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W8a

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COASTAL DEVELOPMENT PERMIT APPLICATION

Application number.....**3-03-016, Lang Revetment Maintenance**

Applicants.....Kurt & Janna Lang

Project location.....The beach and bluffs seaward and beachward of 2-2790 East Cliff Drive at 26th Avenue/Moran Lake Beach in the unincorporated Live Oak beach area of Santa Cruz County.

Project description.....Recognize emergency rip-rap revetment repair work from winter 2002-3, and provide for future maintenance work on a previously permitted, approximately 280 linear foot revetment.

File documents.....Santa Cruz County certified Local Coastal Program (LCP); California Coastal Commission coastal development permit (CDP) file 3-83-067 (Lang, 1983), permit amendment file 3-83-067-A1 (Lang, 1998), and emergency permit file 3-02-113-G (Lang, 2002); California Coastal Commission Monterey Bay ReCAP.

Staff recommendation ...**Approval with Conditions**

Summary: The Applicants propose to have an emergency permit repair from this past winter recognized, and to maintain (in the future) an existing permitted (by the Coastal Commission) revetment fronting the back beach at 26th Avenue/Moran Lake Beach in the unincorporated Live Oak area of Santa Cruz County. The project, both the emergency repair and the long-term maintenance, is designed to maintain the revetment in its previously permitted configuration, and is not to allow for expansion of its footprint and/or profile. This project is not atypical of other revetment repair/maintenance applications that the Commission has reviewed in the Santa Cruz County area in the past several years. Staff here recommends approval subject generally to the types of conditions applied by the Commission in these past cases that are designed to offset coastal resource impacts while providing for long-term permitted maintenance. The recommended conditions of approval include provisions for: maintenance to take place on an as needed basis, subject to construction and restoration criteria; no further seaward encroachment in relation to the approved revetment profile; long-term monitoring; removal of non-native landscape cover and replacement with native plantings designed to cascade over the topmost portion of the revetment for screening; drainage control; and assumption of risk by the property owners. As so conditioned, Staff recommends approval.

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I. Staff Recommendation on CDP Application

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 3-03-016 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.

II. 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. **As-Built and Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees shall submit As-Built and Final Plans (in full-size (two sets) and 11" x 17" (one set) format with a graphic scale) to the Executive Director for review and approval. The As-Built and Final Plans (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 (*Rock Riprap Shore Protection Maintenance Plan for Lang Residence* by Bowman & Williams dated received in the Coastal Commission's Central Coast District Office September 8, 2003) but shall show the following changes and clarifications to the project:

   (a) Benchmarks. The Plans shall provide for one or more permanent surveyed benchmarks inland of the revetment for use in future monitoring efforts. The 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) 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 benchmark elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD).

(b) Structures Shown. The Plans shall at a minimum identify the extent of the revetment structure and principal residential structures immediately inland of the revetment in site plan and cross-section views. There shall be at least three representative cross sections of the revetment on the following transects: southwest and seaward of the residence; south of the residence where the revetment changes direction in site plan view; and southeast of the residence. All property and parcel lines, and any other structures (including but not limited to fences and driveways) shall be identified in site plan view. The seaward paved edge of East Cliff Drive shall be shown in site plan view for the length of the eastern edge of the property.

(c) Photographs. Photographs of the as-built revetment, with the date and time of the photographs and the location of each photographic viewpoint noted on a site plan, shall be included. At a minimum, the revetment shall be photographed from East Cliff Drive northeast of the site, from the beach area located due seaward of Moran Lake, and from the beach area located due seaward of the residence.

(d) Construction Notes. That portion of the plans that refer to future maintenance and construction parameters (i.e., that section of Sheet 1 titled "Maintenance Program") shall be replaced with the Construction Plan specified in Special Condition 2 below and the future maintenance parameters noted in Special Condition 12.

The Permittees shall undertake development in accordance with the approved Plans. Any proposed changes to the approved Plans shall be reported to the Executive Director. No changes to the approved 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 Permittees shall submit a Construction Plan to the Executive Director for review and approval. The Construction Plan may be incorporated into the plans specified in special condition 1 above, or it may be submitted separately. 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 beach access points, 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 East Cliff Drive 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). 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 the County for the East Cliff Drive right-of-way, 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 Permittees 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 ANY CONSTRUCTION EPISODE, 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 ANY CONSTRUCTION EPISODE, the Permittees shall restore all beach areas and all beach access points impacted by construction activities to their pre-construction condition. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach. The Permittees 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. **Shoreline Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees shall submit a Shoreline Plan to the Executive Director for review and approval. The Shoreline Plan may be incorporated into the plans specified in special condition 1 above, or it may be submitted separately. The Shoreline Plan shall have three related and overlapping elements: a revegetation plan, an irrigation plan, and a drainage plan. These are more specifically described as follows:

   (a) Revegetation Plan. The revegetation plan shall provide for the removal of all non-native and/or invasive plant species (e.g., iceplant) currently present on, in, and/or immediately inland of the revetment, and the planting of non-invasive native species along the full linear extent of the area above the revetment in a manner designed to provide for a dense cascading screen of vegetation to completely cover the upper half (roughly 10 vertical feet) of the revetment. Soils, soil composites (e.g., a mixture of sandy loam soil and cement), and support for same (such as filter fabric or equivalent), may be placed in and/or on top of the upper portion of the revetment to provide adequate planting pockets as necessary to ensure effective and successful screening. The revegetation plan shall clearly identify in site plan view the type, size, extent and location of all native plant materials to be used as chosen from the following native planting palette (substitutions of appropriate native bluff edge plants to complement this planting palette may be allowed upon written consent from the Executive Director):

   - Achillea millefolium – yarrow
   - Artemisia californica – California sagebrush
   - Baccharis pilularis – prostrate greasewood
   - Bromus carinatus var. maritimus – seaside brome

- Ceanothus griseus var. horizontalis – "Carmel creeper"
- Ceanothus griseus var. horizontalis – "Yankee Point"
- Dudleya caespitosa – live forever
- Dudleya farinosa – live forever
- Elymus glaucus – blue wild rye
- Erigeron glaucus – seaside daisy
- Eriogonum latifolium – buckwheat
- Eriogonum parvifolium – dune buckwheat
- Eriophyllum staechadifolium – lizard tail
- Fragaria chiloensis – beach strawberry
- Grindelia stricta – gumweed
- Leymus pacificus – beach wild rye
- Mimulus aurantiacus – sticky monkey flower
- Myrica californica – wax myrtie
- Poa douglasii – maritime bluegrass
- Rhamnus californica – coffeeberry

The revegetation plan shall include maintenance and monitoring parameters, and shall require that all plants be replaced as necessary to maintain the vegetative cap and associated dense cascading screen of vegetation to completely cover the upper half (roughly 10 vertical feet) of the revetment over the life of the revetment. To allow for initial growth, the Plan shall provide that the required screening be initially achieved within at least two years of initial Plan implementation, with an interim standard that at least the top 5 vertical feet of the revetment and the area between the revetment and the edge of the yards be screened within at least one year of initial Plan implementation.

(b) Irrigation Plan. The irrigation plan shall provide for irrigation (e.g., drip emitters) as necessary to ensure that the revegetation plan is successful. All irrigation elements necessary for planting success shall be clearly identified in site plan view. All other irrigation elements present in the yard areas shall be identified.

(c) Drainage Plan. The drainage plan shall clearly identify all permanent measures to be taken to collect and direct site drainage. 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 or beachward of the blufftop edge.

The Shoreline Plan shall be developed with input from a landscape professional, and shall be submitted with evidence of the review and approval of a licensed civil engineer with experience in coastal structures and processes. The Shoreline Plan shall include maintenance and monitoring parameters designed to ensure revegetation, irrigation, and drainage success. The Shoreline Plan shall include site plans and cross-sections that clearly identify all above-described elements in relation to the approved project and all property lines.

The Shoreline Plan shall be implemented immediately upon its approval by the Executive Director. WITHIN ONE (1) MONTH OF APPROVAL OF THE SHORELINE PLAN BY THE EXECUTIVE DIRECTOR. all non-native and/or invasive plant species (e.g., iceplant) on, in, and/or immediately inland of the revetment shall be removed, all native species identified in the Plan shall be planted, and all drainage and irrigation facilities shall be installed and shall be in working order.

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

The Permittees shall notify planning staff of the Coastal Commission's Central Coast District Office when all native species identified in the Plan have been planted and all drainage and irrigation facilities have been installed and are in working order consistent with the approved Plan. Initial implementation of the Shoreline Plan shall be considered complete, and this condition satisfied, upon written indication of same from planning staff of the Coastal Commission's Central Coast District Office.

6. **Monitoring.** The Permittees shall ensure that the condition and performance of the as-built revetment 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 its future performance, and identify any structural damage requiring repair to maintain the as-built revetment profile. At a minimum, the Permittees 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 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. Each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the as-built revetment. All monitoring reports shall include a section on the revegetation, irrigation, and drainage components consistent with the parameters for monitoring, maintenance, and success established in the approved Shoreline Plan described in the Special

Condition 5 above.

7. **Shoreline Development Stipulations.** By acceptance of this permit, the Permittees acknowledge and agree, on behalf of themselves and all successors and assigns that:

   (a) No Further Seaward Encroachment. Any future development, including, but not limited to, modifications to the revetment, shall be constructed inland of, and shall be prohibited seaward of, the seaward/beachward plane of the revetment. The seaward/beachward plane of the revetment is defined by the approved (per coastal development permit 3-03-016) revetment footprint and profile as shown on the approved as-built and final plans.

   (b) Revetment Screening. The upper half (roughly 10 vertical feet) of the revetment shall be completely screened from view (as seen from the beach) by a dense cascading screen of native vegetation. A shoreline plan has been approved pursuant to coastal development permit 3-03-016 that specifies the allowed 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 screening vegetation consistent with the approved shoreline plan.

   (c) Maintenance. It is the Permittees' responsibility to maintain the revetment and vegetative screening in a structurally sound manner and its approved state. As-built and final plans have been approved pursuant to coastal development permit 3-03-016 that define the profile and footprint of the approved revetment. A shoreline plan has been approved pursuant to coastal development permit 3-03-016 that provides for vegetation, irrigation, and drainage standards and criteria. Future maintenance of the revetment as specified in special condition 12 is authorized pursuant to the parameters of coastal development permit 3-03-016, but this does not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes

   (d) 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 disposal location. As-built and final plans have been approved pursuant to coastal development permit 3-03-016 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 3-03-016. 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).

   (e) Debris Removal. The Permittees shall immediately remove all debris that may fall from areas inland of the revetment onto the revetment or the beach below.

   (f) Assumption of Risk, Waiver of Liability and Indemnity Agreement. The Permittees acknowledge and agree, on behalf of themselves 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 Permittees 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.

(g) **Future Shoreline Planning.** The Permittees agree, on behalf of themselves and all successors and assigns, to participate in future shoreline armoring planning efforts that involve the revetment approved pursuant to coastal development permit 3-03-016. 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 Permittees (nor any successors and assigns) to any particular outcome of such planning efforts, and in no way limits the ability of the Permittees (nor any successors and assigns) to express his/her viewpoint during the course of such planning efforts.

8. **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 Permittees shall not use this permit as evidence of a waiver of any public rights which may exist on the property.

9. **Rodent Removal.** If, at any time, evidence indicates that rodents are living in the voids in the revetment, then the Permittees 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.

10. **Other Agency Review.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees 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 3-03-016 have been granted by: (1) the California State Lands Commission; and (2) 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.

11. **County Consent.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, and/or authorizations (including but not limited to any encroachment permit) for the portion of the project located on the East Cliff Drive right-of-way have been granted by Santa

Cruz County. Any changes to the approved project required by the County 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.

12. **Future Maintenance.** Coastal development permit 3-03-016 authorizes future maintenance as described in this special condition. The Permittees acknowledge and agree, on behalf of themselves and all successors and assigns that: (a) it is the Permittees' 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 shoreline plan; 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. 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 Permittees 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 Permittees have 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 Permittees' 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 Permittees are 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 January 14, 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 Permittees shall submit to the Executive Director for review and approval documentation demonstrating that the Permittees have executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the special conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property. The deed restriction shall include a legal description 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.

III. Findings and Declarations

The Commission finds and declares as follows:

A. Existing Conditions

The proposed project is located on the bluffs immediately upcoast of main entrance to 26th Avenue Beach at Moran Lake 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 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 vast 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 surfing areas; internationally renowned marine research facilities and programs; special coastal communities; vast State Park lands; 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 – 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 combine to make the area a desirable place to both live and 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 alone with current 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 the vast majority of residents live within a half-hour of the coast, and many closer than that, coastal zone resources are a critical element in helping to meet these needs. Furthermore, with the shoreline itself (and its parks, beaches, trails, etc.) attracting visitors into the region, an even greater pressure is felt at coastal recreational areas 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, and with the large population centers of the San Francisco Bay area and the Silicon Valley nearby, this type of resource pressure is particularly evident in coastal Santa Cruz County.

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[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.

See Exhibit A for project location information.

Live Oak Beach Area

Live Oak represents 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, 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, offshore surfing areas, rocky tidal shelves, blufftop terraces, and coastal lagoons. 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.).[2] Given that the beaches are the largest public facility in Live Oak, this pressure will be particularly evident in the beach area.

26th Avenue/Moran Lake Beach

The project is located at 26th Avenue (also known as Moran Lake) Beach. This beach is an extremely popular recreational beach,[3] and a prime bodysurfing, skimboarding and surfing destination[4] that extends from Corcoran Lagoon upcoast to the outcroppings of Soquel Point (better known as "Pleasure Point") about 200 yards downcoast. Moran Lake County Park is just inland of East Cliff Drive from the project site, and serves to support beach and water use with public parking spaces, restrooms, showers, picnic

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

3 Historic County analyses identified an estimated average daily use of this beach of 848 persons, showing it to be the second highest beach use area in Live Oak after Twin Lakes State Beach (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, these historic figures appear to undercount 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. 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.

tables, and other Park amenities. The Park also includes an important Monarch butterfly over-wintering habitat area as well as the Lake itself that have previously been recognized by the Commission as environmentally sensitive habitat areas (ESHAs). Although this beach has been severely impacted over time by almost continuous piles of rock rip-rap extending along the backing bluffs,[5] it remains a significant public access and recreation area.

Proposed Development Site

The Applicants' site is located opposite East Cliff Drive from Moran Lake County Park and its public beach parking lot, immediately adjacent to the beach access point. The beach area adjacent to the Applicants' residence (on the southeast side) is the primary sandy beach use area associated with 26th Avenue/Moran Lake Beach due to the fact that it is the widest portion of the beach, backed not by private residences but by public East Cliff Drive. The Applicants' site is prominently visible in seaward views from East Cliff heading upcoast. These peek-a-boo views are all the more important in the Live Oak beach area given that the pattern of development is that private residences exist seaward of East Cliff Drive for the majority of its length other than at this site, the other coastal lagoon outlet locations,[6] and at Pleasure Point.

See exhibit A for a location map and an air photo of the project area. See project plans in exhibit B.

B. Project Description

The Applicants propose to have the emergency permit repair from this past winter recognized, and to maintain on an as needed basis (in the future) the permitted revetment configuration (with no expansion of its footprint and/or profile). The Applicants' existing revetment was originally permitted by the Commission in 1983 (CDP 3-83-067),[7] refurbished in 1998 (CDP amendment 3-83-067-A1), and recently restacked by emergency authorization in late 2002 (emergency permit 3-02-113-G). The revetment extends out perpendicular from East Cliff Drive toward the Monterey Bay and then wraps upcoast almost 90 degrees extending parallel to the shoreline and forming a headland of sorts. The revetment is roughly 20 feet in height sloped at a 1.5 to 1 slope and is 280 feet in length. The re-established revetment is shown in the project plans in exhibit B.

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5 Because of the revetments fronting the bluffs, the beach here 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 was covered by rock revetments. 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). 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.

6 Schwann and Corcoran Lagoons located upcoast.

7 According to CDP file 3-83-067, the site was at least partially armored under emergency permit authorization prior to the regular CDP. The characteristics of the emergency permit event (and the permit) are not, however, identified.

C. Coastal Development Permit Determination

1. Applicable Policies

Public Access, Recreation, and Views

Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. This includes protecting public visual access as well. 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.*
>
> ***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 beach and surfing 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.*

Coastal Act Section 30251 details specific public viewshed protections. Section 30251 states:

> ***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.

Finally, Section 30253 protects special recreational destination points such as the beach fronting the revetment. 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.*

Shoreline protective devices

Section 30235 of the Coastal Act:

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.*

Long term stability

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

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. ...

Policy Summary

In sum, although the maintenance and repair of existing permitted shoreline protective structures is meant to assure stability and structural integrity pursuant to the Act, Coastal Act policies protecting the adjacent recreational beach, the offshore recreational area, the beach area viewshed, and the overall shoreline visitor experience must be respected in that process.

2. Consistency Analysis

The beach area at the project site has been negatively impacted over time by the presence of the rock

revetment fronting the subject residence, as well as the cumulative impact from this revetment when considered in the context the other armoring along this stretch of this beach and the Live Oak coastline. These negative impacts include the unnatural back beach character defined by large piles of boulders, the loss of beach area given over to the boulders, the loss of beach (and beach safety) when boulders migrate, the loss of beach (and beach ambiance) when inevitable repair episodes take place, and the fixing of the back beach and its relation to overall loss of beach in the long term as the shoreline continues to erode and the sea level continues to rise over time. The beach recreational area here is one of the most popular for visitors in all of unincorporated Santa Cruz County. 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). Just inland is the County's Moran Lake Park facility that includes winding interpretive trials, parking lot, restroom, shower, and other public access amenities. The Monterey Bay National Marine Sanctuary is located directly offshore. It is within this context, and in light of the Coastal Act parameters established because of it, that individual projects must be understood and evaluated for their effect on the beach, near shore, and offshore public access and recreational experience.

In this case, the proposed project will recognize the rock refurbishment from this past winter (done to reestablish the profile of the permitted revetment). The project will also provide for subsequent episodes of additional rock placement – some potentially larger and some potentially smaller in scope than the rock placed this winter.

Such a project raises Coastal Act issues because: recreational beach area will be impacted for the duration of each construction time frame (and has been impacted from this past winter's construction episode); additional rock massing will be present in the public viewshed in the long-term; failure of the revetment will adversely affect recreational resources; and future erosion response could lead to more substantive hard armoring in the future.[8] Fortunately, these issues can be readily rectified to ensure Coastal Act consistency as follows:

A. Construction Impacts

The project will: require the movement of large equipment, workers, and supplies through the public beach and public beach access point to gain access to the revetment; 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. These impacts to public use were already inflicted during this past

[8] The project also raises issues regarding the long term loss of beach due to armoring at this location (due to the fact that the revetment has covered a portion of beach and fixed the back beach on an actively eroding shoreline, and beach area will be lost as the shoreline continues to erode and the sea level continues to rise over time). However, the shoreline at this location was "fixed" when the Commission recognized the revetment's configuration in 1983. As a result, while the issue of passive erosion and retention of bluff materials is still relevant here, its relation to the proposed maintenance project before the Commission in this application is more one of background context. Although clearly relevant, and important to understand, fixing the back beach and its relation to the long-term loss of beach due to passive erosion is not clearly an impact of this project for which a sufficient nexus is present to address this impact.

winter's construction episode. These 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. A construction plan is required for this purpose (see special condition 2). Even with these containment provisions, however, the public will bear (and has borne) the burden of the negative construction impacts associated with construction on this very popular beach. Because this project will allow for multiple such construction episodes, some potentially larger than the episode for this past winter, these impacts will be correspondingly multiplied.

Although the beach area can and must be restored to their original configuration immediately following construction to limit these impacts (see special condition 4), the other temporary construction impacts (the loss of beach space, and the degradation of beach recreational experience and viewshed), require some form of compensatory mitigation. Unfortunately, there doesn't currently exist a formal program in this area for addressing such impacts in a systematic way (e.g., an in-lieu fee to be applied to beach access enhancements in the area). That said, there are other project impacts for which direct mitigation is required (see below). When the impacts are considered together, an appropriate roughly proportional mitigation can be applied (see requirements below).

B. Other Recreational Beach and Facility Impacts

Revetments are notoriously unstable, particularly when they are placed directly atop sand (as is the case here), and not keyed into more stable bedrock. They are prone to slumping, and individual rock movement. This can be exacerbated by storm events. As evidenced by the additional rock that was imported this past winter to recreate the permitted profile, the rock that is placed oftentimes moves away from the revetment. Sometimes this movement is obvious, as in the case when a rock boulder is separated from the remainder of the engineered stack and is resting stop the beach sand. Other times this movement is less obvious, as when boulders migrate under sand into beach recreational areas and even offshore. Although there are long-term structural stability issues associated with this (see also stability findings below), rocks that migrate can negatively impact beach recreational use and facilities. This impact can be due to displacement (where 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 beach accessway, East Cliff Drive, or Moran Lake County Park facilities) when such rocks are thrown landward in storm events, or combinations of each. In each case, the loose rock also negatively impacts the beach area aesthetics. These impacts are magnified at this location because the fact that this is a prime public 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. 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). Prior to the

restacking this past winter, the revetment had slumped and covered beach area and led to these types of impacts for an indeterminate period of time.

Unfortunately, these impacts, though clear analytically (and obvious due to the fact that rock is continually brought in to augment revetments, including this one), are difficult to quantify. It is unknown, for example, where the rocks that were replaced this past winter are currently located. These rocks are likely in the beach area, under the sand or in the surf zone, but this is not known for certain. Nor is it easily determined. It can be assumed, however, that some portion of these rocks will lead to the types of negative impacts described above as they are exposed and/or moved by storms. Because this project will allow for multiple such augmentation episodes, some potentially larger than the episode for this winter, these impacts will be correspondingly multiplied.

Unfortunately, as with construction impacts, there doesn't currently exist a formal program for measuring and addressing these impacts in a systematic way.[9] Of course, the project must be conditioned for the timely retrieval of migrated rocks to reduce these impacts (see special conditions), but specifying appropriate mitigation for the beach and offshore recreational impacts due to the migrated rocks is more difficult. That said, there are other project impacts for which direct mitigation is required (see below). When the impacts are considered together, an appropriate roughly proportional mitigation can be applied (see requirements below).[10]

C. Rock Massing in the Public Viewshed

In addition to the above impacts, the project also adversely affects the overall public viewshed and aesthetic over the long term by introducing additional large rock into the back beach area. Because this project will allow for multiple such augmentation episodes, some potentially larger than the episode for this past winter, these impacts will be correspondingly multiplied. The long-term result will be an ever more imposing and unnatural (compared to the natural bluff landforms in this area) rock boulder facade in the back beach area. In addition, the site is prominent in the foreground of the ocean view as seen from northbound (heading upcoast) East Cliff Drive. As previously stated, this ocean view is one of very few from the first through public road to be had in coastal Live Oak and its value is magnified as a result. The rock massing will incrementally diminish the value of this important viewshed. Absent some form of effective camouflaging, this will be a significant long-term burden borne by the public, with the benefit from the rock all to the private landowner.

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[9] There has been some discussion of requiring CDP permittees to track individual boulders placed in some way to both ease retrieval, and to quantify (for mitigation purposes) permittees' contribution to large rock in recreational beach environments. These discussions have not yet resulted in any programmatic tools for addressing this issue.

[10] Note that these mitigation requirements do not address the issue of the potential for the rocks to adversely impact public beach facilities (such as those present at Moran Lake County Park). This impact is both difficult to measure, and difficult to mitigate. In the case where such a facility were damaged in a storm, it can be difficult to know for sure whether it was damaged by rock or some other debris, or by the storm itself. Even if such damage were conclusively shown to be from a large rock, it would be difficult to determine with certainty what percentage of the damage was due to the rock, and where the rock came from (e.g., from this revetment or other rock historically placed nearby). This type of impact needs to be addressed through development of a better programmatic mitigation framework for addressing this potential impact; a framework that appears to be outside the scope of this project at this time, and thus it is not addressed here.

Although the existing landscape cover provides some visual relief, iceplant contributes to the incremental alteration of the natural bluff landform and vegetation. Furthermore, iceplant is an invasive landscape species with a shallow root system that does not help to solidify soils, but rather can lead to instability when the weight of the plant matter above grade becomes too heavy (for example, during storm events) and causes the plant material to topple over (bringing with it soils). Long-rooted non-invasive native plant species should be used for this purpose.[11] In a bluff setting, these species can help to stabilize bluff soils, minimize irrigation of the bluff (again helping to stabilize the bluff), and can help to avoid failure and sloughing in some cases. These native species also help to create a more natural back beach vegetation aesthetic because the species are natural to the bluffs in this area.

Therefore, to mitigate for the negative construction viewshed impacts (see above), to mitigate for the beach viewshed degradation due to any rock migration (before it is retrieved), and to mitigate for the long-term impact of additional rock massing in the public viewshed, and to enhance the natural landform (for scenic value) and stability (see also "Long-Term Stability" section that follows), the Applicants must eradicate non-native and invasive plant species, replant with appropriate native species, and achieve and maintain vegetation performance standards for a long-term cascading planting screen to cover the upper half (roughly 10 vertical feet) of the revetment for the life of the project (see special conditions 5 and 7). Given the height of the revetment, such screening should provide effective revetment camouflaging during most times of the year, particularly in the summer months when the sandy beach elevation is higher.[12]

D. No Seaward Encroachment

Pursuant to Coastal Act Section 30253, development is to be designed, sited, and built to allow natural shoreline processes to occur without creating a need for additional more substantive armoring. Coastal development permittees for new shorefront development thus are essentially 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, sand supply, visual resources, and natural landforms, and that the public will not be held responsible for any future stability problems. This commitment was made when the CDP was granted in 1983. Coastal Act Section 30253 requires that the current project, like the original project before it, assure structural stability without the need for additional armoring.

The revetment configuration, which would be maintained at a 1.5:1 slope, is consistent with the general practice for such revetments along Santa Cruz County's shoreline, and consistent with generally

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[11] Non-native invasive plants invade native habitat areas and vastly alter the ecological landscape by out-competing and excluding native plants and animals; altering nutrient cycles, hydrology, and wildfire frequencies, and hybridizing. Rare species are particularly vulnerable to the changes brought about by non-native invaders. The most effective and efficient way to deal with weedy species is to prevent invasions. Preventing invasion is of greater conservation benefit in the long run than the far more costly and difficult efforts to control a widespread pest species.

[12] Extending the screening further down slope does not appear feasible at this time due to the lack of available soil areas for plantings, and the increased potential for the loss of materials in the lower revetment area during winter storm events.

accepted engineering principals for revetments.[13] The existing armoring structure here has basically fixed the back beach at the revetment location and halted shoreline retreat. Thus, it is not anticipated that additional rock seaward of the revetment profile will be necessary in the future due to the fact that the residence is being protected consistent with the general standards for armoring along this stretch of coast. Such potential seaward encroachment would give rise to another level of potential Coastal Act inconsistency inasmuch as it would occupy recreational sandy beach and intensify the amount of rock within the beach area public viewshed; in other words, all of the above described impacts in this case would be present as would the additional impact of the loss of existing sandy beach area. Further, to allow a project that would itself require additional armoring seaward of that existing revetment would not be consistent with Section 30253 because stability and structural integrity must be assured without reliance on future armoring.

In addition, the area located on the beach and ocean side of the revetment is part of an OTD for beach access.[14] Encroachment into this area would also be inconsistent with the OTD.

Therefore, to mitigate against the possibility that addition armoring is installed seaward of the revetment and in the OTD area, to mitigate for the impacts on beach recreational use due to construction (both loss of useable beach area and degradation of beach going experience), to mitigate for the impacts on beach recreational use due to rock migration (both loss of beach space and degradation of beach recreational area), development (including maintenance per this permit and any other future development) shall be prohibited seaward of the existing permitted footprint and profile of the permitted revetment (see special condition 7). This applies to the wedge of rock in a 1.5:1 slope making up the revetment profile (in cross-section) as well as the seaward toe itself (in site plan). In other words, at no time shall additional rock and/or other development be allowed seaward of any point on the revetment profile.[15]

E. Monitoring, Maintenance, and Long-Term Stability

The revetment is located within a dynamic shoreline environment. Moreover, with global warming and sea level rise,[16] increased wave heights and wave energy are likewise expected. Along much of the

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[13] The Applicants' consulting civil engineer has also certified the plans.

[14] The Applicants' property boundary encompasses about half of the sandy beach area located opposite East Cliff Drive from Moran Lake and wrapping to the northwest. When the Commission approved the revetment in 1983, an OTD was required that covered that portion of the Applicant's property on the beach and ocean side of the revetment. The Applicants' recorded the OTD as required, but the offer has not been accepted as of the date of this staff report (although Santa Cruz County is in the process of making arrangements to accept this beach easement). The OTD is currently scheduled to expire on July 22, 2004.

[15] This point is made so as to avoid any future confusion should it be argued that the toe of the revetment in site plan view by itself defines the line past which rock cannot be placed. Using this incorrect interpretation, an applicant could argue that additional armoring and/or other development could be placed on top of the approved revetment slope so long as it didn't go seaward of the toe. Such placement would lead to even more substantive armoring and/or other development in the back beach placed at a steep and unstable slope (i.e., in excess of the 1.5:1 slope approved). Such incorrect interpretation could also lead to a scenario where a vertical seawall is proposed at the toe, with the area inland of the wall (i.e., the existing revetment area) backfilled for private use. Neither are allowed here.

[16] Sea level has been rising slightly for many years. In the Monterey Bay area, the trend for sea level rise for the past 25 years has been an increase resulting in a 100 year rate of nearly 1 foot per 100 years (NOAA; National Ocean Service). Also, 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.

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

A second concern with global warming and sea level rise is that the climatic changes could cause changes to the storm patterns and wave climate for the entire coast. As water elevations change, the transformation of waves from deep water will be altered and points of energy convergence and divergence could shift. The new locations of energy convergence would become the new erosion "hot spots" while the divergence points may experience accretion or stability. It is highly likely that portions of the coast will experience more frequent storms and the historic "100-year storm" may occur every 10 to 25 years. For most of California, the 1982/83 El Niño event has been considered the "100-year storm." Certain areas may be exposed to storms comparable to the 1982/83 El Niño storms every few decades.

The frequency of major storm events in the Monterey Bay has been documented to be roughly one every 1.5 years, and the frequency of such storms causing significant damage roughly one every 5.3 years.[17] 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.

If the revetment was damaged in the future (e.g. as a result of wave action, storms, landsliding, etc.) it could threaten the stability of the inland residential site, which could lead to need for more bluff alteration and/or additional or more substantive armoring. In addition, any boulders that separate themselves from the main revetment would adversely affect beach recreational use, and potentially beach recreational facilities (as described above). Loose boulders could also act to damage either the revetment or the inland home or other structures and facilities if they are moved around during storm events. In addition, if drainage isn't adequately contained and controlled, it can lead to soil instability inland of the revetment and potential undermining/collapse of the revetment itself.

Therefore, to mitigate (i.e., avoid) these potential impacts to coastal access and long-term stability (residential and otherwise) to the degree feasible, the condition of the revetment in its approved state

[17] *Geologic Investigation Chambers Property* by Rogers E. Johnson & Associates, dated March 31, 2003.

must be maintained for the life of the revetment, and mitigation measures are required to ensure that this is the case. Toward this end, any boulders that migrate seaward of the revetment must be promptly retrieved and restacked or removed off-site to limit the extent of their negative impacts (as discussed above). Drainage must be controlled to ensure overall stability. Further, in order to ensure that the Applicants and the Commission know when repairs or maintenance are required, the Applicants must monitor the condition of the revetment over the long term. The monitoring will ensure that the Applicants and the Commission are aware of any damage to the revetment and can determine whether repairs or other actions are necessary to maintain the revetment in its approved state (and avoid emergency situations). Finally, to ensure clarity for permit implementation and monitoring, and to avoid undue interpretation, future monitoring and maintenance activities must be understood in relation to a clear as-built revetment footprint and profile.

Thus, special conditions are attached to this approval for the submittal of final as-built plans (to define the footprint and profile of the permitted structure) with surveyed reference points to assist in evaluation of future proposals at this site (see special condition 1), and to provide for drainage, irrigation, and vegetation (see also previous finding) parameters for the area at the top of the revetment (see special condition 5). For monitoring, the Applicants are responsible for ensuring the revetment is regularly monitored by a by a licensed civil engineer with experience in coastal structures and processes, and are required to submit a monitoring report on five year intervals that evaluates the condition and performance of the revetment, and to submit the report with recommendations, if any, for necessary maintenance, repair, changes or modifications to the project (see special condition 6). The Applicants are responsible for promptly retrieving and restacking (or removing off-site) any boulders that migrate seaward of the existing revetment (see special conditions 7 and 12). All requirements must be recorded as property restrictions to ensure long-term compliance, and to ensure that any future landowners are clearly notified of these commitments (see special condition 13). Future maintenance events are allowed consistent with all other requirements of this approval for a five-year period, and this 5 year period can be extended as long as there aren't any 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 (see special condition 12).

Finally, the Commission notes that an important component of long-term stability for revetments 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 and bedrock. 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 (as discussed above). 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 makes its way. Although all rock revetments require substantial

maintenance, an un-keyed revetment will require relatively more maintenance than a keyed revetment, and thus have more of an impact to beach recreational use. These stability issues can also 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.

Although the Commission is approving maintenance of an unkeyed revetment here, the Applicant is encouraged to pursue project modifications in the future that are designed to construct a keyway into competent bedrock to support and "lock" the base of the revetment. Any such keyway should not extend the revetment further onto the beach or towards the ocean than the profile of what exists currently. To accomplish this, it may be necessary to excavate a portion of the base of the bluff to provide adequate space for the keyway. Such landform alteration would appear to be appropriate in this case if it could avoid expansion of the revetment into significant public use areas while at the same time providing for enhanced revetment stability.

F. Assumption of Risk

The experience of the Commission 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, landslides, or other such occurrences. Oceanfront 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- and no-interest loans, grants, subsidies, direct assistance, etc.) in the millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding to the extent feasible placing the economic burden on the people of the state for damages, the Commission has regularly required that Applicants acknowledge a site's coastal hazard risks and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Such was the case here when the revetment was originally approved by the Commission in 1983.

There are inherent risks associated with development on and around revetments and eroding bluffs in a dynamic coastal bluff environment; this applies to the revetment maintenance proposed as well as to the development landward of the revetment. The subject site is likely to be affected by shoreline erosion in the future. Although the Commission has sought to minimize the risks associated with the development proposed in this application, the risks cannot be eliminated entirely. Given that the Applicants have chosen to pursue and maintain development at this land-sea interface despite these risks, the Applicants must assume these risks. Accordingly, this approval is conditioned for the landowner to assume all risks for developing at this location and to indemnify the Commission against any claims for damages (see special condition 7).

G. Other Beach Area Development and Public Rights

The property ownership pattern at this location is such that a portion of the sandy beach area seaward of

the revetment, as well as that under the revetment, is held in fee-title by the property owner.[18] The State Lands Commission has not made a formal determination for this stretch of coast, but has indicated in the past that it doesn't appear that state lands are involved with this revetment.[19] However, this State Lands determination is from the 1983 permit action and thus over twenty years old. This project is conditioned for an updated State Lands determination to ensure that any State-owned land issues (like lease fees, etc.) are addressed at this site (see special condition 10).

There have been issues at some Santa Cruz County beach areas with similar private fee-title characteristics where inland property owners have posted signs on the beach that restrict public use of it (e.g., most recently at Beach Drive near Hidden Beach in south Santa Cruz County), and have attempted to enforce them (e.g., with private security). The Commission considers the placement of such signs and the implementation of any such use restrictions to be development requiring a coastal development permit from the Commission. Although each case must be evaluated on its own merits and set of facts, it is noted that the Commission is not generally supportive of such signs and use restrictions because, at a minimum: (1) they negatively impact the beach viewshed; (2) they are a physical impediment to beach recreational use; and (3) they interfere with beach recreational use (to greater and lesser degrees depending on the sign text and the nature of the enforcement of it). In this case, there are no such signs nor use restrictions (nor associated enforcement), and none are proposed in this application. This approval includes a prohibition on development seaward or beachward of the revetment, and thus the existing status quo (without beach area signs, fences, etc) will be maintained as such development will be prohibited in the future (see special conditions 7). As a result, there is no issue in this regard with respect to this application.

In any case, there has been a long and steady history of public use of the beach area here. There has also been a history of public use of the bluff area nearest to East Cliff Drive and an informal trail extending atop the revetment. So as not to prejudice any future evaluations on this topic, and so as to avoid a situation where this revetment maintenance 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 Applicants cannot use this approval as evidence of a waiver of same (see special condition 8).

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[18] As previously indicated, the area seaward and beach ward of the revetment is subject to an OTD. Note that due to the ambulatory nature of beach sand, and the fact that sand in a summer beach profile is generally at a higher elevation than sand in a winter beach profile, the edge of the OTD where it intersects the revetment shifts with the sand. In other words, the OTD area extends seaward and beachward from the toe of the revetment where the "toe" in this sense is where the revetment intersects beach sand. If the "toe" were static in relation to the OTD area (i.e., the OTD was measured only from the edge of permitted rock in site plan view), then there would be an area inland of it when sand covers the base of the revetment not subject to the OTD. Such an interpretation is inconsistent with the purpose of the OTD, and is not the Commission's understanding of this area. This note is provided here to clarify this issue should there be questions of interpretation on this point. In sum, the Commission's understanding of the edge of the OTD area (where it intersects the revetment) is that it is ambulatory in site plan view, and that the OTD area always includes any beach areas on the beach and ocean side of the revetment profile. The Commission is unaware of any contrary information or claims in this regard, including on behalf of the project Applicant, and has relied on this understanding in the evaluation of this proposed project for Coastal Act conformance.

[19] As usual, State Lands has not waived any right, title, or interest of the State with regard to this property, and reserves the right to conclude differently should further facts and evaluation dictate.

Finally, a small portion of the revetment (about 400 square feet) is located on the East Cliff Drive right-of-way owned by the County. It was permitted in this location originally in 1983. It is not clear that the County has ever consented to the use of the right-of-way in this manner, by encroachment permit or otherwise. This approval is conditioned for evidence of County consent to allow the revetment to be located partially on the East Cliff Drive right-of-way (see special condition 11).

H. MBNMS Approval

The project area is sometimes occupied by waters of the Monterey Bay and may require Monterey Bay National Marine Sanctuary approval. The project is conditioned for Sanctuary approval. See conditions of approval.

I. Other Land Owners

Intervening and/or adjacent landowners (like Santa Cruz County in the case of the East Cliff Drive right-of-way or the beach and beach access point) may need to consent to construction access. The project is conditioned for the consent of other involved land owners. See conditions of approval.

J. Rodents

Revetments are known to harbor rodents; this is particularly the case for revetments fronting popular beach areas (due to visitors' food and garbage). In the Live Oak area of Santa Cruz County, such rodent infestations in revetments are quite common. Such rodents negatively impact the beach recreational experience, and can lead to serious public health problems. Rodents have historically been present in the subject revetment, although it is not known whether they are still present. This approval is conditioned to require that the Applicants take reasonable action to eliminate any such rodent colonization consistent with generally accepted professional pest control methods that also ensure the health and safety of the public so as to protect beach recreational users and the Applicants in this regard. See conditions of approval.

K. 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.

L. 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. ...*

As indicated previously, and 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.[20] 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, 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 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. To address cumulative impact issues, the Applicants are required to participate in future planning efforts that involve the revetment here (see special conditions); participation in no way binds the property owners to a certain outcome, but ensures that affected 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,[21] at least partially due to the Commission's findings in the 1995 Monterey Bay Regional Cumulative Assessment (or ReCAP) project.[22]

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.

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[20] 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).

[21] 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

[22] 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.

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.[23] 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).[24] 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 development applications, such as this, in California. It is noted here only to provide relevant background context for the current application.

M. Coastal Act Consistency Conclusion

Although the project in some ways provides for fairly straight-forward revetment repair, it includes impacts to beach recreational resources that must be properly mitigated, and it must not itself require additional more substantive armoring for the Commission to find the project consistent with the Coastal Act policies cited herein. Thus special conditions are included to define construction parameters, to restore the beach area after construction, to ensure the project is properly monitored and maintained over time, to provide for a native plant vegetated screen across the top of the revetment, to ensure that there will be no current or future seaward encroachment of rock or other development, and to record these restrictions on the property to ensure that any future landowners are made aware of the requirements applicable to the revetment (see special conditions).

3. 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

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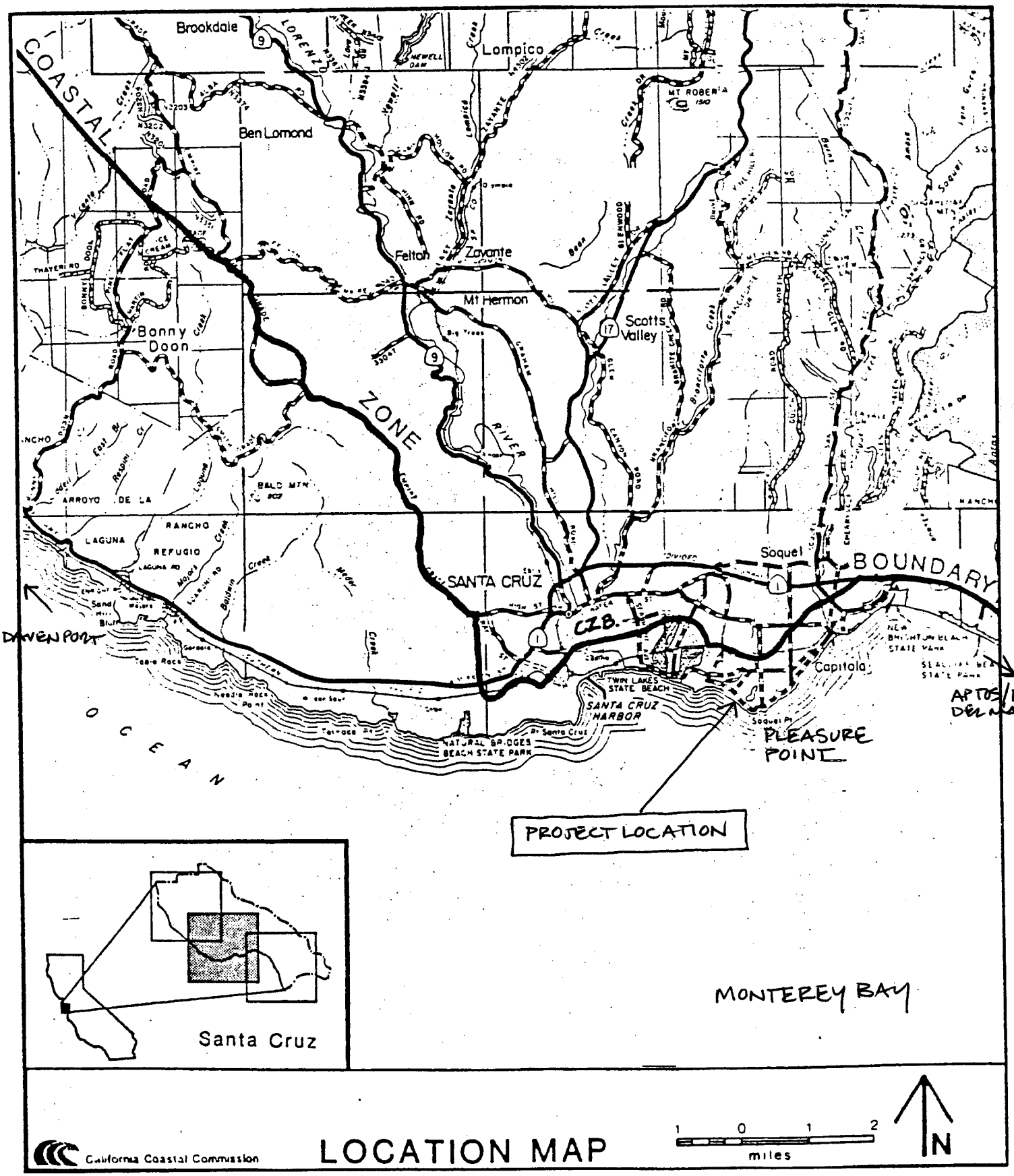
[23] The burden goes beyond just a lack of beach space available to use and a lack of conducive ocean conditions for recreation inasmuch as the beaches themselves are a huge draw for both local communities and the State as a whole, acting as a driver of both local and state economies. The beaches have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

[24] 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.

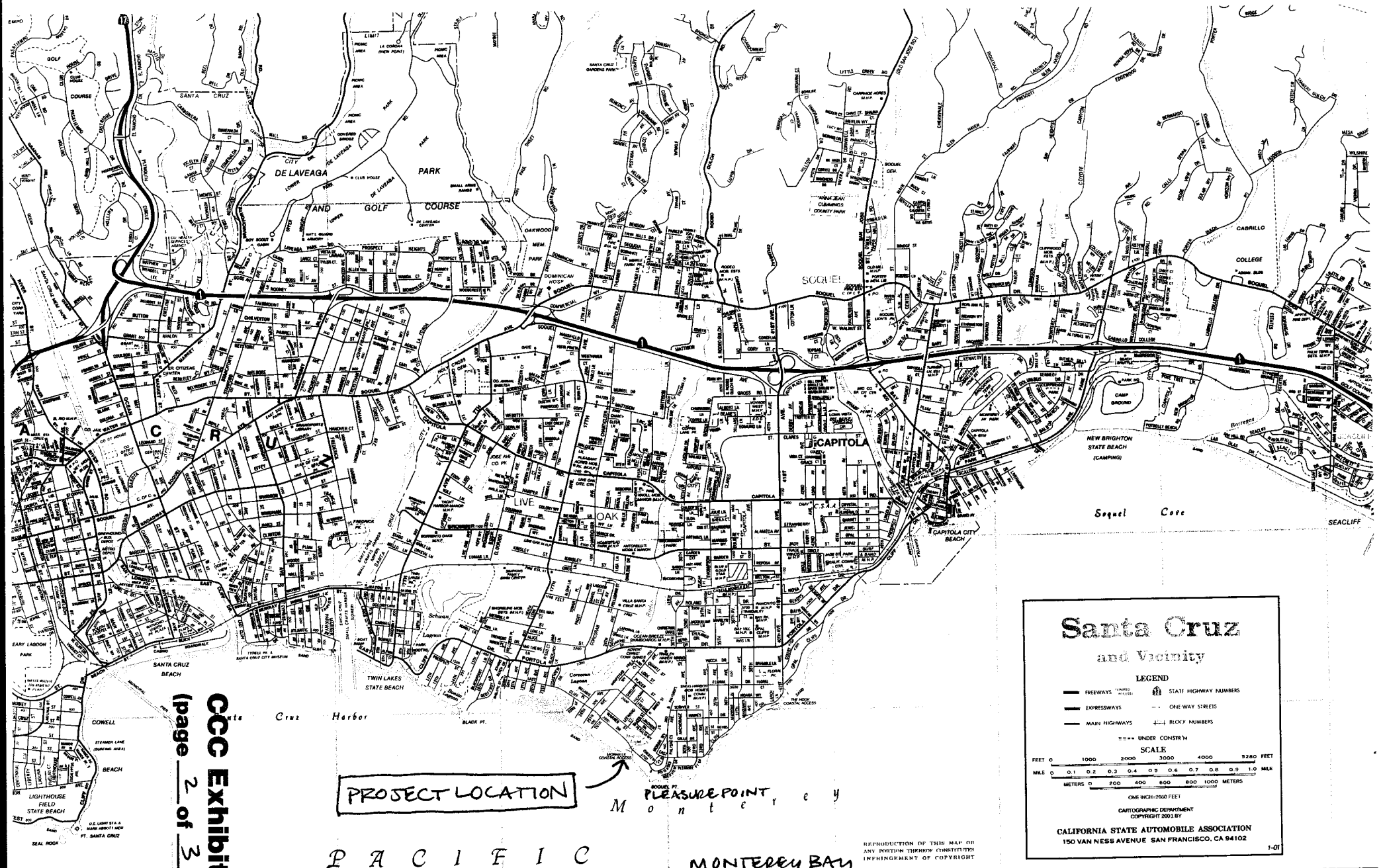
of Resources as being the functional equivalent of environmental review under CEQA. This staff report has discussed the relevant coastal resource issues with the proposal, and has recommended appropriate suggested modifications to avoid and/or lessen any potential for adverse impacts to said resources. 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** 3 **pages)**



CCC Exhibit
(page 2 of 3 pages)

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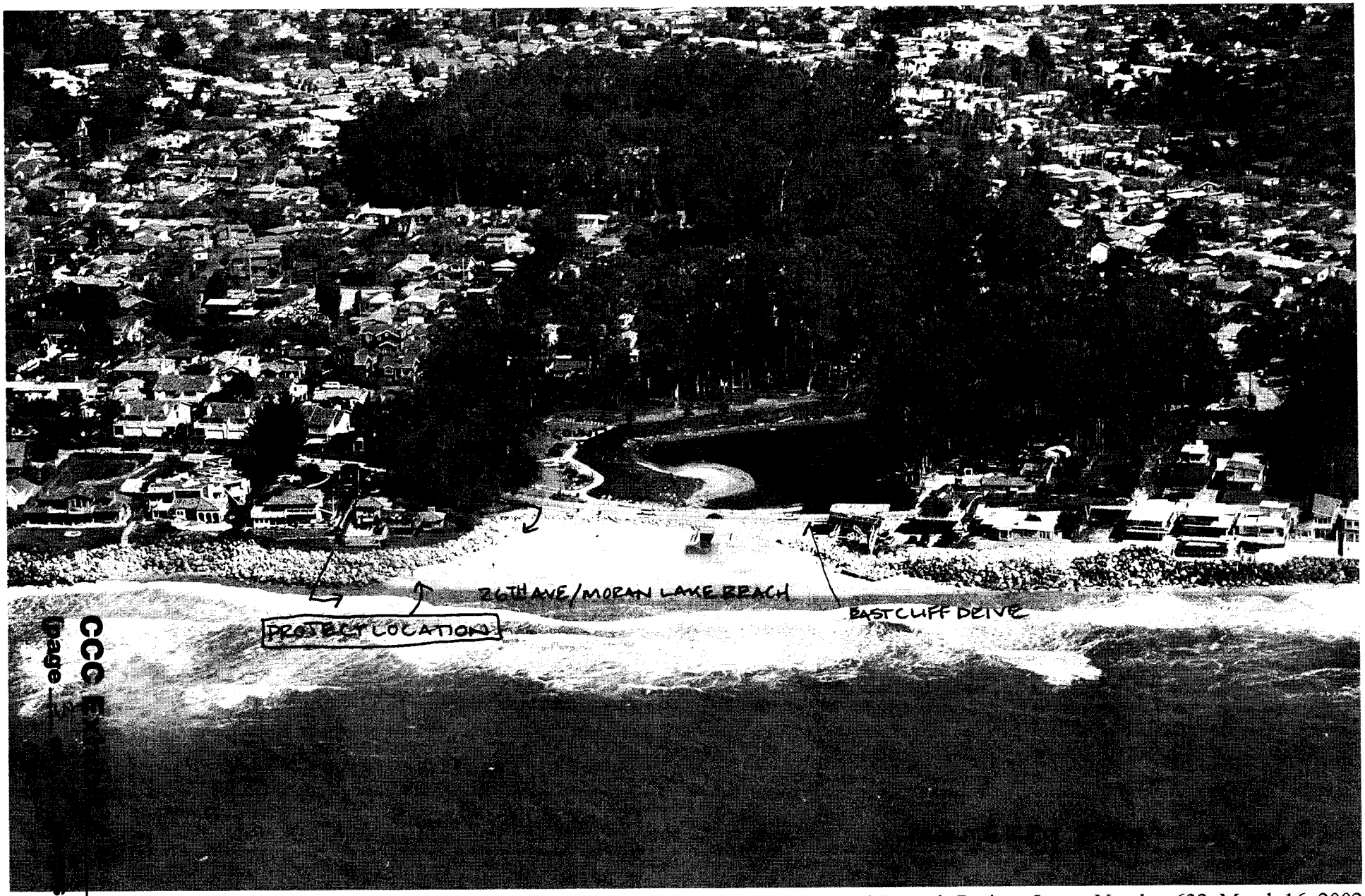
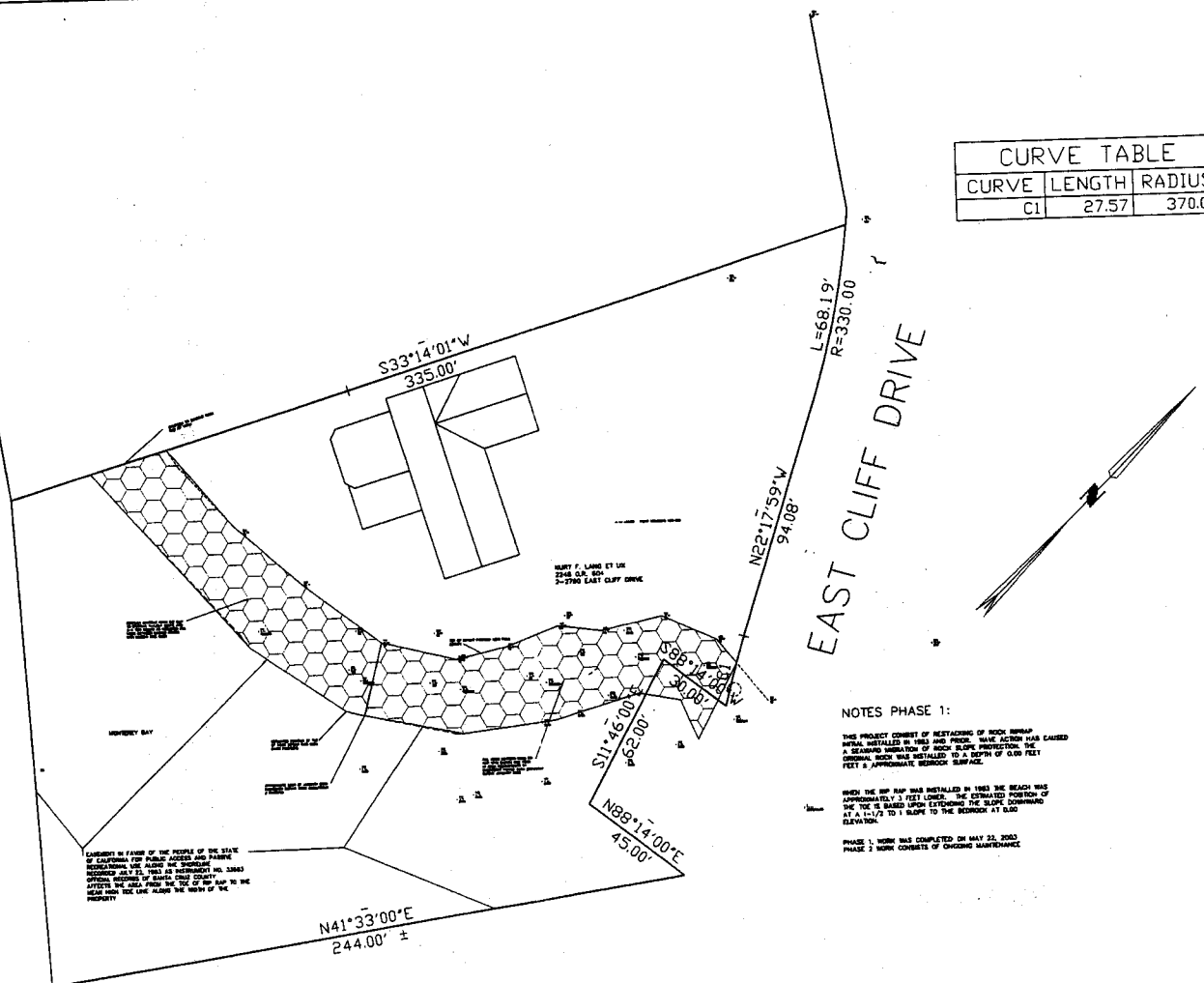


California Coastal Records Project, Image Number 632, March 16, 2002

CCC Exhibit
(page 3 of 5)

MAINTENANCE PROGRAM

THIS PROJECT CONSIST OF MAINTENANCE OF AN EXISTING ROCK RIP RAP SHORE PROTECTION STRUCTURE. THE TOE OF THE ROCK RIP RAP WAS ESTABLISHED BY FIELD SURVEY IN 1996 AND FROM RECORD DATA. THE OWNER OF THE PROPERTY, SHALL WHEN THEY DEEM IT NECESSARY SHALL HAVE THE RIGHT TO RESTACK AND ADD SUCH MATERIAL AS NECESSARY TO ACHIEVE THE LINES AND GRADES AS SHOWN HEREON. THE TOE OF THE SEAWARD TOE OF THE RIP RAP SHALL BE AS SHOWN ON THESE PLANS. AND TOP OF ROCK ENGINEERING SHALL BE THE EXISTING CONTACT LINE BETWEEN THE ROCK AND THE NATIVE MATERIAL AS ESTABLISHED BY BOWMAN & WILLIAMS 1999 SURVEY. THE OWNERS OF THE PROPERTY SHALL PROVIDE WRITTEN NOTICE TO THE CALIFORNIA COASTAL COMMISSION AND THE MONTEREY BAY SANCTUARY AT LEAST 7 DAYS PRIOR TO DOING ANY MAINTENANCE ON THE ROCK RIP RAP. MATERIAL SHALL BE RESTACKED BY MEANS OF A TRACK LAYING LOADER WHICH SHALL ENTER THE BEACH AREA FROM EAST CLIFF DRIVE OVER THE LAND PARCEL. WORK SHALL BE DONE AT LOW TIDE AND HOURS OF WORK SHALL BE MONDAY THROUGH SATURDAY BETWEEN THE HOURS OF 8:00 AM AND 7:00 PM. WORK SHALL BE COMPLETED WITHIN 6 WORKING DAYS. THE SHALL COMMENCE THE DAY WHEN LOADER IS BROUGHT ON TO THE LAND PARCEL.



CURVE TABLE		
CURVE	LENGTH	RADIUS
C1	27.57	370.00

NOTES PHASE 1:

THIS PROJECT CONSIST OF RESTACKING OF ROCK RIPRAP INITIAL INSTALLED IN 1983 AND PRIOR. WAVE ACTION HAS CAUSED A SEAWARD MIGRATION OF ROCK SLOPE PROTECTION. THE ORIGINAL ROCK WAS INSTALLED TO A DEPTH OF 0.00 FEET FEET ± APPROXIMATE BEDROCK SURFACE.

WHEN THE RIP RAP WAS INSTALLED IN 1983 THE BEACH WAS APPROXIMATELY 3 FEET LOWER. THE ESTIMATED POSITION OF THE TOE IS BASED UPON EXTENDING THE SLOPE DOWNWARD AT A 1-1/2 TO 1 SLOPE TO THE BEDROCK AT 0.00 ELEVATION.

PHASE 1, WORK WAS COMPLETED ON MAY 22, 2003
PHASE 2 WORK CONSISTS OF ONGOING MAINTENANCE

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

APN 028-242-11

REVISED

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
1011 CEDAR STREET
SANTA CRUZ, CA 95060
(408) 426-3560

REGISTERED CIVIL ENGINEER NO. 16852

ROCK RIPRAP SHORE PROTECTION
MAINTENANCE PLAN
FOR LANG RESIDENCE

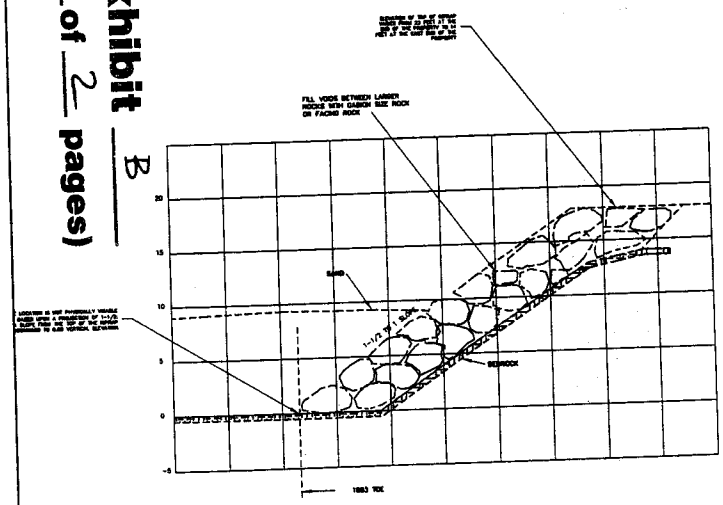
KURT AND JAMIE LANG
2-2790 EAST CLIFF DRIVE
SITUATE IN
SANTA CRUZ, CALIFORNIA

SCALE 1" = 20'	DRAWN CMM	JOB NO. 21426	SHEET 1 OF 2
DATE SEPT 2, 2003	CHECKED TAM	INDEX RODEO 2F	
DESIGN TAM	DWG NAME 21426-1 DWG	FILE NO. 21426	

CCC Exhibit B
(page 1 of 2 pages)

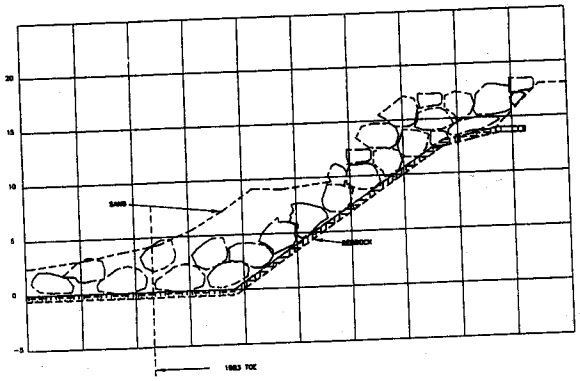
RECEIVED
SEP 0 8 2003
CALIFORNIA
COASTAL COMMISSION
CENTRAL COAST AREA

CCC Exhibit B
(page 2 **of** 2 **pages)**



PROPOSED SECTION AFTER RESTACKING

SCALE 1" = 5'



PRESENT SECTION SHOWING MIGRATION OF ROCK

GRAPHIC SCALE

(IN FEET)
1 inch = 5 ft.

APN 028-242-11

REVISED

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
1011 CEDAR STREET
SANTA CRUZ, CA 95060
(408) 426-3580

REGISTERED CIVIL ENGINEER NO. 16652

ROCK RIPRAP SHORE PROTECTION MAINTENANCE PLAN

KURT AND JANE LANG
2-3790 EAST CLIFF DRIVE
SITUATE IN
SANTA CRUZ, CALIFORNIA

SCALE 1" = 5'	DRAWN CMM	JOB NO. 21426	SHEET 2 OF 2
DATE SEPT 3, 2003	CHECKED TAM	INDEX RODEO 2F	
DESIGN TAM	DWG NAME 21426-1 DWG	FILE NO. 21426	