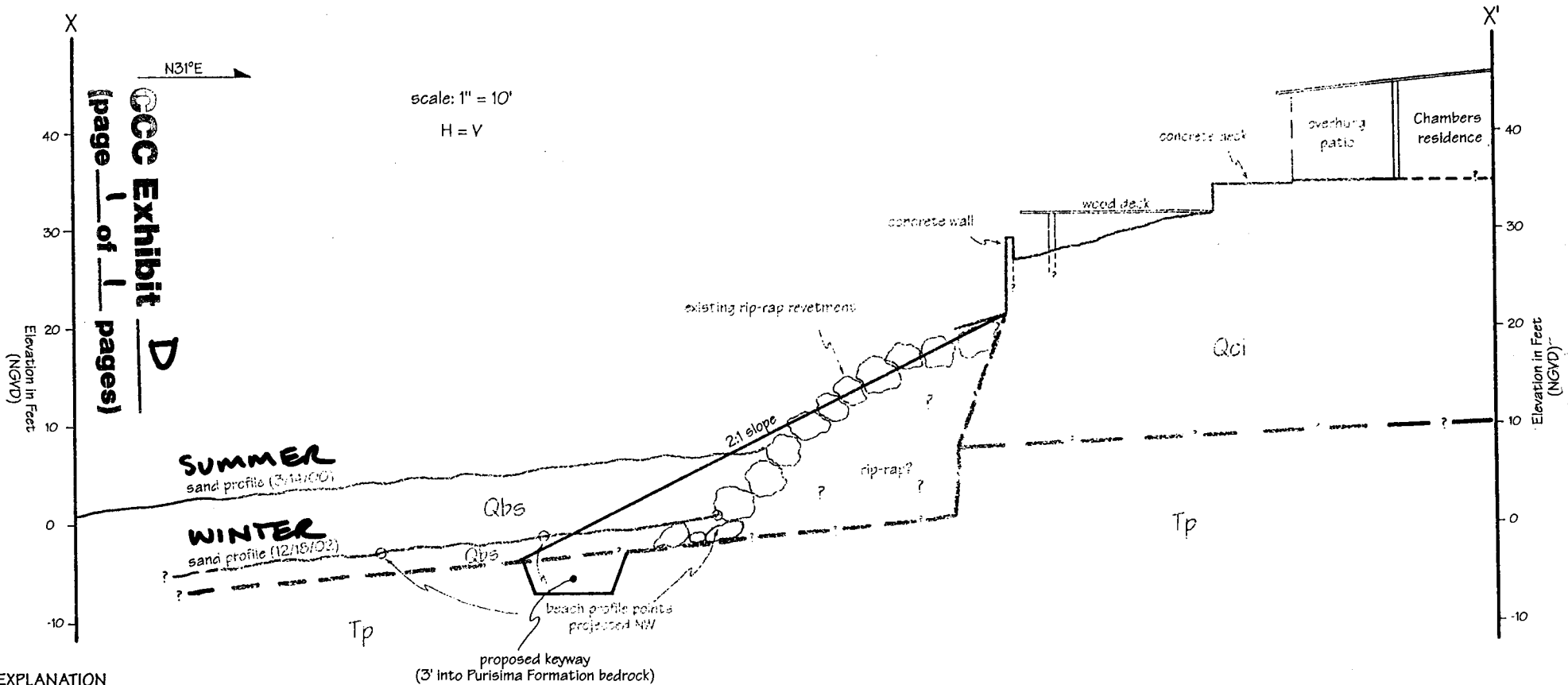
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND AGENCIES OF THE STATE OF CALIFORNIA.



Landscape Plan

SCALE: 1" = 10'-0"

SYMBOL	BOTANIC NAME	COMMON NAME	HEIGHT	WIDTH
●	ANTHEMIS PRINCEPIS	ANEMONE	1'-0"	1'-0"
○	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
△	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
□	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
○	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
○	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
○	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"
○	ANEMONE PRINCEPIS	ANEMONE	1'-0"	1'-0"



EXPLANATION

Symbols

---? Geologic contact - dashed where approximate, queried where uncertain

Earth Materials

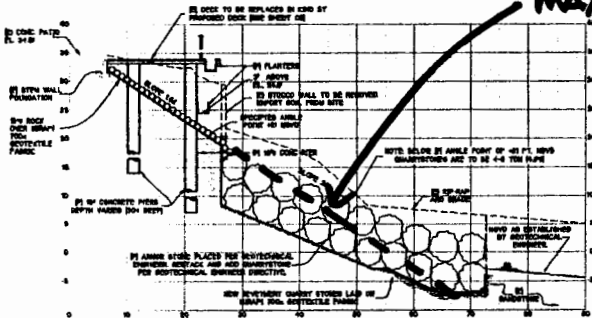
- Qbs Beach sand
- Qcl Lowest emergent coastal terrace deposits
- Tp Purisima Formation

Proposed Revetment Maintenance Chambers Property 101 26th Avenue Santa Cruz County, California	Scale: 1"=10'	Date: 2/12/03	Drawing Number Figure 7	ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 41 Hangar Way, Suite B Santa Cruz, California 95076 (831)728-7200 FAX (831)728-7218
	Drawn By: JAO/gfe	Revised:	Project # C01001 - 55	

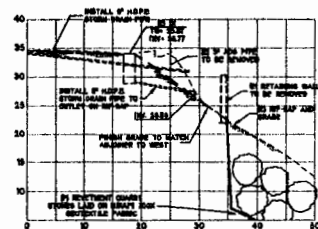
CCC Exhibit D
 (page 1 of 1 pages)



MAXIMUM EXTENSION OF RIP-RAP AT 1.5:1 SLOPE



Revstment Section A-A



Section B-B

General Notes

1. UTILIZE TYPE I CONSTRUCTION BARRICADES TO DELINEATE SITE CONSTRUCTION LIMITS.
2. CONSTRUCTION SITE SAFETY IS ESSENTIAL. THE CONTRACTOR MUST PROVIDE ALL MEASURES TO ENSURE SITE ADHERENCE TO SIGNAGE AND BEACH PATROLS.
3. DURING ANY CONSTRUCTION WORK THE CONTRACTOR IS RESPONSIBLE TO PROPERLY SECURE MATERIALS AND EQUIPMENT AND OBTAIN CONSTRUCTION LIMITS PROTECTION SIGNATURE.
4. TEMPORARY STORM WATER RUN-OFF TO BE INSTALLED ONTO THE BEACH WITHIN PROXIMITY LIMITS.
5. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER ABOUT A CONSTRUCTION STAKEHOLDERS SO THAT THEY CAN BE KEPT AWARE OF THE PROJECT'S PROGRESS.
6. CONTRACTOR MUST INSTALL A CONCRETE CURB/EDGE AS LOCATED ON THE PLAN AND DEMONSTRATE ALL AS ILLUSTRATED IN THE PLAN SHEET. THE CONTRACTOR WILL LATER PLACE A FORM CURB FOR QUALITY IMPROVEMENT PURPOSES.
7. ALL WORK SHALL COMPLY WITH THE 2004 CALIFORNIA BUILDING CODE AND OTHER APPLICABLE REGULATIONS.
8. CONTRACTOR SHALL CORRECT THE EXISTING OF PVC PIPE DRAIN LINE WITH EXISTING DRAINAGE SLOPE.
9. CONTRACTOR SHALL CORRECT IN # 10 PIPING INTO PREVIOUS DRAIN AND SLOPE THROUGH EXISTING/ADJACENT TO EXISTING OR EXISTING 8" DRAIN.
10. CONCRETE SHALL BE MADE OF A MIN. COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS @ 1" MAX. W/C @ 4" MAX. SLABS.

OCC Exhibit
 (page 1 of 1 pages)

VIEW CORRIDOR SEAWARD OF THIS LINE

BLUFFTOP FENCE RESTRICTIONS START

TO BE INSTALLED TRAFFIC BARRIER

Reference Notes Per Haro, Kaurich & Associates

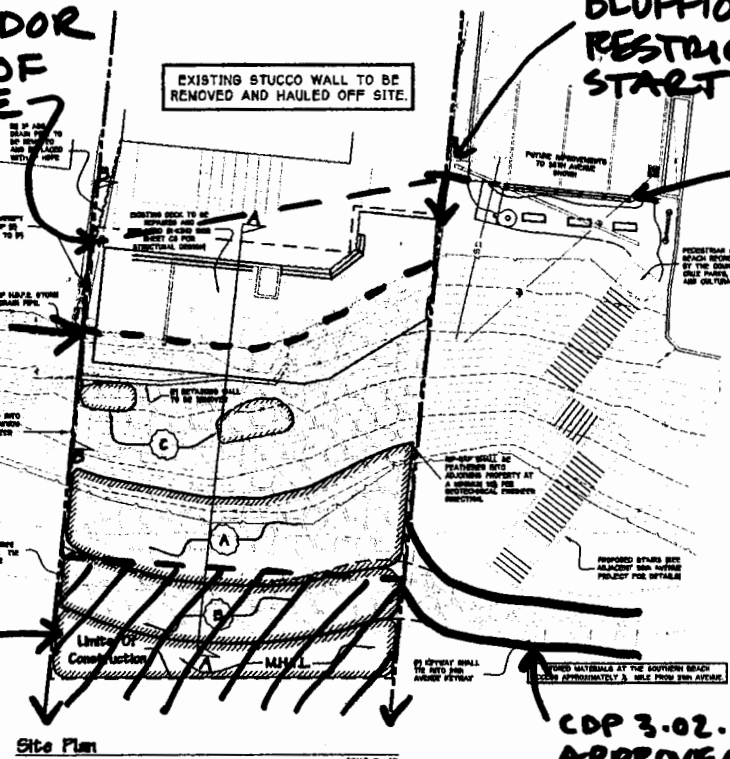
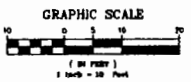
- (A) AREA OF WORK PROPOSED SHALL BE APPROXIMATELY 50% MORE THAN QUANTITIES ESTIMATED IN ORDER TO ACCOMMODATE VARIATIONS IN QUANTITIES. AT LEAST 50 TONS OF ADDITIONAL QUANTITIES SHALL BE ORDERED TO AVOID AREA W/ A FROM QUANTITY OF 30 TONS FOR TECHNICAL REASONS.
 - (B) ALL OF PROPOSED REVEAL AT LEAST 60 TONS OF 1/2 TON QUANTITIES WILL BE PLACED NEW.
 - (C) FOR AREAS BELOW SLOPE OF 1.5 H:1 V:1 QUANTITIES SHALL BE INCREASED BY AND RETAINED OVER EXISTING PAVEMENT SURFACE.
- M.M.L. APPROXIMATE LOCATION OF THE BEACH LINE 100 FEET SEVERE AS MEASURED STOP THE BEACH FROM BEING PLACED UNDER THE 100 FEET BEACH FROM THE FIELD OBSERVATIONS.

Estimated Earthwork Quantities

800 CUBIC YARDS EXCAVATION
 200 CUBIC YARDS EMBANKMENT
 BALANCE ON SITE
 ESTIMATE DOES NOT INCLUDE FOR SOIL, REMOVAL, UTILITY TRENCH VOLUMES OR ANY OTHER EXCAVATION, IF REQUIRED BY SITE CONDITIONS.
 ESTIMATE ASSUMES A 10% COMPRESSION FACTOR ON ALL FILL MATERIAL AND A 10% EXPANSION FACTOR ON ALL CUT MATERIAL.
 CONTRACTOR SHALL VERIFY SELF THAT ESTIMATE ARE CORRECT PER TO COMPLETION OF WORK.
 APPROXIMATE PER 10% OF QUANTITY QUANTITIES TO BE STORED AND BEARING AND APPROX 50% OF TOP OF PROPOSED QUANTITIES LEFT TO PREVENT THE BARRICADE. APPROXIMATE IN 10% TOP OF EXCAVATED SOIL TO BE STOCKPILED AND REUSE.

OTD AREA = ALL OF APN 028.234-08 SEAWARD OF RIP-RAP

CDP 3-02-096 APPROVED KEYWAY



Site Plan

Michael J. Kaurich
 LICENSED PROFESSIONAL ENGINEER - CIVIL
 LICENSE NO. 11595
 STATE OF CALIFORNIA

Miland ENGINEERS, INC.
 CIVIL ENGINEERING & CONSTRUCTION MANAGEMENT
 1001 26th Avenue, Santa Cruz, California
 (408) 426-2121

Site Plan
 APN 028-234-08
 SHEET: **C4** of 6 SHEETS
 DATE: 08/10/05
 SCALE: As Noted
 DESIGNED BY: [Name]
 CHECKED BY: [Name]

