CALIFORNIA COASTAL COMMISSION

NORTH CENTRAL COAST DISTRICT OFFICE 45 FREMONT ST, SUITE 2000 SAN FRANCISCO, CA 94105-2219 VOICE (415) 904-5260 FAX (415) 904-5400 TDD (415) 597-5885 F9a



Prepared October 5, 2011 (for October 7, 2011 hearing)

To: Coastal Commissioners and Interested Persons

From: Charles Lester, Deputy Director Ruby Pap, District Supervisor Nicholas Dreher, Coastal Planner Click here to see the original staff report.

Click here to see added materials & correspondence received.

Subject: STAFF REPORT ADDENDUM for Item F9a Coastal Development Permit no. 2-08-020 (AIMCO, Esplanade Avenue Apartments LLC, Pacifica)

The purpose of this staff report addendum is to: 1) amend Special Condition 5 to provide an enforceable mechanism of reducing the scope of the proposed project in the event adjacent property owners do not give the applicant permission to perform certain rock removal activities in Areas 1 and 2 of the project description; 2) insert Special Condition 16 and supporting findings, to limit the Commission's liability in the event a non-applicant seeks legal action; and 3) address other minor non-substantive changes. Deletions are shown in strikethrough and additions are shown in <u>underline</u>.

Staff continues to recommend approval of this project as conditioned. In the event the adjacent property owner does not give permission for the rock removal activities identified above, the approved project, as conditioned, can still be found consistent with the Coastal Act.

1. Amend Project Description on page 1 as follows:

After-the-Fact permanent authorization for temporary work performed under six emergency permits, including construction of (1) a rock riprap revetment along the toe of the bluff totaling approximately 475 feet long, (2) three soil nail wall segments totaling approximately 5,0067,722-square-feet, and (3) an engineered, vegetated reconstructed slope. The applicant also proposes a 14,171 sq. ft. public access dedication on 360 Esplanade Avenue and a \$289,014.96 payment to mitigate the impacts of the development permanently authorized after the fact.

2. Amend Special Condition #3 as follows:

b. Any future redevelopment of the blufftop residential parcels shall not rely on the permitted shoreline protective devices to establish geologic stability or protection from hazards. Redevelopment on the sites shall be sited and designed to be safe without reliance on_shoreline or bluff protective devices. As used in this condition, "redevelopment" is defined to include: (1) additions; (2) expansions; (3) demolition, renovation or replacement that would result in alteration to 50 percent or more of an existing structure, including but not limited to, alteration of 50 percent or more of interior

walls, exterior walls or a combination of both types of walls; or (4) demolition, renovation or replacement of less than 50 percent of an existing structure where the proposed remodel or addition would result in a combined alteration of 50 percent or more of the structure (including previous alterations) from its condition in October 2011; and

[...]

3. Amend Special Condition #4 as follows:

No later than 19 years prior to the termination of the twenty year authorization period for the permitted shoreline protective devices pursuant to Special Condition 2, the property owners shall submit to the Commission an application for a coastal development permit amendment to either remove the subject shoreline protection in its entirety, change or reduce its size or configuration, or extend the length of time the subject shoreline protection is authorized. Provided a complete application is received before the termination of the 20-year authorization period, the authorization period shall be automatically extended until the time the Commission acts on the application. Sufficiently detailed information shall accompany any amendment application to allow the Commission to consider the following in review of the proposed permit amendment:

[...]

4. Amend Special Condition #6 as follows:

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, and in order to implement the applicant's proposal of an offer to dedicate an easement for lateral public access and passive recreational use along the shoreline as part of this project, the landowners shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a public agency or private association approved by the Executive Director an easement for lateral public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property. Such easement shall be located along the entire width of the property at 360 Esplanade Avenue (APN 009-413-060) from the ambulatory mean high tide line landward to the toe of the proposed revetment. (Identified as the hatched area on page 1 of **Exhibit 4**).

The document shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable. The recordinged document shall include a formal legal description and graphic depiction, prepared by a licensed surveyor, of both the applicants' entire parcel and the easement area. Thise deed

restriction<u>recorded document</u> shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

5. Amend Special Condition 11 as follows:

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicants shall provide to the Executive Director copies of all other required state and federal discretionary permits for the development authorized by CDP 2-08-020. The applicant shall inform the Executive Director of any changes to the project required by other state or federal agencies. Such changes shall not be incorporated into the project until the applicants obtain a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the permittee shall provide written evidence of the full consent of any underlying land owner of the proposed project, to the extent the construction activities approved herein involve removal or alteration of rock on property not owned by the permittee. Prior to the commencement of any development involving property not owned by the permittee, the permittee shall provide, for the review and approval of the Executive Director, evidence that the adjacent property owner has provided permission to the permittee to perform construction activities on the adjacent property as conditioned by this permit. To the extent that permission is not obtained, the development authorized herein to take place on the adjacent property will not be undertaken. Such development involves the removal of rock on the adjacent property.

6. Insert Special Condition 16 at the top of page 16 as follows:

16. Liability for Costs and Attorneys Fees

The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay -- that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the applicant against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

7. Insert the following after the second full paragraph on page 44:

Coastal Act section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications. See also 14 C.C.R. § 13055(e). Thus, the Commission is authorized to require reimbursement for

expenses incurred in defending its action on the pending CDP application. Therefore, consistent with Section 30620(c), the Commission imposes Special Condition 16, requiring reimbursement of any costs and attorneys fees the Commission incurs "in connection with the defense of any action brought by a party other than the Applicant/Permittee ... challenging the approval or issuance of this permit."

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F9a

Filed:February 7, 2011180th Day:August 6, 2011270th Day:November 4, 2011Staff:Nicholas B. Dreher - SFStaff Report:September 23, 2011Hearing Date:October 7, 2011

STAFF REPORT: CONSOLIDATED COASTAL DEVELOPMENT PERMIT

APPLICATION NO .:	2-08-020
APPLICANT:	AIMCO, Esplanade Avenue Apartments LLC
AGENTS:	Sean Finnegan, Aimco Anne Blemker, McCabe & Company
PROJECT DESCRIPTION:	After-the-Fact permanent authorization for temporary work performed under six emergency permits, including construction of (1) a rock riprap revetment along the toe of the bluff totaling approximately 475 feet long, (2) three soil nail wall segments totaling approximately 5,006-square- feet, (3) an engineered, vegetated reconstructed slope. The applicant also proposes a 14,171 sq. ft. public access dedication on 360 Esplanade Avenue and a \$289,014.96 payment to mitigate the impacts of the development permanently authorized after the fact.
PROJECT LOCATION:	Along the bluff and shoreline fronting 360 & 380 Esplanade Avenue, Pacifica, San Mateo County (APNs 009-413-060 & 009-131-060)
SUBSTANTIVE FILE DOCUMENTS:	"Final Revised Plans Letter," prepared by Aimco, dated September 12, 2011; "Comparison of Shoreline and Bluff Protection Designs at 100 Esplanade Avenue and 360 & 380 Esplanade Avenue, Pacifica, San Mateo County, California," prepared by GeoSoils, Inc. and WSSI

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> Environmental Consulting, dated July 11, 2011; "Revetment and Bluff Stabilization Alternatives," prepared by GeoSoils, Inc., dated June 3, 2011; "Supplemental Geotechnical Information," prepared by TRC, dated April 5, 2010; "Summary of Design Details," prepared by TRC, dated November 27, 2009; "Response to Comments of California Coastal Commission," prepared by TRC, dated September 18, 2009; "Geotechnical Investigation Revetment Extension 360 Esplanade Avenue, Pacifica California," prepared by TRC, dated June 15, 2009; "Response to Comments of California Coastal Commission - 360 and 380 Esplanade Avenue," prepared by TRC, dated December 23, 2008; "Geotechnical Reconnaissance and Coastal Engineering Investigation for 380 Esplanade Avenue," prepared by HKA, dated December 2008; "Rip Rap Revetment," prepared by TRC, dated October 21, 2008; "Riprap Revetment Plan," prepared by Haro, Kasunich and Associates, Inc. (HKA), dated December 4, 1998; "Landslide scarp repair w/ riprap revetment", prepared by HKA, revised September 21, 1998; Weigel R.L. (2002a) Seawalls, seacliffs, beachrock: what beach effects? Part 1. Shore & Beach, 70(1), 17-27; Weigel R.L. (2002b) Seawalls, seacliffs, beachrock: what beach effects? Part 2. Shore & Beach, 70(2), 13–22; Weigel R.L. (2002c) Seawalls, seacliffs, beachrock: what beach effects? Part 3. Shore & Beach, 70(3), 2–14; Revell, D. L., J. E. Dugan and D. M. Hubbard. 2011. Physical and ecological responses of sandy beaches to the 1997-98 El Nino. Journal of Coastal Research, 27: 718-730; James F. Tait and Gary B. Griggs in Beach Response to the Presence of a Seawall (A Comparison of Field Observations), 1991; 2-10-017-G/Aimco; 2-10-011-G/Aimco; 2-09-022-G/Aimco; 1-99-005-G/DeDominico; 1-98-083-G/1-98-106-G/DeDominico; 1-98-109-G/Behling; 4-87-161/Pierce Family Trust and Morgan; 3-03-108/Davis; 6-87-371/Van Buskirk; 5-87-576/Miser and Cooper; 3-02-024/Ocean Harbor House; 6-05-72/Las Brisas, 6-07-133/Li; 6-07-134/Caccavo; 6-03-33-A5/Surfsong; 6-08-73/DiNoto, et.al; 6-08-122/Winkler and 6-09-033/Garber.

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SUMMARY OF STAFF RECOMMENDATION

Staff is recommending approval of the subject shoreline protection development pursuant to Section 30235 of the Coastal Act because the applicants have demonstrated that the shoreline protection is: (1) required to protect existing blufftop residential structures that are in danger from erosion; and (2) designed to mitigate adverse impacts on shoreline sand supply.

In this particular case, the proposed revetment is located both on private property (360 Esplanade Avenue) and City-owned beach (380 Esplanade Avenue). Originally, the subject revetments and one of the proposed soil-nail walls were approved pursuant to emergency permit approvals between 1998 and 2010. The current proposal removes 40% of the existing (emergency) rock, relocates the revetments slightly landward, replaces certain rock with two soil-nail walls, replaces certain rock with an engineered, vegetated reconstructed slope and includes a sand supply mitigation payment and a dedication of lateral public beach access seaward of the proposed revetment fronting 360 Esplanade.

Staff is recommending approval with a number of conditions that address the direct impact of the proposed revetment and soil-nail walls on coastal resources such as scenic quality, public access and recreation opportunities, shoreline sand supply and the direct, indirect and long-term effects on the adjacent public beach and State tidelands that results from armoring the bluffs. Due to the uncertainties inherent in providing shoreline protection in a dynamic environment, including the unknown effects of climate change and sea level rise, staff is recommending that the proposed shoreline protection only be authorized for 20 years from the date of approval. Taking into account the time since the shoreline protection was first authorized by emergency permit would result in a total of 32 years that the proposed revetment will be in place (1998-2031). Such authorization for a limited period of time acknowledges that the revetment and soil-nail walls are not necessarily permanent structures and allows for a reassessment of site conditions in the future. After 20 years from the date of the Commission's after the fact approval, an amendment to this permit will be required to allow the Commission to reevaluate the revetment and soil-nail wall's efficacy and the impacts it causes to public resources. Any reauthorization of the subject shoreline protection will be based on the conditions at that time taking into consideration the status of the existing development requiring protection and an appropriate reassessment of continued armoring and its effects at that time in light of what may be differing circumstances than are present today, including the condition of the shoreline protection.

As part of this development authorization, the applicant is proposing to pay an in-lieu payment of \$289,014.96 to mitigate the associated impacts of the development on regional sand supply and is also proposing an offer to dedicate 14,171 sq. ft. of the applicant's beach property as lateral public beach access for the impacts of the development on public access and recreational opportunities. With the proposed sand mitigation, beach access/recreation mitigation and lateral access dedication, as well as the limitation on the time for which the shoreline protection is approved, the impacts of the proposed shoreline protection on regional sand supply and public access and recreation will be mitigated to the maximum extent feasible. To ensure that any future redevelopment of these properties is consistent with Chapter 3 of the Coastal Act, this permit also requires that no redevelopment of the bluff-top properties can rely upon this shoreline protection to determine site suitability for such redevelopment. Other conditions

require an in-depth alternatives analysis for future reauthorization of the shoreline protection devices, measures to address the appearance of the soil-nail walls, and maintenance and monitoring programs.

The motions and resolutions to adopt the staff recommendation begin on page 5

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EXHIBITS

- 1. Regional Area Map
- 2. Vicinity Map
- 3. Parcel Maps
- 4. Project Plans
- 5. Aerial View
- 6. Proposed Project Simulation
- 7. State Lands Commission Letter dated November 17, 2009
- 8. MHTL Projection
- 9. 1972 Aerial Photograph
- **10.** Sand Supply Mitigation Calculation

Jurisdiction and Standard of Review

The proposed project involves development in an area of the Commission's retained coastal development permit jurisdiction, and development in an area of coastal development permit

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jurisdiction delegated to the City of Pacifica by the Commission through the City's certified Local Coastal Program.

The Coastal Act was amended by Senate Bill 1843 in 2006 to add Section 30601.3, effective January 1, 2007. Section 30601.3 authorizes the Commission to process a consolidated coastal development permit application when requested by the local government and the applicant and approved by the Executive Director for projects that would otherwise require coastal development permits from both the Commission and from a local government with a certified LCP.

The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated coastal development permit application submitted pursuant to Section 30601.3. The local government's certified LCP may be used as guidance.

I. STAFF RECOMMENDATION, MOTION, AND RESOLUTION

The staff recommends that the Commission approve Coastal Development Permit No. 2-08-020 subject to the conditions in Sections II and III below.

Motion:

I move that the Commission approve Coastal Development Permit No. 2-08-020 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve the Permit:

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

II. STANDARD CONDITIONS

- 1. <u>Notice of Receipt and Acknowledgment.</u> The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
- 2. <u>Interpretation</u>. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
- 3. <u>Assignment.</u> 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.
- 4. <u>Terms and Conditions Run with the Land.</u> These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. <u>Authorized Development and Final Revised Plans</u>

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicants shall submit for review and written approval of the Executive Director, final plans for the project. Said plans shall be in substantial conformance with the submitted plans dated September 19, 2011. The following development within areas 1-8 (as identified in the Plans S1-S5; **Exhibit 4**) is authorized by this permit:

- a. <u>Areas 1 and 2</u> Removal of 1,233 tons of rip rap rock and construction of revetment using 1,567 tons of rip rap rock, with a width of approximately 20 feet and a length of approximately 100 feet at the base of the bluff at 360 Esplanade Avenue, identified as Areas 1 and 2 in the Plans S1 and S2 (**Exhibit 4**).
- b. <u>Areas 3 and 4</u> Construction of a colored and textured 5,922 sq. ft., approximately 50 ft. high soil-nail wall on the mid and upper bluff at 360 Esplanade Avenue, identified as Areas 3 and 4 in the Plans S1 and S3 (**Exhibit 4**).
- c. <u>Area 5</u> Removal of 643 tons of rip rap rock and construction of revetment using 527 tons of rip rap, with a width of approximately 20 feet and a length of approximately 60 feet at the base of the bluff at 360 Esplanade Avenue, identified as Area 5 in the Plans S1 and S3 (**Exhibit 4**).
- d. <u>Area 6</u> Removal of 531 tons of rock from the upper bluff and construction of a 2,202 sq. ft. engineered, vegetated slope on the area identified as Area 6 in the Plans S1 and S4

(**Exhibit 4**). If the conditions of the bluff cannot support an engineered, vegetated bluff, a soil nail wall may be substituted, upon submittal of a permit amendment.

- e. <u>Area 7a</u> Construction of a colored and textured 1,800 sq. ft., approximately 10 ft. high soil-nail wall on the lower to mid bluff at 360 Esplanade Avenue, identified as Area 7a in the Plans S1 and S4 (**Exhibit 4**).
- f. <u>Area 7b</u> Removal of 1,400 tons of rip rap rock and construction of revetment using 1,500 tons of rip rap, with a width of approximately 20 feet and a length of approximately 120 feet at the base of the bluff at 360 Esplanade Avenue, identified as Area 7b in the Plans S1 and S4 (**Exhibit 4**).
- g. <u>Area 8</u> Removal of 1,280 tons of rip rap rock and construction of revetment using 2,620 tons of rip rap, with a width of approximately 23 feet and a length of approximately 160 feet at the base of the bluff at 380 Esplanade Avenue, identified as Area 8 in the Plans S1 and S5 (**Exhibit 4**).
- h. Any existing permanent irrigation system located on the bluff top site(s) shall be removed or capped.
- i. All runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street.
- j. Inclusion of sufficient detail regarding the construction method and technology utilized for constructing the revetment and soil-nail walls so as to demonstrate that the design will gradually blend into the adjacent natural bluff. The north side of the revetment shall be designed and constructed to minimize the erosive effects of the approved shoreline protection on the adjacent bluffs.
- k. Inclusion of sufficient detail regarding the construction method and technology utilized for texturing and coloring the soil-nail walls to confirm, and be of sufficient detail to verify, that the soil-nail walls' color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the color of the fill material.

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

2. <u>Rock Removal</u>

The approved removal of rock as described in Special Condition 1(a), (c), (d), (f) and (g), must be completed prior to Memorial Day Weekend 2012, or within such additional time as the Executive Director may grant for good cause.

3. <u>Encroachment on Public Property/Impacts to Public Trust Lands/Future</u> <u>Redevelopment</u>

By acceptance of this permit, the applicant agrees, on behalf of itself and all successors and assigns, to the following limitations on use of the blufftop residential parcels (APNs 009-413-060 & 009-131-060):

- a. This coastal development permit authorizes the revetment and soil-nail walls for twenty years from the date of approval (i.e., until October 7, 2031). No modification or expansion of the approved revetment, soil-nail walls or additional bluff or shoreline protective structures shall be constructed, without approval of an amendment to this coastal development permit by the Coastal Commission;
- b. Any future redevelopment of the blufftop residential parcels shall not rely on the permitted shoreline protective devices to establish geologic stability or protection from hazards. Redevelopment on the sites shall be sited and designed to be safe without reliance on_shoreline or bluff protective devices. As used in this condition, "redevelopment" is defined to include: (1) additions; (2) expansions; (3) demolition, renovation or replacement that would result in alteration to 50 percent or more of an existing structure, including but not limited to, alteration of 50 percent or more of interior walls, exterior walls or a combination of both types of walls; or (4) demolition, renovation or replacement of less than 50 percent of an existing structure where the proposed remodel or addition would result in a combined alteration of 50 percent or more of 2011; and
- c. No shoreline protection is authorized in order to protect ancillary improvements such as patios, decks, fencing and landscaping; and
- d. WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall submit written evidence that the City of Pacifica has received a copy of the conditions of this Commission-approved coastal development permit and that it authorizes the proposed encroachment on City property (380 Esplanade Avenue) as approved with conditions by this permit.

4. Additional Shoreline Structure Authorization or Removal

No later than 19 years prior to the termination of the twenty year authorization period for the permitted shoreline protective devices pursuant to Special Condition 2, the property owners shall submit to the Commission an application for a coastal development permit amendment to either remove the subject shoreline protection in its entirety, change or reduce its size or configuration, or extend the length of time the subject shoreline protection is authorized. Provided a complete application is received before the termination of the 20-year authorization period, the authorization period shall be automatically extended until the time the Commission acts on the

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application. Sufficiently detailed information shall accompany any amendment application to allow the Commission to consider the following in review of the proposed permit amendment:

- a. An analysis, based on the best available science and updated standards, of beach erosion, wave run-up, sea level rise, inundation and flood hazards prepared by a licensed civil engineer with expertise in coastal engineering and a slope stability analysis, prepared by a licensed Certified Engineering Geologist and/or Geotechnical Engineer or Registered Civil Engineer with expertise in soils;
- b. An evaluation of alternatives that will: (1) eliminate impacts to scenic visual resources, access and recreation, shoreline processes and all other coastal resources; (2) increase stability of the existing principal structure for its remaining life; and (3) re-site new development to an inland location, such that further alteration of natural landforms and/or impact to adjacent tidelands or public trust lands is avoided;
- c. An analysis of the condition of the existing revetment and soil-nail walls, and any impacts they may be having on public access and recreation, scenic views, sand supplies, and other coastal resources;
- d. An evaluation of the opportunities to remove or modify the existing shoreline protective devices in a manner that would eliminate or reduce the identified impacts, taking into consideration the requirements of the Coastal Act and the protection required for remaining properties subject to this coastal development permit;
- e. A proposed mitigation program to address unavoidable impacts identified in subsection (d) above;
- f. The surveyed location of all property lines and the mean high tide line by a licensed surveyor along with written evidence of full consent of any underlying land owner, including, but not limited to the City or State Lands Commission, of the proposed amendment application. If application materials indicate that development may impact or encroach on lands other than those owned by the applicant, including tidelands or public trust lands, written authorization from the underlying property owner of the applicant's ability to develop as conditioned by the permit shall be required prior to issuance of the permit amendment.

5. Mitigation for Impacts to Sand Supply

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a payment of \$289,014.96 has been deposited in an interest bearing account designated by the Executive Director, as mitigation for impacts to local sand supply and beach area that will be lost due to the impacts of the proposed protective structures. The developed mitigation plan covers impacts from the time the structures were installed through the additional 20-year design life of the approved shoreline protective devices. All interest earned by the account for the purposes stated below.

The purpose of the account shall be to improve nearby public access in the Edgemar-Pacific Manor area of the City of Pacifica. The funds shall be used solely to implement projects which

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provide access to this region's beaches, not to fund operations, maintenance or planning studies. The funds shall be released only upon approval of an appropriate project by the Executive Director of the Coastal Commission. The funds shall be released as provided for in a MOA between Coastal Conservancy, or an alternate entity approved by the Executive Director, and the Commission, setting forth terms and conditions to assure that the in-lieu payment will be expended in the manner intended by the Commission. If the MOA is terminated, the Executive Director may appoint an alternate entity to administer the fund for the purpose of restoring beaches within the Edgemar-Pacific Manor area of the City of Pacifica.

6. Offer to Dedicate Lateral Public Access

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, and in order to implement the applicant's proposal of an offer to dedicate an easement for lateral public access and passive recreational use along the shoreline as part of this project, the landowners shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a public agency or private association approved by the Executive Director an easement for lateral public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property. Such easement shall be located along the entire width of the property at 360 Esplanade Avenue (APN 009-413-060) from the ambulatory mean high tide line landward to the toe of the proposed revetment. (Identified as the hatched area on page 1 of **Exhibit 4**).

The document shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable. The recording document shall include a formal legal description and graphic depiction, prepared by a licensed surveyor, of both the applicants' entire parcel and the easement area. This deed restriction shall not be removed or changed without a Coastal Commission-approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

7. Maintenance and Monitoring Program

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall submit to the Executive Director for review and written approval, a monitoring program prepared by a licensed civil engineer or geotechnical engineer to monitor the performance of the shoreline protection devices which requires the following:

a. Provision to submit as-built plans with plan and profile plans of the revetment, soil-nail walls, engineered vegetated slope, at locations comparable to those in the approved plans (Exhibit 4) within 30 days of completion of construction.

- b. An annual evaluation of the condition and performance of the shoreline protection addressing whether any significant weathering or damage has occurred that would adversely impact the future performance of the structures. This evaluation shall include an assessment of the color and texture of the soil-nail walls comparing the appearance of the structure to the surrounding native bluffs.
- c. Annual measurements of any differential retreat between the natural bluff face and the soil-nail wall face and revetment placement, at the north and south ends of the protective devices and at 20-foot intervals (maximum) along the top of the soil-nail face/bluff face and revetment face/bluff face intersections. The program shall describe the method by which such measurements shall be taken.
- d. Provisions for submittal of a report to the Executive Director by May 1 of each year (beginning the first year after construction of the project is completed) for a period of three years and then, each third year following the last the annual report, for the 20 years for which this shoreline structures are approved. In addition, reports shall be submitted in the Spring immediately following either:
 - 1. An "El Niño" storm event comparable to or greater than a 20-year storm.

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

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

- e. Each report shall be prepared by a licensed civil engineer, geotechnical engineer or geologist. The report shall contain the measurements and evaluation required in sections a and b above. The report shall also summarize all measurements and analyze trends such as erosion of the bluffs, changes in sea level, the stability of the overall bluff face, including the upper bluff area, and the impact of the shoreline protection on the bluffs to either side of the protective structures. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the shoreline protection.
- f. An agreement that, if after inspection or in the event the report required in subsection c above recommends any necessary maintenance, repair, changes or modifications to the project including maintenance of the color of the structures to ensure a continued match with the surrounding native bluffs, the permittees shall contact the Executive Director to determine whether an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit amendment for the required maintenance within 90 days of the report or discovery of the problem. Otherwise, the permittee shall maintain the permitted rock revetment and soil nail walls in their approved state. Maintenance of the soil nail wall shall include maintaining the color,

texture and integrity of the shotcrete facing. Any change in the design of the project or future additions/reinforcement of the rock revetment and soil nail wall beyond exempt maintenance as defined in Section 13252 of Title 14 of the California Code of Regulations, will require a coastal development permit amendment.

g. Provisions for the removal of any debris that falls off of the shoreline protective structures and litters the beach **WITHIN 10 DAYS OF DETECTION OF THE DEBRIS**, unless it is not feasible to remove such debris by hand, in which case the applicant shall contact the Executive Director to determine whether a permit or permit amendment is required pursuant to the requirements of subsection (f) above.

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

8. <u>Storage and Staging Areas/Access Corridors</u>

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicants shall submit to the Executive Director for review and written approval, final plans approved by the City of Pacifica and/or the State Coastal Conservancy indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that:

- a. No overnight storage of equipment or materials shall occur on sandy beach or public parking spaces. During the construction stages of the project, the applicants shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the protective structures/slope reconstruction. Construction equipment shall not be washed on the beach or in recreational areas.
- b. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.
- c. No work shall occur on the beach on weekends, holidays or between Memorial Day weekend and Labor Day of any year.
- d. The applicant shall submit evidence that the approved plans/notes have been incorporated into construction bid documents. The staging site shall be removed and/or restored immediately following completion of the development.

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

9. Storm Design/Certified Plans

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall submit certification by a registered civil engineer that the proposed shoreline protective devices has been designed to withstand storms comparable to the winter storms of 1982-83.

In addition, **within 60 days following construction**, the applicants shall submit certification by a registered civil engineer, acceptable to the Executive Director, verifying that the shoreline protective devices have been constructed in conformance with the approved plans for the project.

10. Public Rights

The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. By acceptance of this permit, the applicant acknowledges, on behalf of him/herself and his/her successors in interest, that issuance of the permit and construction of the permitted development shall not constitute a waiver of any public rights which may exist on the property.

11. Other Permits and Permission

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicants shall provide to the Executive Director copies of all other required state and federal discretionary permits for the development authorized by CDP 2-08-020. The applicant shall inform the Executive Director of any changes to the project required by other state or federal agencies. Such changes shall not be incorporated into the project until the applicants obtain a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the permittee shall provide written evidence of the full consent of any underlying land owner of the proposed project, to the extent the construction activities approved herein involve removal or alteration of rock on property not owned by the permittee.

12. Assumption of Risk, Waiver of Liability and Indemnity Agreement.

By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards from erosion and coastal bluff collapse; (ii) to assume the risks to the

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applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

13. Best Management Practices

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall submit for review and written approval of the Executive Director, a Best Management Practices Plan approved by the City of Pacifica that effectively assures no shotcrete or other construction byproduct will be allowed onto the sandy beach and/or allowed to enter into coastal waters. The Plan shall apply to both concrete pouring/pumping activities as well as shotcrete/concrete application activities. During shotcrete/concrete application specifically, the Plan shall at a minimum provide for all shotcrete/concrete to be contained through the use of tarps or similar barriers that completely enclose the application area and that prevent shotcrete/concrete contact with beach sands and/or coastal waters. All shotcrete and other construction byproduct shall be properly collected and disposed of off-site.

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

The applicant shall comply with the following construction-related requirements:

- a. All areas used for construction staging and access purposes shall be kept free from any trash or debris not needed for construction purposes. Daily trash and debris haul shall be implemented.
- b. No construction equipment, materials, or debris shall be placed where they may be subject to ocean waters or dispersion. No construction equipment or materials shall be stored on the beach.
- c. If, at any time while the work authorized by this Emergency Permit is occurring, any marine mammals are located on or seaward of the subject property, work must immediately stop and the Property Owner must immediately call the Marine Mammal Center is Sausalito, CA or the National Marine Fisheries Service to report that a marine mammal is located on the beach. Work must not commence until either the

animal is removed by the Marine Mammal Center or the National Marine Fisheries Service, or until the animal returns to the ocean on its own without any harassment.

- d. All construction activities that result in discharge of materials, polluted runoff, or wastes to the beach and/or the adjacent marine environment are prohibited. The Permittee shall collect, contain, and properly dispose of all construction leaks, drips, by-products, and any similar contaminants through the use of containment structures or equivalent as necessary (including through the use of collection devices and absorbent materials placed below any above-ground work where such contaminants are possible and/or expected). Equipment washing, refueling, and/or servicing shall not take place on the beach.
- e. A copy of the signed Emergency Permit shall be maintained in a conspicuous location at the staging area site at all times, and such copy shall be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the Emergency Permit, including all of its terms and conditions, prior to commencement of construction.
- f. Particular care shall be exercised to prevent foreign materials (e.g., construction scraps, garbage, chemicals, etc.) from entering Pacific Ocean waters. A floating containment boom shall be placed around all active portions of the construction site where any floatable debris could enter the water. Contractors shall insure that work crews are carefully briefed on the importance of observing the appropriate precautions and reporting any accidental spills. Construction contracts shall contain appropriate penalty provisions, sufficient to offset the cost of retrieving or clean up of foreign materials not properly contained.
- g. The construction site and staging area(s) shall be maintained with good construction housekeeping measures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain); dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; and remove all construction debris from the beach

14. <u>Deed Restriction</u>

WITHIN 60 DAYS OF COASTAL COMMISSION ACTION ON THIS CDP

APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against each of the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject properties, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels

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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.

15. <u>Permit Expiration and Condition Compliance</u>

Because some of the proposed development has already commenced, this coastal development permit shall be deemed issued upon the Commission's approval and will not expire. Failure to comply with the special conditions of this permit may result in the institution of an action to enforce those conditions under the provisions of Chapter 9 of the Coastal Act.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

1. Site Description

The project site involves two blufftop parcels located on the seaward side of Esplanade Avenue at 360 & 380 Esplanade Avenue in the City of Pacifica, approximately one mile south of Mussel Rock (where the San Andreas fault extends offshore into the Pacific Ocean). Each of the subject parcels are developed with an apartment complex originally constructed in the 1960's. The western edge of the subject parcels fronts a steep coastal bluff that is approximately 85 feet high and bluff heights gradually increase to greater than 300 feet in the vicinity of Mussel Rock. The bluffs in the project vicinity are mainly composed of moderately cemented fine sand that are subject to extreme wave forces, landsliding, and erosion.

Neighboring properties to the north (310 - 350 Esplanade Avenue) are developed with five separate multi-family structures. The northern property boundary of 360 Esplanade extends diagonally northward across a portion of the lower bluff and beach fronting the apartment buildings at 340 & 350 Esplanade Avenue under separate ownership (**Exhibit 4**). Further north beyond the 300 block of apartment buildings is the Lands End multi-family development and the Lands End vertical public accessway. The access stairway was damaged by storm events in the late 1990's and has been closed to the public since that time.¹

The parcel directly adjacent to the south of 380 Esplanade is a private undeveloped parcel (390 Esplanade). The larger undeveloped tract downcoast of 390 Esplanade, known as 400 Esplanade, is owned by the City of Pacifica and is property over which the Coastal Conservancy holds an easement. A rudimentary dirt roadbed has been constructed down the bluff at this City-owned property and has been used for staging and construction access to the beach during emergency shoreline work performed at several properties, including the subject properties, along this stretch of coastline following the winter storms of 2009 and early 2010. This City-

¹ The reconstruction of the Lands End vertical accessway is the subject of pending CDP Application No. 2-10-039.

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owned parcel and the dirt construction access road are also used informally by the public to access the bluff and beach.

The adjacent and nearby beaches represent a mix of open and moderately accessible beaches, hampered in many areas by large placements of rock revetment. A rock riprap revetment installed under emergency permit authorization exists on the subject properties from the southern boundary of 380 Esplanade to the northern boundary of 360 Esplanade Avenue (and is, in part, the subject of this permit application). The immediate vicinity up coast and down coast of the subject properties (360 and 380 Esplanade) contains shoreline protection. A rock revetment, also installed under emergency permit authorization, exists along the toe of the bluff across 330, 320, & 310 Esplanade to the north (Emergency Permit Nos. 2-09-002-G, 2-09-021-G, & 2-10-002-G). A rock revetment also exists directly adjacent to the south of the revetment at 380 Esplanade on City-owned property that was originally constructed in 1999, and later enlarged pursuant to the Executive Director's approval (ECDP# 2-10-034-G) to protect a City drainage facility. The City-owned parcel at 400 Esplanade is unarmored. The majority of the Pacifica coastline to the south of 400 Esplanade is armored with rock riprap with the exception of the shoreline in front of the RV park and commercial development south of 380 Esplanade. The largely undeveloped Pacifica coastline to the north of Lands End (100 Esplanade Avenue) is unarmored.

2. Background

As described in further detail in the Project Description finding below, the proposed project involves after-the-fact permanent authorization for temporary work performed under six (6) emergency permits, including construction of (1) a rock revetment totaling approximately 475 feet across 360 and 380 Esplanade Avenue, and (2) an approximately 3,240-square-foot, 50-foot-high soil nail wall along an approximately 70-foot-long section of the mid and upper bluff on 360 Esplanade Avenue.

Emergency Permits Issued in 1998 & 1999

Approximately 245 feet of the 475-foot-long existing rock revetment for which the applicants are seeking authorization, was placed by previous owners under emergency permits issued in 1998 and 1999. The winter El Nino storms of 1997 and 1998 caused episodic bluff erosion at the southern end of the project area, thereby exposing the existing apartment buildings at the top of the bluff to imminent danger. The previous owners of the apartment buildings at 360 & 380 Esplanade Avenue (now owned by AIMCO) applied for emergency permits to construct a rock riprap revetment to protect the toe of the bluff from further wave erosion. The Executive Director issued the following emergency permits in 1998 & 1999:

- 1-98-083-G/1-98-106-G (DeDominico): for construction of approximately 55 feet of rock revetment along the toe of the bluff fronting the apartment building at 360 Esplanade Avenue;
- 1-98-109-G (Behling): for construction of approximately 160 feet of rock revetment along the toe of the bluff fronting the apartment building at 380 Esplanade Avenue; and

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• 1-99-005-G (DeDominico): for construction of an additional approximately 30 feet of rock revetment along the toe of the bluff fronting the apartment building at 360 Esplanade Avenue to connect the 55-foot and 160-foot-long revetment segments approved under 1-98-106-G & 1-98-109-G.

Each of these permits included a condition (Emergency Permit Condition Nos. 4 or 5) requiring, within 60 days of the date of the emergency permit, submittal of a complete coastal development permit application seeking permanent authorization for the emergency work. This condition further indicated that if no such application was received, the emergency work shall be removed in its entirety within 150 days of the date of the emergency permit, unless that requirement was waived in writing by the Executive Director. The previous owners submitted, but never completed, a coastal permit application for permanent authorization of the rock revetment. The required follow-up applications were not received within 60 days, and the Commission has not otherwise authorized the development performed under the emergency permits. Therefore, the existing rock revetment authorized by the emergency permits listed above is unpermitted, constituting a Coastal Act violation. In a letter dated June 5, 2008, Commission staff notified the current owners of 360 & 380 Esplanade Avenue (i.e., Aimco) of the violation and outlined enforcement remedies, including requiring submittal of a follow-up CDP application. The subject CDP application (2-08-020) was submitted by Aimco to resolve the violation and includes, in part, after-the-fact permanent authorization for the emergency work performed in 1998 & 1999.

Amended Project Description for Proposed Revetment Extension

In a letter dated June 26, 2009, the current Applicant amended the project description proposed under CDP No. 2-08-020 to include an additional approximately 200-foot-long extension to the 245-foot long rock revetment constructed under emergency permits in 1998 & 1999. The proposal included plans to extend the revetment from the northernmost point of the revetment constructed in 1998 & 1999 across the remainder of 360 Esplanade to join with a rock revetment extending across 310, 320, & 330 Esplanade Avenue proposed under pending CDP Application No. CDP No. 2-08-018 (Tong et al).² Due to the oblique angle of Aimco's northern property line at 360 Esplanade, an approximately 200-foot gap in the revetment would have existed between the northern end of the revetment fronting the apartment building at 360 Esplanade and the southern end of the revetment fronting 330 Esplanade (See Exhibits 3 and 4 for parcel configuration). Accelerated erosion or flanking commonly occurs at the end of a rock revetment where it abuts an unprotected bluff, due to increased wave energy. Therefore, the Applicant proposed this 200-foot extension to reduce the potential of bluff erosion along the unprotected "gap" between the two revetments, at 340 & 350 Esplanade Avenue to connect to the southern end of the revetment at 330 Esplanade Avenue. The apartment buildings at 340 & 350 Esplanade Avenue are not owned by Aimco, but the bluff area beneath them is, due to the parcel configuration.

² This revetment was constructed under Emergency Permit Nos. 2-09-002-G issued in March, 2009 and 2-09-021-G issued in December, 2009. As of the date of this staff report, the follow-up CDP application (2-03-018) has not been acted on by the Commission.

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Emergency Permits Issued in 2009 & 2010

The subject application remained incomplete until February 2011. In the meantime, severe winter storms in 2009 caused accelerated bluff erosion along the Pacifica-Esplanade bluffs. This accelerated bluff erosion forced the City of Pacifica to require evacuation of the apartment building at 330 Esplanade Avenue located to the north of the subject property. The winter storms caused significant erosion of the unprotected "gap" in the revetment on Aimco's property between the southern end of the revetment at 330 Esplanade and the northern end of the revetment in front of the apartment building at 360 Esplanade. To address this emergency, the applicant applied for emergency permit authorization to construct the approximately 200-footlong revetment extension described above. The Executive Director issued the following emergency permit dated December 21, 2009:

• 2-09-022-G: for placement of approximately 7,500 tons of 4- to 8-ton rock rip-rap to an elevation of 26 feet along approximately 200 linear feet of shoreline. Work includes construction of a keyway excavated four feet into the underlying greenstone bedrock and installation of geotextile fabric.

Additionally, during the winter storms of 2009 and early 2010, episodic erosion of a portion of the upper bluff fronting the apartment building at 360 Esplanade Avenue occurred, posing a further threat to the apartment building. The applicant applied for emergency permit authorization to construct a soil nail wall along an eroded portion of the upper bluff. The Executive Director issued the following emergency permits dated March 3, 2010 and June 16, 2010:

- 2-10-011-G: for installation of an approximately 3,240-square-foot, 50-foot-high soil nail wall along an approximately 40-foot-long section of the upper bluff consisting of (1) approximately 50-foot-long soil nails placed at 5-foot intervals in both the vertical and horizontal direction, (2) a facing element such as shotcrete with wire mesh reinforcement, and (3) drainage panels behind the wall facing.
- 2-10-017-G: for installation of approximately 30 feet of soil-nail wall to the north of the soil-nail wall structure permitted and constructed under ECDP 2-10-011-G, installation of a vertical row of soil nails at the north end of the wall on approx. 2.5-foot vertical spacing with a length of 30 feet behind the wall, at the same depths as those installed under 2-10-011-G and mid-bluff in-kind repair of the existing rock-slope protection.

The Commission's staff engineer and geologist conducted several site visits during the course of the winter storm events to evaluate the site conditions, and concurred with the issuance of the emergency permits. Construction of the revetment extension was completed on January 12, 2010. Construction of the soil nail wall was completed in late August 2010.

As described in detail in the Project Description finding below, the subject application proposes after-the-fact permanent coastal development permit authorization for the development

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performed under the six (6) emergency permits described above, with a modified project description that involves alteration of the existing revetment, including removal of rock and construction of two more soil nail walls.

3. Project Description

The current shoreline rock revetment totals approximately 475-feet in length, ranges from approximately 20 to 30 feet in width, and has a height of 26-feet located at the base of the bluff along 360 and 380 Esplanade Avenue. Additionally, the applicant has an approximately 4,600square-foot, 40 to 50-foot-high soil nail wall along an approximately 100-foot-long section of the upper bluff at 360 Esplanade. These structures were authorized through six (6) emergency permits. As follow-up to these emergency permits, the applicant requests permanent authorization to: (1) retain a soil nail wall and approximately 60% of the rock revetment (or approximately 7,125 tons of revetment) already constructed under six (6) emergency permits; (2) remove approximately 40% of the rock that has been installed through emergency permits (estimated to be 4,555 tons of rip rap rock that will be removed from the beach area and 531 tons that will be removed from the mid-bluff at area 6); (3) construct two new soil-nail walls at two separate sections of the bluff; and (4) construct at area 6 (mid-bluff) either an engineered. vegetated slope, or, a soil nail wall if the engineered vegetated slope is not feasible. (Exhibit 4) The applicant is also proposing a lateral beach access dedication along the seaward limit of its 360 Esplanade Avenue property line and a mitigation payment, to mitigate impacts to sand supply and public access/recreation caused by the subject shoreline protective devices. All of these project elements are described in greater detail below.

Rock Revetment

The existing rock revetment is 475-feet long, 20 to 30 feet wide, up to approximately 26 feet high and finished with a 2:1 slope/grade. The portion of the revetment protecting 360 Esplanade sits within the property boundary of the parcel. A City of Pacifica owned Hiking and Equestrian Easement³ is attached to the westerly 20 feet of the 360 Esplanade Avenue property, but the revetment will not sit within this easement. The portion of the revetment protecting 380 Esplanade sits on public land owned by the City of Pacifica.

The existing revetment was constructed in segments over a period of years. The initial section, 245-feet long, was installed through three emergency permit authorizations, in response to erosion occurring from the 1997/1998 El Niño storms. The emergency permit authorized the placement of rock along a total length of 245 feet, with approximately 4,000 Tons of 4 to 10 ton rock for the main 160-long section. Total tonnage of rock for the 245 foot revetment was not reported in the as-built materials. In December 2009, the Executive Director issued an additional emergency permit to construct an extension to the 245-foot-long revetment described above that would extend from the northern end of the existing revetment to the northern property boundary of 360 Esplanade. The emergency permit (2-09-022-G) authorized placement of approximately 200 linear

³ This easement was recorded on April 20, 1962.

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feet of shoreline. The work proposed under the emergency permit included construction of a keyway to be excavated four feet into the underlying greenstone bedrock and installation of geotextile fabric. Construction of the revetment extension was completed on January 12, 2010. According to documentation submitted by the applicant following completion of construction as required by conditions of the emergency permit, the project as constructed varies somewhat from the project described in the original plans approved under the emergency permit. Most notably, the keyway was not keyed into greenstone bedrock as originally proposed, but rather, was keyed into competent material (i.e., cemented sand and/or sandstone bedrock) when greenstone bedrock was not encountered as anticipated during excavation. In addition, while 7,500 tons of rock was authorized, only 5,200 tons were placed.

As constructed, the revetment extension is approximately 230 feet long, 20-30 feet wide, and 28 feet high mean sea level (MSL). Approximately 5,200 tons of rock was imported to construct the keyway and revetment buttress. The keyway was excavated and installed at least 3 to 4 feet into cemented sand and/or sandstone bedrock. Geotextile fabric (Mirafi 700X) was placed in the excavated keyway and draped up the base of the bluff. At least two layers of 8 to 10-ton rock were placed in the keyway. The next two layers consisted of 6 to 8-ton rock, and the remainder of the keyway and the revetment buttress were constructed with minimum 4-ton rock to the top of the revetment. Work was performed at low tide utilizing the construction access and staging area described below.

Proposed Revetment Modifications

As depicted in **Exhibit 4**, the applicant has separated the coastline along 360 and 380 Esplanade into 8 areas, in order to explain the precise proposed alterations to the revetment temporarily approved under the past emergency permits. Areas 1 through 7b correspond to the bluff and beach in front of 360 Esplanade Avenue and area 8 corresponds to the bluff and beach in front of 380 Esplanade Avenue. The applicant is proposing to remove and/or rework the entire revetment.

- In areas 1 and 2, the revetment height will be reduced to +12' MSL and the total volume of rock will be reduced by 44% from 2,800T to 1,567T, with removal of 1,233T.⁴
- In areas 3, 4, and 5 the revetment height will be reduced to about +18' MSL and the total volume of rock will be reduced by 55% from 1,170T to 527T, with removal of 643T.
- In area 6, approximately 531 tons of rock will be removed from the mid-bluff. Once rock is removed from area 6, the applicant plans to replace the rock with an engineered slope consisting of earth and native vegetation. However, following the removal of rock in area 6, if the underlying condition requires a soil-nail wall rather than the reconstructed slope, the applicant will apply for an amendment to this coastal development permit.

⁴ There have been various estimates foe the total volume of rock that exists seaward of 360 and 380 Esplanade. Some difficulty arises because there is also rock both up and down coast of these properties that, from the beach, seems to be associated with these two properties. Also there are no records for the total tonnage of rock placed pursuant to the 1998 Emergency Permits. In order to estimate the total volume of rock in each section, the applicant's engineer has worked with the known volumes of rock that were placed in 2010 and assumed that the revetments, on average, contain 26 tons of rock per linear foot.

- In areas 7a and 7b, the revetment height will be reduced to about +18' MSL and the total volume of rock will be reduced by 48% from 2,900T to 1,500T, with removal of 1,400T.
- In area 8, there will be no alteration of the mid-bluff or upper-bluff face and rock up to about +25 feet will be the only slope protection, but the revetment will be reduced by 33% from 3,900T to 2,620T, with removal of 1,280T.

At the beach level, the rock will be moved uniformly inland about 2 to 4 feet and the revetment toe will be buried as much as possible to allow lateral access over the revetment during times when beach sand levels are high.

In total, the proposed project involves 4,505 tons of rock revetment covering 5,500 sq. ft. of beach fronting 360 Esplanade and 2,620 tons of rock covering 3,450 sq. ft. of beach fronting 380 Esplanade, for a total of 7,125 tons of rock covering 8,950 sq. ft. of beach.

Soil Nail Walls

The proposed project also involves follow-up authorization for two emergency permits for a soilnail wall. The first permit (2-10-011-G) authorized an approximately 3,240-square-foot, 50-foothigh soil nail wall along an approximately 70-foot-long section of the upper bluff at 360 Esplanade. The second emergency permit (2-10-017-G) authorized a 30-foot northern extension of the initial soil-nail wall. The total area of soil-nail wall that was authorized by the two emergency permits was 4,600 sq. ft.

In addition to the 4,600 sq. ft. soil-nail wall at 360 Esplanade (Area 3), the applicant is proposing to install two new soil nail walls to support the mid and upper bluff at 360 Esplanade Avenue; one in Area 4 would cover approximately 1,322 sq. ft. of bluff face and the other in Area 7a would cover no more than 1,800 sq. ft. of bluff face. (**Exhibit 4**). These walls will be installed along sections of the bluff that are currently covered by rock revetment. The installation of these two new soil-nail walls will allow the lowering of the existing rock revetment, as described below, and the reduction in the volume and encroachment of the rock on the beach. The design for these soil-nail walls is the same as the design for the existing (emergency) soil-nail walls, consisting of (1) approximately 50-foot-long soil nails placed at 5-foot intervals in both the vertical and horizontal direction, (2) a facing element such as shotcrete with wire mesh reinforcement, and (3) drainage panels behind the wall facing and (4) a colored and sculpted surface finish to match the natural adjacent bluff. To facilitate collection of groundwater at the base of the soil nailed wall, the applicant proposes a subdrain pipe bedded in drain rock, encapsulated in a moisture barrier and outletted on the remaining revetment at the toe of the bluff.

The two soil nail walls to be constructed are replacing existing rock that the applicant has proposed to remove. A soil-nail wall is preferable to rock revetment, because it is less impactful of the visual resources. A soil-nail wall can be textured and colored to blend into the surrounding natural bluff, whereas the large jagged rock clutters the beach and is inconsistent with the surrounding character.

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In this case, the applicant finished the existing (emergency) soil-nail wall's colored and sculpted shotcrete facing to match the natural adjacent bluff in order to mitigate the potential visual resource impacts associated with covering the natural bluff material with the soil-nail wall. Similarly, the two additional soil-nail walls would be required to be colored and textured to blend in with the surrounding natural bluff. Although the soil-nail wall does not perfectly match the bluff, the textured, colored soil-nail wall sufficiently blends into the surrounding bluff (visual resources). As a result, the soil-nail wall approximates the character of the surrounding bluff, minimizing impacts to the character of the bluff. The proposed soil-nail walls (aside from the emergency soil-nail wall previously constructed) will also be required to implement the texturing and coloring measures to better blend into the natural bluff. Additionally, while there are impacts to sand supply (discussed in Section 4), the applicant proposes to mitigate such impacts with a sand supply mitigation payment.

In total, the project would involve no more than 7,722 sq. ft. of soil-nail wall along the bluff face at 360 Esplanade Avenue and no soil-nail walls at 380 Esplanade Avenue.

Construction Access and Staging

Construction access and staging for the project is proposed to occur from the vacant City-owned parcel located adjacent to the south of 380 Esplanade at the west end of Manor Drive (i.e., 400 Esplanade Avenue, APN 009-131-030) over which the Coastal Conservancy holds an easement. A temporary construction access ramp has been graded down the bluff face and provides vertical access for construction equipment from the top of the bluff to the beach.⁵ In January 2010, the City of Pacifica entered into a Temporary Access and Use Agreement with the applicant (Aimco) to stage material and equipment on the City's property. This agreement, which expired in March of 2010, was extended to July 12, 2010. To conduct the work proposed, the applicant will need additional authorization by the City of Pacifica and/or the State Coastal Conservancy for access and staging areas.

4. Shoreline Protection

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

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

⁵ The construction access ramp was initially installed pursuant to a Temporary Access and Use Agreement with the City to construct a rock revetment on upcoast properties (310, 320, 330, & 340 Esplanade Avenue) pursuant to Emergency Permit Nos. 2-09-002-G issued in March, 2009 and 2-09-021-G issued in December, 2009. As of the date of this staff report, the follow-up to these emergency permits (CDP Application No. 2-03-018) has not been acted on by the Commission.

stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

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

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...

Coastal Act Sections 30235 and 30253 acknowledge that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods, such as gabion walls, designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, Section 30235 only mandates the construction of shoreline protective works if they are required to serve coastal-dependant uses, or to protect existing structures or public beaches in danger from erosion, and provided they are designed to eliminate or mitigate adverse impacts on shoreline sand supply. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources including adverse effects on sand supply, public access, coastal views, alteration of natural landforms and overall shoreline beach dynamics on and off site which ultimately result in the loss of public beach. The Commission must always consider the specifics of each individual project, but under the standards established by Section 30235, prioritizes alternatives that avoid the necessity for shoreline structures that armor the shoreline and alter the natural dynamics.

The applicant is requesting to permanently retain some development already constructed under emergency permit authorization, including a rock revetment along the toe of the bluff and a soil nail wall along a portion of the upper bluff to protect two existing apartment buildings. The applicant is also proposing to remove rock, construct two new soil nail walls and construct an engineered, vegetated slope. The proposed revetment and soil nail wall constitute shoreline protective structures that alter natural shoreline processes, and thus, must be analyzed for consistency with Coastal Act Section 30235. For Coastal Act Section 30235 consistency, the proposed project must satisfy all of the following requirements: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) the shoreline-altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is necessary, while the fourth question applies to mitigating some of the impacts from the shoreline armoring.

(a) <u>Existing Structures to be Protected</u>

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For the purposes of shoreline protective structures, the Coastal Act distinguishes between development for which shoreline armoring is permissible, and development for which it is not. Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device.

Coastal Act 30235 authorizes shoreline protection for "existing" structures only. One category of "existing structures" refers to those structures in place prior to the effective date of the Coastal Act. Coastal zone development approved and constructed prior to the time the Coastal Act went into effect was not subject to Section 30253 requirements. Although some local hazard policies may have been in effect prior to the Coastal Act, these pre-Coastal Act structures have not necessarily been built in such a way as to avoid the future need for shoreline protection (in contrast to those evaluated pursuant to Section 30253). Accordingly, Coastal Act Section 30235 authorizes shoreline protection for these types of existing structures.

The two apartment buildings that would be protected by the proposed rock revetment and soil nail wall (i.e., 360 & 380 Esplanade Avenue) are considered "existing" structures. A 1972 Aerial photograph shows that the two subject apartment buildings were present prior to the passage of the Coastal Act. (**Exhibit 9**). The apartment buildings were built in the 1960's and thus, pre-date the coastal permitting requirements of both Proposition 20 and the Coastal Act. Therefore, the subject apartment buildings qualify as existing structures for purposes of Section 30235.

(b) <u>Structures in Danger from Erosion</u>

The Coastal Act allows shoreline armoring to protect existing structures in danger from erosion, but it does not define the term "in danger." There is a certain amount of risk in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other geologic hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, it can be argued that all development along the immediate California coastline is in a certain amount of "danger." It is the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring per Section 30235. Lacking Coastal Act definition, the Commission's long-standing practice has been to evaluate the immediacy of any threat in order to make a determination as to whether an existing structure is "in danger." Each case is evaluated based upon its own particular set of facts.

Within the Pacifica coastal environment, bluff retreat is usually episodic and random, and sections of the bluffs are periodically cut back in relatively large increments during episodes of large storms or occasional severe winter seasons. Earthquakes also trigger coastal bluff failures in this area. The coastside area of San Mateo County is within a seismically active, broad zone of faulting, including the Mussel Rock splay of the San Andreas fault located approximately one mile northwest of the subject site.

Significant erosion events occurred in the Pacifica area during the El Niño storm seasons of 1982-1983 and 1997-1998. Numerous homes on the ocean side of the road to the south of the

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subject site were condemned and demolished following these storm events. Attack from large waves caused significant erosion along the base of the bluff fronting the subject apartment buildings. Additionally, during the winter storms of February 1998, flow from a City-owned 48-inch drain outlet located immediately south of the apartment building at 380 Esplanade caused rapid erosion of about 80 linear feet of bluff resulting in imminent danger to the building, thus triggering the need for the rock revetment placed in 1998-1999 under emergency authorization. In 1999, the City of Pacifica also installed approximately 120 feet of rock revetment at the base of the bluff to repair the drainage outfall.

Severe winter storms in 2009 and 2010 again caused exacerbated erosion of the unarmored section of bluff north of the apartment building at 360 Esplanade. The undercutting of the bluff caused by severe wave attack also resulted in erosion of the upper bluff in front of 360 Esplanade. As documented by the applicant's engineer (TRC) in correspondence dated January 27, 2010, "sand from the overlying bluff continues to erode and the top of the bluff is advancing back towards the buildings. This active advancement continues to place the building at 360 in imminent danger...portions of the top of the bluff have sloughed off over the course of several weeks to as close as 45 feet from the north of 360." The upper bluff erosion was also documented in a report prepared by Cotton Shires dated January 29, 2010 and states, "The nearby bluff top has retreated eastward on the order of 15 to 25 feet within the past six weeks due to erosion and bluff failure associated with winter storms."

The applicant applied for, and the Executive Director issued, emergency permits for the extension of the rock revetment constructed in 1998-1999 and for construction of a soil nail wall along a portion of the upper bluff. The Commission's staff coastal engineer and staff geologist visited the site on numerous occasions and determined that the existing structures at both 360 and 380 Esplanade are in danger from erosion for purposes of Section 30235.

(c) <u>Alternatives Analysis</u>

The applicants' apartment buildings are in danger from erosion and slope failure. The third test of Section 30235 of the Coastal Act that must be met is that the proposal to alter the shoreline must be *required* to protect the existing structures. Any shoreline protective device will have adverse, and in some cases unanticipated, impacts on the immediate, nearby and sometimes distant areas of the coast. However, pursuant to Section 30235, the Commission is required to approve a shoreline protective device only where existing bluff-top structures are threatened by erosion, and only so long as there is no less environmentally damaging feasible alternative and impacts to sand supply have been adequately mitigated. In other words, under the policies of the Coastal Act, the project must be the least environmentally damaging feasible alternative. Coastal Act Section 30108 defines feasibility as follows: *"Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*

Infeasibility of the No Project alternative, the Sand Replenishment alternative and the Relocation alternative

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The soil-nail wall (360 Esplanade) and revetment (360 and 380 Esplanade) were placed pursuant to the above discussed emergency permits, and require follow-up regular CDPs to permanently authorize them. The devices are therefore temporary and potentially subject to removal. Accordingly, staff required the applicant to explore various alternatives to a rock revetment and soil-nail wall to address the vulnerability of the existing structures at 360 and 380 Esplanade, in order to ascertain the least environmentally damaging, feasible alternative. The applicants explored a "no project" alternative, meaning the existing rock revetment and soil nail wall temporarily authorized under emergency permits would be removed (in compliance with the condition of the emergency permits). With removal of the current protective riprap revetment and soil nail wall, the seaward units of the apartment buildings would likely be damaged and/or destroyed in the near future as the result of high surf and/or heavy storms. Although this alternative would avoid placing structures that alter the natural shoreline processes, this alternative would not protect the existing structures that are currently in danger from coastal erosion. Therefore, the "no project" alternative is not feasible and would be contrary to the instructions in Section 30235, requiring protection of existing structures in danger of erosion. The applicants also explored the feasibility of a sand replenishment project to build up the beach to avoid continued wave action to the bluff seaward of the subject properties and the feasibility of relocating of the existing structures. The applicants cited the inadequacy of any beach replenishment project to take the place of rock support for the bluff. The applicant also indicated that relocation for these multi-unit structures is plainly infeasible, as there is no alternative location and moving the structures would likely result in their destruction. The Commission's technical staff concludes that relocation is infeasible, because there is no alternative location on the applicant's property and no available alternative nearby location. The Commission therefore finds that the no project alternative, sand replenishment alternative and relocation alternative are infeasible alternatives, given the physical constraints of the subject properties and the inadequacy of these alternatives to protect the existing structures from shoreline erosion. Lastly, the applicant provided a lengthy feasibility analysis regarding a reduction of the existing revetment and the installation of a tied-back seawall. This analysis is described below.

Vertical Seawall Alternative

As discussed below in Sections 4(d), 6, 7 and 8, the proposed project will result in adverse impacts to visual resources, biological resources and public access and recreation. However, and despite the revetment's inconsistency with the coastal act policies, the Commission is required to approve the proposed project to protect the existing structures at 360 and 380 Esplanade pursuant to 30235, unless a less environmentally damaging feasible alternative exists. A vertical seawall is generally the preferred alternative from a coastal resources protection standpoint. A vertical seawall would replace the clutter, decrease the footprint of a structure on the beach, and thereby reduce the visual impact significantly. As stated above, Section 30251 requires that scenic and visual qualities of coastal areas "be considered and protected as a resource of public importance." In order to protect the aesthetic beauty of the coastline, development must be sited to 1) minimize the alteration of natural land forms; 2) be visually compatible with the character of surrounding areas; and, where feasible, 3) restore and enhance visual quality in visually degraded areas.

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A vertical seawall, contoured to the slope of the natural bluff, would better approximate the character of the surrounding natural bluff due to texturing and coloring, and would provide an opportunity to restore and enhance the visual quality of this stretch of beach. The soil-nail wall that has already been constructed pursuant to emergency permits was designed to blend into the surrounding natural bluff and to that end it has been a success. A vertical seawall could be designed to blend into the surrounding natural bluff, thereby fitting in with the character of surrounding areas. Additionally, given the common occurrence of displaced rocks and the uneven placement, a vertical seawall would provide an opportunity to open up the sand and restore the overall visual quality of this beach, consistent with Coastal Act Section 30251.

Coastal Act Sections 30230 and 30231 require that marine resources "be maintained, enhanced, and where feasible, restored." Additionally, uses of the marine environment must be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes. A vertical seawall could potentially enhance shoreline marine resources such as sand crabs and species associated with beach wrack habitat. In the long run, a vertical seawall (or any other hard structure on the bluff) will have a detrimental effect on marine resources, because over time the existing beach profile will steepen until little to no beach area exists. However, in the meantime and before all dry beach becomes inundated on a regular basis, certain marine dependent and beach dwelling species (including sand crabs) could potentially benefit from a less obtrusive structure. A narrow profile wall could result in occasional dry beach at the toe of the bluff that would allow wrack to accumulate and support certain wildlife and other species.

Lastly, a vertical seawall would allow safer lateral access along the beach. The rocks included within the existing revetment can shift leading to limited or constrained access, particularly at high tide. Section 30210 requires the Commission to provide the general public maximum access and recreational opportunities, while respecting the rights of private property owners. Section 30211 prohibits development from interfering with the public's right of access to the sea. In approving new development, Section 30212 requires the Commission to provide access from the nearest public roadway to the shoreline and along the coast, save certain limited exceptions, including existing adequate nearby access. Based upon current plausible projections, using current erosion rates (foot/year beach loss), a vertical seawall without toe protection could temporarily facilitate lateral public access, which will likely be lost in the even nearer future if the revetment remains. At present, lateral access is very difficult during most times of the year, based on empirical evidence derived from numerous visits to the site at various times of the year.

Despite the above, in this case a vertical seawall without the need for rock based rock protection is not feasible due to the site specific constraints. The structural viability of a vertical seawall at this location would depend on the placement of toe protection, thereby amounting to rock similar to that which is currently armoring this bluff. The applicants' consultants initially stated that because the toe of the bluff is at approximately 13 to 14 ft. MSL, and the estimated scour line/depth is approximately -5 ft. MSL, a vertical seawall would require at least an 18- to 19-foot cut at the toe of the bluff and in their opinion, would undermine the toe of the bluff and cause slope instability and failure. Following discussions with staff, the applicant provided a more in-

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depth analysis regarding the vertical seawall alternative compared to the existing rock revetment. Prior to the submission of this analysis, staff directed the applicant to consider a nearby vertical seawall under construction, upcoast of the applicant's property at 100 Esplanade Avenue. The applicant submitted a compare/contrast analysis, demonstrating that the project being installed at 100 Esplanade would not work at 360 and 380 Esplanade given the different beach profile and bluff shape.

The applicant explored the idea of a retaining tied back vertical seawall and a contoured sloping wall that matches the slope of the bluff face. The latter design has been undertaken upcoast of the subject properties at 100 Esplanade. However, the applicant's consultants and the Commission's staff engineer have agreed that a vertical seawall in this location would require 10-15 feet of toe protection and would result a similarly cluttered and obstructed beach. Essentially, the placement of a vertical seawall would require a similar amount, and in certain locations an identical amount, of rock to protect the wall from damaging wave action and scour, eliminating the public access and habitat benefits that a vertical seawall would have by opening up more beach area. Further, while technically feasible if supported by rock toe protection, a vertical seawall is more permanent, thereby limiting options in the future, such as removal of the rock-based shoreline protection. A vertical seawall would also have numerous adverse impacts to the beach over the long term, due to the fixed back beach. In comparison, in the case of the proposed, reduced revetment, the applicant has agreed to locate the revetment 2-4 feet landward of its current footprint in order to open up additional beach for lateral public access. Therefore, because the Commission finds that the vertical seawall, with toe protection, will have a similar impact on lateral public access as the proposed revetment and that the revetment allows for easier removal if the site conditions change in the future, the Commission finds that a vertical seawall with the necessary toe protection, tailored to the existing natural bluff, would not be a less environmentally damaging feasible alternative, but rather an equally damaging alternative to the proposed revetment.

In summary, and in response to staff's concerns as outlined above, the applicant proposes to reduce the existing rock on site and install two soil-nail walls (in addition to the existing wall at 360 Esplanade), in place of the removed rock, to improve the visual character. As described below, the reduced revetment will show more natural bluff and result in some additional beach for the public's use. As mentioned above, the applicant's consultants and the Commission's staff engineer have agreed that a vertical seawall in this location would require 10-15 feet of toe protect and would result a similarly cluttered and obstructed beach. While feasible, the vertical seawall option provides marginal to negligible benefits compared to the proposed project. Given this reality, the applicant's proposed project is preferable; the reduced revetment size and soilnail walls will enhance the visual character and open up 4 to 5 feet of additional beach for lateral public access. Since much of the revetment may be buried by sand during times of sand build-up, additional summer and fall access may also be realized. Therefore, the Commission finds that a vertical seawall alternative, is only feasible to the extent it is supported with toe rock protection, and is therefore not a less environmentally damaging feasible alternative.

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Impacts of Rock Revetment and Soil Nail Wall Alternative (Proposed Project) on Coastal Resources

As discussed further in Sections 4 - 8 below, the revetment currently impacts and will continue to impact sand supply, public access, visual resources and marine resources. Although this alternatives analysis adresses the adverse impacts the proposed revetment will have on these coastal resources, it does so in the context of whether the specifically proposed rock revetment is the least environmentally damaging feasible alternative, even though it is capable of protecting the existing multi-residential bluff-top structures. The applicant proposes to reduce the size of the original revetment (originally constructed pursuant to four emergency permits) by 1,510 cubic yards.

<u>Section 30251</u> requires that scenic and visual qualities of coastal areas "be considered and protected as a resource of public importance." In order to protect the aesthetic beauty of the coastline, development must be sited to 1) minimize the alteration of natural land forms; 2) be visually compatible with the character of surrounding areas; and, where feasible, 3) restore and enhance visual quality in visually degraded areas.

In this case, the proposed revetment is approximately 475 feet long and extends roughly 20 to 30 feet seaward of the bluff. The applicant's property encompasses beach landward of the MHT at 360 Esplanade. According to the State Lands Commission, approximately 10 sq. ft. of rock was originally proposed to encroach upon state lands seaward of the MHT at 360 Esplanade Avenue, but the applicant has subsequently removed this encroachment in the revised project design. The City of Pacifica owns the beach landward of the MHT at 380 Esplanade Avenue. It consists of jagged rock varying in size, weighing anywhere from hundreds to thousands of pounds. Typically, when waves interact with a revetment, there is often rock clutter extending seaward of mean high tide (MHT). In this case, the rock clutter is not seaward of MHT; the rock is often scattered such that the beach appears littered with large rock, otherwise uncharacteristic of the area.

The applicant originally considered the rock to be visually compatible with the character of the surrounding area because the City of Pacifica and other property owners in the nearby vicinity (1-2 miles upcoast/downcoast) have placed large, seemingly permanent revetments to protect other properties. However, the rock protecting 320-340 Esplanade Avenue has not been permitted. Also, the owners at 310 Esplanade Avenue (Lands End project) have opted to build a seawall and have either removed or buried the toe protection rock. Additionally, the applicant's argument ignores the case-by-case evaluation inherent in every CDP application review process. In the end, the originally proposed rock revetment is large, appears unnatural on the sand and is often partially scattered seaward of the original and intended footprint (approved pursuant to past emergency permits). The rocks present an uninviting, visually obtrusive element to an otherwise natural bluff. The revetment can be seen from the north or south at the top of the bluff and on the beach. Accordingly, the applicant is now proposing to remove about 44% of the rock in Areas 1 and 2, about 55% of the rock in Areas 3, 4 and 5, all of the rock in Area 6, about 46% of

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the rock in Areas 7a and 7b, and about 33% of the rock in Area 8^6 (at least 4,555 tons of rock) in order to reduce the visual impacts.

Given the Coastal Act's directives to make new development visually compatible with the character of the surrounding areas and to restore or enhance the visual quality where feasible, the Commission finds the proposed (reduced) revetment to be consistent with 30251 to the extent measures are taken by the applicant to remove the cluttered rock from the public beach and to restore the natural bluff face where feasible. The proposed soil-nail walls (described below) will take the place of some of the removed rock, and will improve the visual character of this stretch of coastline, because the soil-nail walls are colored and textured to resemble the natural bluff material.

<u>Sections 30230 and 30231</u> require that marine resources "be maintained, enhanced, and where feasible, restored." Additionally, uses of the marine environment must be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific and educational purposes.

In this case, the proposed revetment supports the bluff seaward of 360 and 380 Esplanade, extending roughly 20-30 feet seaward of the bluff. It is clear from historical photos prior to the revetment's placement and current photos that the existing (emergency) revetment has fundamentally altered the shoreline to the benefit of the apartment buildings, but to the detriment of the beach habitat and species accumulation and prevalence. The portions of the beach upcoast and downcoast of the revetment have drastically moved landward while the revetment maintains the subject bluff's location. It appears that occasionally, during the typical tidal activity (excluding storms/surges), dry beach accumulates in nearby regions of the beach just north and south of the revetment. As a result, beach wrack, natural ocean debris and habitats exist for certain beach and bluff species reliant on these special ecosystems.

These wrack habitats are virtually nonexistent on the beach seaward of the revetment which is commonly inundated and therefore seldom dry. While the lack of dry sand is not unique to this particular revetment, it is possible that a protective device with a slimmer profile could more frequently result in dry beach seaward of the bluff. Additional availability of dry beach could keep species corridors open and reduce micro-level habitat and species displacement due to lack of transportation corridors. To the extent it is feasible for the applicant to pull the revetment's footprint landward, any additional beach would increase the chances that dry beach could occasionally accumulate during the year. The applicant has proposed burying the three most seaward feet of the revetment toe, in order to provide more beach area.

Therefore, the Commission finds the only alternative that could minimally improve marine resources and habitat would be a vertical seawall without toe protection; however, this alternative is infeasible, as discussed above. Given that rock will be necessary to protect the subject properties, the applicant's proposal to pull the revetment as far landward as possible and bury three feet of rock at the revetment toe is the least environmentally damaging feasible

⁶ Based on description from David Skelly, and profiles of the shore protection, dated September 23, 2011.

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alternative consistent with Section 30235 of the Coastal Act because it will serve to maintain or enhance healthy populations of typical wrack ecosystem habitat for scientific purposes in addition to the continued existence of beach and bluff species to the maximum extent feasible.

<u>Section 30210</u> requires the Commission to provide the public with maximum access and recreational opportunities, while respecting the rights of private property owners. Section 30211 prohibits development from interfering with the public's right of access to the sea. In approving new development, Section 30212 requires the Commission to provide access from the nearest public roadway to the shoreline and along the coast, save certain limited exceptions, including existing adequate nearby access.

In this case, the beach sand seaward of 360 Esplanade and landward of the MHT lies within the privately-owned 360 Esplanade parcel according to the relevant parcel map and written conveyance. The State Lands Commission staff has determined the MHT line to be seaward of the proposed revetment. The existing (emergency) revetment seaward of the bluff at 360 Esplanade therefore exists within the recorded legal description of the applicants' property. Over time, however, shoreline erosion will continue and seasonal beach change will further impair lateral beach access, eventually resulting in an impassable stretch of coastline historically used by the public. Eventually, the MHT will move inland and intersect more and more sections of the rock revetment, further inhibiting access.

At 360 Esplanade Avenue, where the beach lies within private property and is landward of the MHT as surveyed on March 31, 2009 (**Exhibits 7 and 8**), empirical evidence, based upon numerous staff trips to this particular site, suggests there is little to no lateral access between the ocean and the applicant's revetment unless during low tide. Often lateral movement in front of the revetment from one end to the other requires running and avoiding the waves.

The City of Pacifica owns the bluff face and sand seaward of 380 Esplanade and landward of the MHT and holds it for public recreational purposes. Currently, the public (city-owned) beach seaward of 380 Esplanade is less conducive to lateral access due to its proximity to the SLC-identified MHT (depending on the tidal conditions). As you walk farther upcoast toward the 360 Esplanade property line, lateral access expands significantly depending on the wave action. The existing/proposed revetment that supports the existing structure at 380 Esplanade Avenue sits entirely upon City property.

Given that the existing (proposed) revetment extends roughly 20-30 ft seaward of the bluff, the existing (emergency) revetment would likely result in severely impaired lateral access well before a narrower structure. Attempts to reduce the size of the proposed revetment (in order to narrow the structure), as proposed, will delay the inevitable loss of public access. The applicant proposes to narrow the existing (emergency) revetment to provide continued lateral access. The proposed revetment/toe stone and soil nail configuration will reduce the encroachment of rock down to 20 feet for Areas 2, 5, and 7b and encroachment of 23 feet for Area 8. (**Exhibit 4**). The total area of encroachment will be 8,950 square feet. The revetment will also prevent the creation of an additional 12,105 square feet of beach through passive erosion that would occur from the time of revetment installation through the next 20 years.
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Through Special Condition 1, the Commission adopts the proposed alternative that will both enhance and prolong lateral access along this stretch of coast, consistent with the Coastal Act. As proposed, the existing (emergency) revetment will be pulled landward between 4 to 5 feet, allowing at least a minimal amount of additional beach upon which visitors can laterally access the beach seaward of the entire property. The profile of the revetment, with the seaward-most portion buried below the normal sand level, will allow increased pedestrian access during times of high sand levels.

Commission staff has evaluated current erosion rates and the approximate existing water levels as they interact with this stretch of coast in order to illustrate a plausible future for the beach seaward of the applicant's property. As described below in Section 4(d), Special Condition No. 2 authorizes the proposed development for twenty years from October 7, 2011 to October 7, 2031. At the end of that period, the Commission will be able to specifically evaluate the effect current erosion rates have on these properties, the beach and any shoreline structure over the next 20 years.

In summary, while the proposed revetment will reduce the size of the existing revetment configuration, it will continue to adversely impact visual resources, marine resources and public access. However, the applicant's proposal attempts to minimize these impacts, particularly visual impacts and public access, by using textured/colored soil-nail walls where feasible to deal with visual impacts, and proposing a lateral access dedication over the 14,171 sq. ft. of private beach at 360 Esplanade Avenue. Accordingly, given the infeasibility of a vertical seawall without toe protection (discussed above), the Commission concludes that the proposed revetment, combined with the proposed soil nail wall described below, as conditioned, is the least environmentally damaging, feasible alternative protective device that will protect the existing residential structures at 360 and 380 Esplanade Avenue, consistent with the requirements of Section 30235 of the Coastal Act.

(d) <u>Sand Supply Impacts</u>

The final test of Section 30235 requires that shoreline structures be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullying, etc. Many coastal bluffs contain marine terrace deposits that may consist, in part, of ancient beach deposits that formed when land and sea levels differed from current conditions. Since some marine terrace deposits consist of ancient beach material, a large proportion of the material in the terraces is often beach quality sand or cobble, and a valuable contribution to the littoral system when it is added to the beach. While beaches can be preserved as marine terrace deposits over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide material to the beach. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action that may cause cave

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formation, enlargement and eventual collapse, and saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration. When a shoreline protective device covers the back-beach or bluff, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach.

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

Although shoreline protection is required to protect the existing principal structures at 360 and 380 Esplanade Avenue, Section 30235 requires that shoreline protection be designed to eliminate or mitigate adverse impacts on local shoreline sand supply. There are a number of adverse impacts to public resources associated with the construction of shoreline protection, such as the formation and retention of sandy beaches, which can be significantly altered by soil-nail walls, since bluff retreat is one of several ways that beach area and beach quality sand is added to the shoreline.

Some of the effects of a shoreline protective structure on the beach such as scour, end effects and modification to the beach profile are temporary or difficult to distinguish from all the other actions which modify the shoreline. Shoreline protective devices, such as revetments and soil-nail walls also have non-quantifiable effects to the character of the shoreline and visual quality. A beach is the result of both sandy material and a physical area between the water and the back beach. Thus, beach area is not simply a factor of the quantity of sandy beach material. However, some of the effects that a structure may have on natural shoreline processes can be quantified. Three of the effects from a shoreline protective device which can be quantified are: 1) loss of the beach area on which the structure is located; 2) the long-term loss of beach which will result when the back beach location is fixed on an eroding shoreline; and 3) the amount of material which would have been supplied to the beach if the back beach or bluff were to erode naturally.

It has proven difficult over the years to identify appropriate mitigation for such impacts. Partly this is because creating an offsetting beach area is not an easy task, and finding appropriate properties that could be set aside to become beach area over time (through natural processes, including erosion) is difficult both due to a lack of such readily available properties and the cost of such coastal real estate more broadly. Other types of mitigation typically required by the Commission for such direct sand supply impacts have been in-lieu mitigation payments and/or beach nourishment, and in some cases compensatory beach access improvements. With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system over time to mitigate the loss of sand that would be caused by a protective device over its lifetime. Although the eventual loss of total beach area cannot be directly replaced, the volume of sand equivalent to the lost area can be estimated. This estimated impact on sand supply used to determine the in-lieu payment is only a "rough

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approximation" of the impact of the revetment and soil-nail walls on beach area because a onetime placement of this *volume* of sand cannot actually result in creation and maintenance of beach *area* over the long term. Obviously, such an introduction of sand, if properly planned, can feed into the San Francisco-Santa Cruz Littoral Cell sand systems to mitigate the impact of the project. However, as opposed to other areas with established programs (e.g., SANDAG in San Diego) there are not currently any existing beach nourishment programs directed at this beach area. Absent a comprehensive program that provides a means to coordinate and maximize the benefits of mitigation efforts in the area now and in the future, the success of piecemeal mitigation efforts, such as an Applicant-only project to drop equivalent amounts of sand over time at this location, is speculative.

As an alternative mitigation mechanism, the Commission oftentimes uses an in-lieu mitigation payment when in-kind mitigation of impacts is not available.⁷ In situations where ongoing sand replenishment or other appropriate mitigation programs are not yet in place, the in-lieu mitigation payment is deposited into an account to fund projects which increase public beach access in the affected area, and the payments can then be used to offset the designated impacts. When mitigation funds are pooled in this way for multiple projects in a certain area, the cumulative impacts can also be better addressed inasmuch as the pooled resources can sometimes provide for a greater mitigation impact than a series of smaller mitigations based on individual impacts and payments. The following is the typical methodology used by Commission staff to calculate the impacts to natural shoreline processes and develop the amount that should be paid in-lieu of actual deposition of new sand on the region's beaches. The methodology uses site-specific information provided by the applicant as well as estimates, derived from region-specific criteria, of both the loss of beach material and beach area which could occur over the life of the structure, and of the cost to purchase an equivalent amount of beach quality material and to deliver this material to beaches in the project vicinity.

The following is a description of the methodology.

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

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

where

 $V_b = Volume of beach material that would have been$ supplied to the beach if natural erosion continued, based onthe long-term regional bluff retreat rate, design life of thestructure, percent of beach quality material in the bluff, andbluff geometry (cubic yards). This is equivalent to the longterm reduction in the supply of bluff material to the beachresulting from the structure.

⁷ See, for example, CDP A-3-SCO-06-006 (Willmott), CDP A-3-SLO-01-040 (Brett), CDP 3-98-102 (Panattoni) and CDP 3-97-065 (Motroni-Bardwell).

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

> $V_e = V$ olume of sand necessary to replace the area of beach lost due to encroachment by the seawall; based on the seawall design and beach and nearshore profiles (cubic yards)

$$V_{b} = (S \times W \times L/27) \times [(R h_{s}) + (h_{u}/2 \times (R + (R_{cu} - R_{cs})))]$$

where

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

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

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

h = Total height of armored bluff (ft.)

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

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

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

 R_{cu} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, 2-08-020 (Aimco) 9/23/2011 Page 37 of 56

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

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

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

$\mathbf{V}_{\mathbf{W}} = \mathbf{R} \times \mathbf{L} \times \mathbf{v} \times \mathbf{W}$

where

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

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

 \mathbf{v} = Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall; based on the vertical distance from the top of the beach berm to the seaward limit of reversible sediment movement (cubic yards/ft of width and ft. of retreat). The value of v is often taken to be 1 cubic yard per square foot of

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	beach. In the report, Oceanside Littoral Cell Preliminary Sediment Budget Report" (December 1987, part of the Coast of California Storm and Tide Wave Study, Document #87- 4), a value for v of 0.9 cubic yards/square foot was suggested. If a vertical distance of 40 feet is used for the range of reversible sediment movement, v would have a value of 1.5 cubic yards/square foot (40 feet x 1 foot x 1 foot / 27 cubic feet per cubic yard). These different approaches yield a range of values for v from 0.9 to 1.5 cubic yards per square foot. The value for v would be valid for a region, and would not vary from one property to the adjoining one. Until further technical information is available for a more exact value of v, any value within the range of 0.9 to 1.5 cubic yards per square foot could be used by the applicant without additional documentation. Values below or above this range would require additional technical support.
	\mathbf{W} = Width of property to be armored (ft.)
$\mathbf{V}_{\mathbf{e}} = \mathbf{E} \ge \mathbf{W} \ge \mathbf{v}$	
where	\mathbf{E} = Encroachment by seawall, measured from the toe of the bluff or back beach (ft.)
	\mathbf{W} = Width of property to be armored (ft.)
	\mathbf{v} = Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall, as described above;
$\mathbf{M} = \mathbf{V}_t \ge \mathbf{C}$	
where	M = Mitigation Payment
	V_t = Total volume of sand required to replace losses due to the structure, through reduction in material from the bluff, reduction in nearshore area and loss of available beach area (cubic yards). Derived from calculations provided below.
	C = Cost, per cubic yard of sand, of purchasing and transporting beach quality material to the project vicinity (\$ per cubic yard). Derived from the average of three written estimates from sand supply companies within the project

vicinity that would be capable of transporting beach quality

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> material to the subject beach, and placing it on the beach or in the near shore area.

The Applicant has proposed a sand supply mitigation payment of 289,014.96, to mitigate the impact the soil-nail walls and rock revetment will have due to its prevention of sand reaching the littoral cell. The existing and proposed soil-nail walls at 360 Esplanade cover an approximately 7,722-square-foot section of the upper bluff. The two new proposed soil-nail walls (Areas 4 and 7a) will cover no more than 3,122 sq. ft. of bluff, an area currently covered by rock revetment (as placed pursuant to emergency permits). Accordingly, from the time of installation, through the 20-year authorization period of the proposed shoreline protection (revetment and soil-nail walls), 8,840.4 c.y. of sand will be prevented from reaching the littoral cell and 8,950 square feet of beach will be covered by the revetment. Fixing the location of the back beach will prevent the creation of 12,105 square feet of new beach over the time period of the proposed shore protection. Therefore, and to mitigate this loss of sand to the beach and these losses of beach area, the applicant has proposed to pay a mitigation payment of 289,014.96. Additionally, the applicant proposes a lateral access dedication over 360 Esplanade Avenue, in order to ensure access over a portion of the privately owned beach.

Many of the adverse effects of the proposed shoreline protective devices on sand supply will occur gradually. In addition, the adverse effects impact the entire littoral cell but to different degrees in different locations throughout the cell (based upon wave action, submarine canyons, etc.). Therefore, Special Condition No. 5 requires the applicants to make a payment in-lieu of directly depositing the sand on the beach, because mitigation of the adverse effects on sand supply is most effective if it is part of a larger project that can take advantage of the economies of scale and result in quantities of sand at appropriate locations in the affected littoral cell in which it is located. The funds will be used only to implement projects which benefit the area where the payment was derived, and provide public access improvements within the Pacific Manor region of the City of Pacifica. The methodology provides a means to quantify the sand and beach area that would be available for public use, were it not for the presence of the proposed bluff protection. The methodology ensures that the payment is roughly proportional to the impacts to sand supply attributable to the proposed bluff protection.

In addition to the adverse impacts the revetment will have on the physical beach area due to encroachment, the Commission finds that the proposed soil-nail walls and revetment could also have adverse impacts on adjacent unprotected properties caused by wave reflection, which leads to accelerated erosion. Numerous studies have indicated that when continuous protection is not provided, unprotected adjacent properties experience a greater retreat rate than would occur if the protective device were not present. This is due primarily to wave reflection off the protective structures and from increased turbulence at the terminus of the protective structures. According to James F. Tait and Gary B. Griggs in <u>Beach Response to the Presence of a Seawall (A Comparison of Field Observations)</u> "[t]he most prominent example of lasting impacts of [armoring] on the shore is the creation of end scour via updrift sand impoundment and downdrift wave reflection. Such end scour exposes the back beach, bluff, or dune areas to higher swash energies and wave erosion." As such, as the base of the bluff continues to erode on the

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unprotected adjacent properties to the north, collapse of the bluff is likely. Thus, future collapses could "spill over" onto other adjacent unprotected properties, prompting requests for much more substantial and environmentally damaging shoreline protective devices to protect the residences. This then starts a "domino" effect of individual requests for protection.

However, although the proposed soil-nail walls must be designed to reduce impacts of the wall on adjacent properties to the north, at best, the impacts can be reduced, but not eliminated. Regardless of whether accelerated erosion will occur on the adjacent unprotected properties, the adjacent bluffs will continue to erode due to the same forces that are causing them to erode currently. As this occurs, more surface area of the feathered edges will be exposed to wave attack leading to increased turbulence and accelerated erosion of the below unprotected bluff. These impacts are particularly problematic in the case of the proposed project, as the soil-nail wall will be an isolated structure in a stretch of largely unprotected shoreline.

To ensure that this project does not prejudice future shoreline planning options, including with respect to changing and uncertain circumstances that may ultimately change policy and other coastal development decisions (including not only climate change and sea level rise, but also due to legislative change, judicial determinations, etc.), this approval is hereby limited to a twentyyear authorization period. Shoreline armoring, particularly in such a significantly high-hazard area as this project, tends to be augmented, replaced, and/or substantially changed within about twenty years. Rising sea levels, erosion rates and attendant consequences will tend to further delimit such a time period in the future, potentially dramatically, depending on how far sea level actually rises. Further, a twenty-year period better responds to such potential changes and uncertainties, including to allow for an appropriate reassessment of continued armoring and its effects at that time in light of what may be differing circumstances than are present today, including with respect to its physical condition after twenty years of existence. In addition, with respect to climatic change and sea level rise specifically, the understanding of these issues should improve in the future, given better understanding of the atmospheric and oceanic linkages and more time to observe the oceanic and glacial responses to increased temperatures, including trends in sea level rise. Such an improved understanding will almost certainly affect CDP armoring decisions, including at this location. Of course it is possible that physical circumstances as well as local and/or statewide policies and priorities regarding shoreline armoring are significantly unchanged from today, but it is perhaps more likely that the baseline context for considering armoring will be different - much as the Commission's direction on armoring has changed over the past twenty years as more information and better understanding has been gained regarding such projects, including their effect on the California coastline. For these reasons, the Commission is authorizing the proposed project for 20 years from the date of this approval. This limitation is implemented through Special Condition Nos. 3 and 4. The intent of these conditions is to limit further encroachment on the public resources (adjacent bluff and beach) with additional lower-bluff protective devices, and to allow for potential removal of the approved soil-nail walls and revetment when they are no longer necessary to protect the development that required the protection.

Through Special Condition No. 3, the property owner is required to acknowledge the risks inherent in the subject property and that there are limits to the structural protective measures that may be permitted along the shoreline in order to protect the existing development in its current

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location. The condition also places the property owner on notice that redevelopment of the parcels should not rely on bluff or shoreline protective works for stability and such alternatives as removing the seaward portion(s) of the structure, relocation inland, and/or reduction in size should be considered to avoid the need for bluff or shoreline protective devices in this hazardous area. In other words, the proposed soil-nail walls and revetment are in a hazardous location and not a permanent structure. It has been approved for the protection of the existing residences at 360 and 380 Esplanade Avenue to meet the requirements of the Section 30235 and is not approved in order to accommodate future redevelopment of the site in the same location. If a new structure is proposed in the future, it must be located in an area where the development is consistent with the applicable Coastal Act policies regarding geologic safety and protection from hazards, as though the soil-nail walls and revetment do not exist, and the public access and recreation provisions of the Coastal Act. Such options are all feasible for new development and would stop the perpetuation of development in non-conforming locations that would eventually lead to complete armoring of the bluffs and long-term, adverse impacts to any adjacent public beach and State tidelands. Special Condition No. 3 recognizes that the proposed shoreline protection is being approved under Section 30235 to protect existing structures in danger from erosion. Any future redevelopment of the affected properties will re-evaluate current conditions and new development should be sited safely, independent of any shoreline protection.

As conditioned, the Commission therefore finds that the proposed soil-nail walls and revetment is required to protect the existing structures at 360 and 380 Esplanade Avenue and has been designed to minimize impacts on shoreline sand supply consistent with the requirements of Coastal Act Section 30235.

5. Geologic Hazards

Section 30253 of the Coastal Act states in applicable part:

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...

Shoreline Dynamics

Coastal Act Section 30253 requires new development to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. This is particularly critical given the dynamic shoreline environment within which the proposed project would be placed. Moreover, with continued erosion, climate change and sea

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level rise,⁸ increased wave heights and wave energy are expected. Along much of the California coast, the bottom depth controls the nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in water depth and wave height can cause a significant increase in wave energy and wave damage. Combined with the physical increase in water elevation, a small rise in sea level can expose previously protected backshore 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 adequate for current storm conditions may not provide as much protection in the future.

A second concern with climate change 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 more often.

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 Nino 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.

Revetment Stability

For revetments, an important component of long-term stability is the function of a keyway to "lock" the revetment into place. Portions of the existing revetment that were constructed in 1998 & 1999 are keyed into bedrock. The 230-foot-long segment of the revetment most recently constructed is keyed into competent material (i.e., cemented sand and/or sandstone bedrock) as greenstone bedrock was not encountered along the entire stretch of shoreline as anticipated. Therefore, the proposed revetment will be adequately grounded and capable of supporting the existing blufftop structures at 360 and 380 Esplanade. A revetment that is over-steep (such as revetment at a 1:1 slope) only exacerbates stability problems, as the rocks themselves are less secure. The proposed revetment is constructed at a slope ranging from 1.5:1 to 2:1 to maximize

⁸ There is a growing body of evidence that there has been a slight increase in global temperature and that acceleration in the rate of sea level can be expected to accompany this increase in temperature. According to the *Fourth Assessment Report – Climate Change 2007*, by the International Panel on Climate Change (IPCC) global sea level is predicted to rise by 0.18 to 0.59 meters (0.5 to 2 feet) from the 2000 level by 2100, with significant regional variability.

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stability of the revetment. While the proposed revetment will result in a reduction of what has been in existence since the 1998, 1999 and 2009 emergency permits, it will remain at a stable slope.

Soil-nail Wall Stability

The existing proposed soil-nail wall at 360 Esplanade Avenue was constructed pursuant to two emergency permits issued in 2010. It continues to provide support to the bluff and structure at 360 Esplanade Avenue. The two proposed soil-nail walls yet to be constructed will be constructed consistent with the practices and principles used to construct the first soil-nail wall. The soil-nail walls will be placed on the mid to upper portions of the bluff face. To avoid future undermining by wave action, the proposed revetment serves as bluff toe protection and compliments the use of the soil-nail walls. It is important that the soil-nail walls incorporate adequate drainage components.

Monitoring and Maintenance

Critical to ensuring long-term stability as required by Coastal Act Section 30253 is a formal long-term monitoring and maintenance program. If the proposed revetment and soil nail wall are damaged in the future (e.g. as a result of landsliding, wave action, storms, seismic activity, etc.) such damages could lead to instability of the revetment and soil nail walls. Such damages could result in debris scattered on the beach, thus creating a public safety hazard to the public using the beach.

Rock riprap revetments are technically mobile structures that move in response to extreme wave action and changing sand levels. Rocks that are less durable also tend to decompose into smaller, more mobile rocks when subjected to large wave impact. Decomposition of rock from natural forces can result in alterations to the dimensions and stability of the shoreline revetment structure as well as cause rocks to shift, migrate, or roll onto the beach, thus triggering the need for maintenance over the life of the structure. The portion of the revetment constructed in 1998-1999 has been in place for over ten years during which it has occasionally migrated seaward, and although the revetment has still performed fairly well, it will require maintenance in the near future. It is assumed that some degree of maintenance will be required as stated by the applicant's geologist in a Geotechnical Investigation report, dated June 15, 2009:

"We anticipate that future maintenance of the revetment may be required to achieve or potentially exceed the 50-year design service life. This includes checking the revetment after each winter storm for settlement or quarry stone migration. If settlement is occurred or observed, addition of quarry stone may be required."

Therefore, to ensure that the proposed project is properly maintained to assure its long-term stability and structural integrity, Special Condition No. 7 requires a monitoring and maintenance program. Further, in order to ensure that the applicant and the Commission know when repairs or maintenance are required, the applicant must regularly monitor the condition of the rock revetment and soil nail walls, particularly after major storm events. Such a program shall

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provide for evaluation of the condition and performance of the proposed project and overall bluff stability, and shall provide for necessary maintenance, repair, changes or modifications. Special Condition No. 7 requires the applicant to maintain the project in its approved state, subject to the terms and conditions identified by the special conditions.

Additionally, Special Condition No. 7 advises the applicant that ongoing maintenance and repair activities which may be necessary in the future could require permits. Section 30610(d) exempts repair and maintenance activities from coastal development permit requirements unless such activities enlarge or expand a structure or the method of repair and maintenance presents a risk of substantial adverse environmental impact. The Commission's regulations identify those methods of repair and maintenance of shoreline protective devices that are not exempt (see California Code of Regulations Section 13252).

Assumption of Risk

The proposed development is located on the Pacifica shoreline, in an area subject to inundation and extreme wave forces, as well as shoreline retreat and erosion. Development in such dynamic environments is susceptible to damage due to such long-term and episodic processes. Past hazard occurrences statewide have resulted in public costs (through low 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 placing the economic burden for damages onto the people of the State of California, applicants are regularly required to acknowledge site geological risks and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Although the project has been designed by a licensed engineer, the location of the revetment and soil-nail walls is exposed to powerful shoreline processes. The construction of shoreline protection structures involving the use of heavy construction equipment and the placement of large boulders is inherently hazardous. The proposed development also involves risk that the proposed revetment improvements will not protect against damage from bluff failure and erosion. Although the Commission has sought to minimize these risks, such risks can never be eliminated entirely. Because the applicant voluntarily proposes to undertake an inherently hazardous activity, the Commission imposes Special Condition No. 12, requiring the applicant to assume the risks of any injury or damage from such hazards, waive any claim of liability against the Commission for such injury or damage, and indemnify the Commission against any resulting third party claims or liability. Special Condition No. 14 requires the applicant to record a deed restriction imposing the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property in the event that the property is conveyed to another party.

As conditioned, the Commission finds that these hazards associated with the proposed revetment and soil nail wall developments have been reduced to the maximum extent feasible, consistent with Section 30235 and Section 30253 of the Coastal Act.

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6. Public Access and Recreation

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

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

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

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

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

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

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

Section 30210 requires the Commission to provide the general public maximum access and recreational opportunities, while respecting the rights of private property owners. Section 30211 prohibits development from interfering with the public's right of access to the sea. In approving new development, Section 30212 requires the Commission to provide access from the nearest public roadway to the shoreline and along the coast, save certain limited exceptions, including existing adequate nearby access.

The Commission is tasked with the present and future implications of shoreline protective devices on the beach. Depending on the beach profile, seasonal tidal activity and continued sea

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level rise, the mean high tide line will move landward over the next 20 years and beyond. Therefore, it is critically important that the Commission assess whether the revetment, which if authorized would be authorized for a 20 year period, would impact public access and recreation over that 20 year period.

In this case, the critical inquiry turns on the underlying ownership of the beach. The sand seaward of 360 Esplanade and landward of the MHT lies within the private 360 parcel (APN 009-413-060) according to the relevant parcel map and a 2009 MHT survey (Exhibits 3, 4, 7 and 8). Accordingly, the revetment is not blocking public access landward of the mean high tide line with regard to 360 Esplanade Avenue. However, as described in Sections 3 and 4, the revetment at 360 Esplanade Avenue does hinder lateral access in the area in front of the revetment that has been used informally by the public, and over time the walkable beach area will continue to narrow until this stretch can no longer be traversed. The City of Pacifica holds a Hiking and Equestrian Easement over the seaward 20 ft. of the 360 esplanade property line, but this easement is non-ambulatory and therefore decreases in size each year due to rising sea levels and beach erosion rates. Currently, the proposed revetment extends roughly 20-23 ft seaward of the bluff.⁹ Some of the proposed revetment that is already in place might encroach upon the easement, but the proposed project will remove any rock from the easement area. The reduction in the existing (emergency) revetment's size and the movement landward will slightly enhance and prolong lateral access along this stretch of coast. The applicant also proposes to offer a lateral access easement along the private beach area at 360 Esplanade Avenue, totaling 14,171 sq. ft.

The Applicant presented two surveys that were conducted at or near the site in 2008 and March 2009. Using this information, the State Lands Commission in November 2009 determined that the entire revetment at 360 Esplanade Avenue (except 10 square feet) was landward of the mean high tide line and therefore was not encroaching on public trust lands. On November 17, 2009, the State Lands Commission staff determined "all but an approximately ten square foot area of the existing and proposed rock revetment to be landward of the elevation of mean high tide." The recently revised proposed project reduces the revetment and removes the ten square feet of rock from the area identified by the State Lands Commission. The revetment seaward of the bluff at 360 Esplanade therefore exists entirely within the recorded legal description of the property. Over time, however, continued erosion and seasonal beach profiles will further impair lateral access at 360 Esplanade Avenue, eventually resulting in an impassable stretch of coastline informally used by the public. Empirical evidence, based upon numerous trips to this particular site, suggests there is little to no lateral access between the ocean and the applicant's revetment unless during low tide. Often lateral movement in front of the revetment from one end to the other requires running and avoiding the waves. The applicant has stated on several occasions that the revetment and the toe of the bluff are subject to very consistent wave action.

In comparison, the City of Pacifica (i.e. the public) owns the sand seaward of 380 Esplanade and landward of the MHT, which was granted to the City in 1955 for recreational purposes only. Currently, the public (city-owned) beach seaward of 380 Esplanade is less conducive to lateral

⁹ The applicant proposes to move the emergency revetment up to 5 feet landward of its current footprint along both 360 and 380 Esplanade Avenue

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access due to its proximity to the SLC-identified MHT (depending on the tidal conditions). As you walk farther upcoast toward the 360 Esplanade property line, lateral access expands significantly depending on the wave action. The existing/proposed revetment that supports the existing structure at 380 Esplanade Avenue sits entirely upon City property. This project will result in 8,400 sq. ft. of lost recreational beach land owned by the City of Pacifica (3,450 square feet of direct encroachment and 4,950 square feet of beach lost due to fixing the back beach location, from the time of installation of the revetment through the 20-year authorized period of this project.

Development along the shoreline which may burden public access in several respects has been approved by the Commission. However, when impacts to public access cannot be avoided and have been reduced to the maximum extent feasible, mitigation for any remaining adverse impacts of the development on public access and public resources is required. The Commission's permit history reflects the experience that development can physically impede public access directly, through construction adjacent to the mean high tide line in areas of narrow beaches, or through the placement or construction of protective devices, seawalls, rip-rap, and revetments. Since physical impediments adversely impact public access and create a private benefit for the property owners, the Commission has found in such cases (in permit findings of CDP 4-87-161,Pierce Family Trust and Morgan; CDP 6-87-371, Van Buskirk; CDP 5-87-576, Miser and Cooper; CDP 3-02-024, Ocean Harbor House; 6-05-72, Las Brisas, 6-07-133/Li, 6-07-134/Caccavo, 6-03-33-A5/Surfsong, 6-08-73/DiNoto, et.al, 6-08-122/Winkler and 6-09-033/Garber) that a public benefit must arise through mitigation conditions in order for the development to be consistent with the access policies of the Coastal Act, as stated in Sections 30210, 30211, and 30212.

Appropriate mitigation for the subject development includes the applicant's proposed creation of 14,171 sq. ft. of additional public beach area in close proximity to the impacted beach area. In addition to the more qualitative social benefits of beaches (recreational, aesthetic, habitat values, etc.), beaches provide significant direct and indirect revenues to local economies, the state, and the nation. There is little doubt that the loss of 8,400 sq. ft. of public sandy beach (in front of 380 Esplanade) in Pacifica represents a significant impact to public access and recreation, including a loss of the social and economic value of this recreational opportunity. The question becomes how to adequately mitigate for these qualitative impacts on public recreational beach use and whether the proposed lateral access dedication sufficiently mitigates the lost public beach area.

In the past ten to fifteen years, the Commission has approved the construction of shoreline devices along the California Coast when they are necessary to protect an existing primary structure and when mitigation is provided according to a formula that the Commission developed to address some of the more easily quantifiable effects on local sand supply, as required by Section 30235 of the Coastal Act. In each of those decisions, the Commission recognized that the mitigation in the form of an in-lieu payment paid for the purchase of sand to offset the sand lost by the shoreline structure, provided some, but not all mitigation, associated with the adverse impacts of shoreline devices.

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In recent years, the Commission has sought additional ways to quantify the adverse impacts to public access and recreation that result from shoreline protective devices and, thereby, develop more appropriate mitigation for those impacts.

Comparison to other Recent Public Access/Recreation Mitigation Approaches.

In October 2004, the Commission approved the construction of a 585 ft. long seawall fronting a 172 unit condominium complex in Monterey which was estimated to impact 43,500 sq. ft. of beach area over a 50 year period (CDP# 3-02-024/Ocean Harbor House). To mitigate the adverse impacts of the seawall on public access and recreational opportunities, and in lieu of purchasing a comparable area of beach, the Commission required a mitigation payment of \$5,300,000.00. This payment was derived from the cumulative 50 year recreational beach impact based on an estimated annual value of the beach area lost of \$4,148.

In 2005, the Commission approved the construction of a 120 ft.-long, 2 ½ ft. wide seawall below the Las Brisas condominium complex in Solana Beach (CDP# 6-05-72/Las Brisas). The seawall was located below the dripline of the bluff and involved the fill of a 410 sq. ft. void. Therefore, the land area impacted over the 22 year design life of the seawall was estimated to be 1,364.8 sq. ft. After hiring an economist, Dr. Phillip King, to perform an economic analysis of the lost recreational value associated with the construction of the seawall, the Commission determined that the applicant should pay a mitigation payment of \$248,680.72. The payment was designed to be used for purchase of beach land and/or recreational beach park amenities.

In June 2010, the Commission approved construction of a 57 ft. long seawall fronting a singlefamily house in Encinitas which was estimated to impact 801 sq. ft. of beach area over a 20 year period (CDP# 6-07-133/Li). To mitigate the adverse impacts of the seawall on public access and recreational opportunities, and in lieu of purchasing a comparable area of beach, the Commission required the applicant to pay a mitigation payment based on a current per sq. ft. real estate appraisal of the blufftop lot (without improvements) multiplied by 801 sq. ft. of lost public beach. This method was selected due to a lack of specific recreational empirical data necessary to determine the value of the lost public beach. While the value of the public beach is likely to be higher than the value of a blufftop parcel because of the public benefit derived from its use, the Commission determined that the unimproved blufftop appraisal was appropriate until a more accurate method of determining economic value of the loss to public access and recreational opportunities is identified in Encinitas.

These examples identify a range of mitigation values that have been applied in other cases and highlight the difficulty and variety of factors used in determining the appropriate method of mitigating significant adverse impacts on coastal resources. In each case and many others not specifically mentioned, the Commission found that the mitigation did not fully mitigate for the loss of the public beach and, thereby, the loss of public access and recreational opportunities. In some areas along the California coast, recreational values have been calculated, in order to determine the economic value of lost recreational area. Currently, no site-specific data exists that can be used to estimate the economic recreational value of the beach loss proposed. In the case of the proposed protective device, the loss of 8,400 sq. ft. of public beach (380 Esplanade

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Avenue) cannot be fully offset by a mitigation payment since the beach itself cannot be replaced. The obstructed public beach will result in the public's inability to walk seaward of the revetment without being endangered by wave action.

The applicant has offered to dedicate 14,171 sq. ft. of lateral public access at 360 Esplanade Avenue. This dedication will help to offset the lost area of beach and result in approximately 5,771 additional square feet of nearby public beach. While this dedication will not facilitate better lateral public access seaward of the revetment on public land (380 Esplanade Avenue), it is public beach irrevocably offered for dedication by the applicant. In addition to the proposed offer to dedicate, the applicant has proposed a sand supply mitigation payment of \$289,014.96 (discussed in Section 4), which will directly enhance public access and recreation along the nearby Pacifica shoreline. Taken together, the proposed mitigation will result in additional public beach area and funding to enhance public access and recreation. Overall, though, any payment or dedication of adjacent property for public use must be considered only partial mitigation for the impacts of the proposed project, since no measure can prevent the loss of the existing recreational beach currently fronting 380 Esplanade Avenue. Nothing can completely mitigate for the loss of the beach in front of 380 Esplanade Avenue due to development of the proposed revetment and adjacent soil-nail walls. The Commission finds that the above-discussed public access dedication along the beach at 360 Esplanade Avenue only partially mitigates for the loss of public beach in front of 380 Esplanade Avenue due to development of the revetment and is based on an estimated 20-year authorization period. If the shoreline protection continues to exist after 20 years, additional mitigation will be necessary to help offset the continuing impacts to public access that will result if the revetment remains in place after 20 years. Therefore, given the aforementioned constraints, the Commission finds that the proposed mitigation adequately mitigates the adverse impacts the proposed project will have on coastal resources, in particular, public access along the shoreline.

In addition, the use of the beach or public parking areas for staging of construction materials and equipment can also impact the public's ability to gain access to the beach. The applicants have submitted a preliminary construction staging and material storage plan for the subject development. Beach access to the site will occur via the 400 block of Esplanade Avenue, which is adjacent to the subject site. Special Condition No. 8 has been attached to mitigate the impact of such construction activities on public parking areas and public access. Special Condition No. 8 prohibits the applicants from storing vehicles on the beach overnight, using any public parking spaces along Esplanade Avenue overnight for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach. The condition also prohibits (between Memorial Day to Labor Day) of any year. Special Condition No. 10 acknowledges that the issuance of this permit does not waive the public rights that may exist on the property.

Therefore, as conditioned, the Commission finds the proposed project consistent with Coastal Act public access and recreation protection policies 30210, 30211, 30212(a), 30213, 30220 and 30221 to the maximum extent feasible consistent with the requirements of Section 30235 of the Coastal Act.

7. Visual Resources

Section 30251 of the Coastal Act states, in part:

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

The Coastal Act requires that development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, and to be visually compatible with the character of surrounding areas.

As discussed in the Public Access and Recreation finding and Section 4(a)(3), the project site is located along an important beach recreation area in Pacifica and is a significant coastal access location for residents and visitors alike. Although much of the Pacifica shoreline has been visually degraded by the placement of rock riprap revetments, it remains a valuable view area and should be protected. Any construction on the bluffs alters the natural appearance of the landscape, and has a significant impact on the scenic quality of the beach and bluff environment. The proposed rock riprap revetment and the soil nail walls would be visible to the public from public blufftop recreation areas, public tidelands and the ocean.

<u>Soil Nail Wall</u>

The proposed soil nail walls along a portion of the upper bluff, alters the natural appearance of the bluffs and shoreline at the site. To mitigate the visual impacts of shoreline protective devices, the Commission has, in some cases, required landscaping and native planting across the top of the bluff to "drape" over the top of a revetment, thus softening its visual impact (Ref. CDP No. 3-03-108/Davis). However, in this case, given the approximately 80-foot height of the subject bluff, and the erosive nature of the bluff material, it is not feasible to plant vegetation across the top of the bluff in a manner that would screen the rock revetment at the base of the bluff, or the soil nail walls. Additionally, the Commission typically requires that shoreline devices utilize sculpted and colored concrete that upon completion closely mimic the natural surface of the bluff face. A soil-nail wall can be colorized and textured to match the existing bluffs in ways that are not possible with rock revetments. While there is little that can be done to minimize the visual impact of the rock riprap revetment at this site, the proposed soil nail walls (including the existing wall constructed pursuant to 2-10-011-G and -017-G) would be covered with shotcrete, a material that can be colored and textured to visually blend with the surrounding bluff face. The applicant proposes that the reinforcing steel grid element of the soil nail wall will be covered with colored concrete that will be sculpted to look like the natural adjacent bluff. The proposed existing soil-nail wall built pursuant to emergency authorization, utilized the coloring and texturing techniques successfully. The two additional proposed soil-nail walls would also utilize these techniques. Special Condition No. 1 requires that the soil nail walls be faced with a sculpted concrete surface that mimics, to the maximum extent feasible, the color and texture of

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the adjacent bluff face. In addition, Special Condition No. 1 requires that after a small test section has been faced and allowed to cure to its final expected color, configuration, and texture, the permittee shall notify Commission planning staff to arrange for a site visit to verify that the soil nail wall facing approximates the approved expected finished facing product required in Special Condition No. 1.

As conditioned above, the Commission finds that the visual impacts associated with the proposed soil-nail walls have been reduced to the maximum extent feasible, consistent with the requirements of Coastal Act Section 30235 and Section 30251 of the Coastal Act.

Rock Revetment

In this case, the proposed revetment is approximately 475 feet long and would extend roughly 20 to 23 feet seaward of the bluff. The proposed revetment still consists of jagged rock 4 to 10 ton rip rap rock. As the waves interact with the revetment there is often rock clutter such that the beach appears littered with large rock, otherwise uncharacteristic of the area.

As discussed in Section 4, the applicant contends that the rock is consistent with the surrounding character because the City of Pacifica and other property owners in the nearby vicinity (1-2 miles upcoast/downcoast) have availed themselves of the Commission's permit process to place large, seemingly permanent revetments to protect other properties. This argument ignores the case-by-case evaluation inherent in every CDP application review process. In this case, the rock revetment in question is large, appears unnatural on the sand and is often partially scattered seaward of the original and intended footprint (approved pursuant to past Emergency CDPs). The rocks present an uninviting, visually obtrusive element to an otherwise natural bluff. The revetment can be seen from the north or south at the top of the bluff and on the beach.

Dislodged rocks, shotcrete, metal, textile fabric, and other construction materials resulting from potential future degradation of the proposed rock revetment could result in continued adverse visual impacts if the beach were to become littered with rock debris. Moreover, the revetment detracts from the aesthetic quality of the surrounding area. Therefore, the Commission imposes Special Conditions No. 1, which reflects the applicant's proposal to reduce the size of the existing emergency revetment to allow for the placement of the proposed soil-nail walls and to move the rock between 4 and 5 feet landward to open up additional beach area. As conditioned, the shoreline protection required pursuant to Section 30235 is the least environmentally damaging feasible alternative.

Therefore, as conditioned, the Commission finds that the visual impacts of the revetment and soil-nail walls to the maximum extent feasible are consistent with the requirements of Section 30235 and 30251 of the Coastal Act.

8. Marine Resources and Water Quality

Coastal Act Sections 30230 and 30231 require the protection of marine resources and states as follows:

Section 30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30230 and 30231 requires that marine resources "be maintained, enhanced, and where feasible, restored." Additionally, uses of the marine environment must be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

As discussed above in Section 4(c), the existing (emergency) revetment has fundamentally altered the shoreline to the benefit of the protected structures and to the apparent detriment of the beach and habitat/species accumulation/prevalence. The adverse impacts that shoreline armoring has on habitat is well documented. Coastal armoring, including seawalls and rock revetments, has been shown to reduce intertidal beach widths through the processes of placement loss, passive erosion, and increased erosion directly seaward of structures (Griggs 1998, 2005, Hall and Pilkey 1991, Tait and Griggs 1990, Dugan et al. 2008, Dugan and Hubbard 2011¹⁰). Generally, the lower the structure on the beach profile, the greater the physical impacts associated with the individual structure (Weigel 2002a,b,c¹¹). Despite the use of armoring on coastlines for centuries and numerous studies of the physical effects of this form of shore protection, the ecological responses of intertidal beach communities to armoring are poorly documented and understood. As a consequence of this lack of information, ecological effects are often not considered in decision-making or coastal policy. (Dugan and Hubbard 2011). Exposed sandy beaches, even relatively narrow bluff-backed beaches, may be increasingly important as sources of prey for shorebirds during migration and wintering (Hubbard and Dugan 2003). The resulting decreased diversity and abundance of intertidal prey available predicted above on armored beaches will reduce the value of a beach as habitat and resources for shorebirds. The use

¹⁰ Revell, D. L., J. E. Dugan and D. M. Hubbard. 2011. Physical and ecological responses of sandy beaches to the 1997-98 El Nino. Journal of Coastal Research, 27: 718-730.

¹¹ Weigel R.L. (2002a) Seawalls, seacliffs, beachrock: what beach effects? Part 1. Shore & Beach, 70(1), 17–27; Weigel R.L. (2002b) Seawalls, seacliffs, beachrock: what beach effects? Part 2. Shore & Beach, 70(2), 13–22; Weigel R.L. (2002c) Seawalls, seacliffs, beachrock: what beach effects? Part 3. Shore & Beach, 70(3), 2–14.

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of armored beaches by shorebirds, including diversity and abundance of shorebirds, is predicted to be lower than on unarmored beaches. (Dugan and Hubbard 2011, Dugan et al 2008).

Beach Wrack refers to the piles of seaweed, terrestrial plants, and animal remains that wash ashore and are deposited at the tideline. Large clumps of wrack are found on our beaches after storms. This wrack is mainly composed of marine algae, or seaweed, which comes from offshore kelp beds and rocky reefs. Long sections of kelp are broken off and transported during rough weather. The resultant masses of beachcast algae are valuable food sources for many animals, supporting a major proportion of intertidal biodiversity.

These wrack habitats are altogether absent from the beach seaward of the existing (emergency) revetment which is commonly inundated and therefore seldom dry. While the lack of dry sand is not unique to this particular revetment, it is possible that a protective device with a slimmer profile could more frequently result in dry beach seaward of the bluff. Additional availability of dry beach could allow wrack accumulation (Revell et al 2011), keep species corridors open and reduce micro-level habitat and species displacement due to lack of transportation corridors.

Citing a 1995 Army Corps of Engineers study entitled, "Design of Coastal Revetments, Seawalls and Bulkheads," the applicant's consultant maintains that the revetment contains marine resource habitat value. The consultant states the natural and durable rock provides some amount of colonizable area for intertidal organisms and provides a more diverse habitat for biota. Moreover, the consultant asserts that sloping structures with a stepped profile (in this case the revetment structure) have been found to greatly enhance habitat for biota by: 1) increasing surface complexity and increasing intertidal habitats of different tidal exposures; 2) retaining crevices; and 3) utilizing natural building materials. However, the incidental benefits of manmade structures in the marine environment do not amount to marine resources for purposes of Sections 30230 and 30231 of the Coastal Act. The Commission typically does not consider a shoreline protective device as a mitigating factor where marine resources are being adversely affected. In fact, revetments are more commonly inhabited by invasive species than native species, and often house less biodiversity than naturally occurring rocky inter-tidal habitats.

In this case, while the proposed revetment will result in a smaller footprint (width) than the existing (emergency) revetment, the proposed revetment will likely still result in consistent interaction between the proposed revetment and waves, meaning dry beach will only rarely accumulate. As a result, beach wrack, natural ocean debris and habitats containing certain beach and bluff species reliant on these special ecosystems will not accumulate. The proposed revetment will be low on the beach profile, in some cases nearly flush with the MHT, increasing the physical impacts associated with the proposed revetment. In some cases on this site, it is likely sand crabs dependent upon the fluctuating area between dry sand and wet sand will be unable to maintain their existing habitat due to the placement of revetment.

Therefore, the Commission finds that the proposed revetment is inconsistent with Section 30230 and 30231, since the revetment will continue to disrupt the identified habitat and marine resources. Moreover, this project will not result in increased or enhanced marine resources. However, Section 30235 requires the Commission to approve shoreline protective devices even

where coastal resources will be adversely impacted if the requirements of Section 30235 are met. As discussed above, the project as conditioned meets the criteria of Section 30235.

Special Condition 1 also requires any existing permanent irrigation system located on the bluff top site(s) shall be removed or capped and that all runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street. This condition will ensure that the proposed project will minimize adverse effects of waste water discharges and entrainment on the bluff by controlling runoff at the top of the bluff at 360 and 380 Esplanade Avenue.

Therefore, the Commission finds the proposed project consistent with the requirements of Section 30230 and 30231 to the maximum extent feasible consistent with the requirements of Section 30235.

9. Other Approvals

There may also be other state or federal agencies having jurisdiction over this project. Conditions of approval and/or mitigation measures may be required from these agencies. As such, Special Condition No. 11 has been imposed. This condition requires the applicant to submit copies of any discretionary permits obtained from other local, state or federal entities before the coastal development permit is issued. Should any project modifications be required as a result of any of these permits, the applicants are further advised that an amendment to this permit may be necessary to incorporate such mitigation measures into the project.

10. Alleged Violation

The terms and conditions of Emergency Permit Nos. 1-98-083-G/1-98-106-G, 1-98-109-G, 1-99-005-G, 2-09-022-G, 2-10-011-G and 2-10-017-G, which temporarily authorized 1) construction of approximately 55 feet of rock revetment along the toe of the bluff fronting the apartment building at 360 Esplanade Avenue; 2) construction of approximately 160 feet of rock revetment along the toe of the bluff fronting the apartment building at 380 Esplanade Avenue; 3) construction of an additional approximately 30 feet of rock revetment along the toe of the bluff fronting the apartment building at 360 Esplanade Avenue to connect the 55-foot and 160-footlong revetment segments approved under 1-98-106-G & 1-98-109-G; 4) placement of approximately 7,500 tons of 4- to 8-ton rock rip-rap to an elevation of 26 feet along approximately 200 linear feet of shoreline, construction of a keyway excavated four feet into the underlying greenstone bedrock and installation of geotextile fabric; 5) installation of an approximately 3,240-square-foot, 50-foot-high soil nail wall along an approximately 40-footlong section of the upper bluff consisting of (a) approximately 50-foot-long soil nails placed at 5foot intervals in both the vertical and horizontal direction, (b) a facing element such as shotcrete with wire mesh reinforcement, and (c) drainage panels behind the wall facing; 6) installation of approximately 30 feet of soil-nail wall to the north of the soil-nail wall structure permitted and constructed under ECDP 2-10-011-G and installation of a vertical row of soil nails at the north end of the wall on approx. 2.5-foot vertical spacing with a length of 30 feet behind the wall, at the same depths as those installed under 2-10-011-G; and 7) mid-bluff in-kind repair of the

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existing rock-slope protection, respectively, required that the above-specified development be permanently authorized within 60 days of the date of the emergency permit. The required follow-up application was not received within 60 days, and the Commission has not otherwise permanently authorized the development performed under the emergency permits, constituting a Coastal Act violation.

Although an allegation of a Coastal Act violation exists, consideration of the application by the Commission has been based solely upon the policies of Chapter 3 of the Coastal Act. A Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violation, nor does it constitute an implication of the legality of any development undertaken on the subject site without a coastal permit, or that all aspects of the violation have been fully resolved.

As described in the Background finding, if the previous owners of the subject properties did not comply with the terms and conditions of emergency permits requiring, within 60 days of the date of the emergency permit, submittal of a complete coastal development permit application seeking permanent authorization for the emergency work, the emergency permit further indicated that the emergency work shall be removed in its entirety within 150 days of the date of the emergency permit, unless that requirement was waived in writing by the Executive Director. The previous owners never completed a coastal permit application for permanent authorization of the rock revetment constructed in 1998/1999. Therefore, development temporarily authorized under emergency permits has remained in place without benefit of a coastal development permit to permanently authorize the development contrary to several requirements of the emergency permit.

Although development has taken place prior to submission of this permit application, consideration of the application by the Commission has been based solely upon the policies of the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations, nor does it constitute an implied statement of the Commission's position regarding the legality of any development undertaken on the subject site without a coastal development permit, or that all aspects of the violation have been fully resolved. In fact, approval of this permit is possible only because of the conditions included herein, and failure to comply with these conditions would also constitute a violation of this permit and of the Coastal Act.

11. California Environmental Quality Act (CEQA)

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing that the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effects which the activity may have on the environment.

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The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. The proposed project has been conditioned in order to be found consistent with the geologic stability, visual quality, and public access and recreation policies of the Coastal Act. Mitigation measures, including [conditions addressing payment of an in-lieu payment for impacts to sand supply, public access and recreation opportunities, and monitoring and maintenance of the structures over the lifetime of the project have been included as conditions of approval]. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.





10/08°EB

VICINITY MAP

ESPLANADE AVENUE APARTMENTS Pacifica, California



Exhibit No. 2 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC Vicinity Map Page 1 of 1

FIGURE 1 2329-1A

EXHIBIT A



PACIFIC

OCEAN

380 Esplanade Avenue





Exhibit No. 3 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC Parcel Maps Page 3 of 3











EXISTING ROCK TONNAGE AREAS 1 & 2 ~= 2800 Tons 1. ROCK TO BE REMOVED AREAS 1 & 2 ~= 1233 Tons 2.

BASED UPON 26 TON/FT REVETMENT



SCALE: 1'' = 10'

Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC



These drawings are for permitting puppessonul 6



9/22/11











NOTES

- 1. THE MAP OF SURFSIDE MANOR NO. 1 RECORDED APRIL 28, 1961 IN VOLUME 54 OF MAPS AT PAGE 40 AND THAT CERTAIN PARCEL MAP RECORDED DECEMBER 18, 1978 IN VOLUME 45 OF PARCEL MAPS AT PAGE 4 OFFICIAL RECORDS OF SAN MATEO COUNTY. EASEMENTS ARE NOT SHOWN HEREON.
- 2. ALL DISTANCES SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF.
- 3. SURFACE EVIDENT UTILITY STRUCTURES ARE SHOWN HEREON. OTHER UNDERGROUND UTILITIES ARE NOT SHOWN HEREON.
- 4. BENCHMARK: BENCHMARK USC & GS BENCHMARK #F1241 AT THE SOUTHEAST CORNER OF THE JUNCTION OF PALMETTO AVENUE AND WEST MANOR DRIVE AT PÄCIFICA, IN THE TOP AND 4.5 FEET EAST OF THE WEST END OF THE SOUTH CONCRETE GUARDRAIL BASE OF MANOR DRIVE BRIDGE 35-25 OVER STATE HIGHWAY 1, 27 1/2 FEET SOUTH OF THE CENTER LINE OF THE DRIVE, 27 1/2 FEET EAST OF THE CENTER LINE OF THE AVENUE, AND ABOUT 2 FEET HIGHER THAN THE AVENUE. ELEVATION=93.29 (NAVD 88).
- 5. BASIS OF BEARING: THE BEARING N8"25'30"E TAKEN ON THE CENTER LINE OF ESPLANADE AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON DECEMBER 18, 1978 IN BOOK 45 OF PARCEL MAPS AT PAGE 4, SAN MATEO COUNTY RECORDS WAS TAKEN AS THE BASIS FOR ALL BEARINGS SHOWN HEREON. NOTE: BEARINGS SHOWN ON PARCELS 1 THROUGH 4, 54 RSM 40 WERE ROTATED TO THIS BASIS OF BEARING.
- 6. SOURCE OF TOPOGRAPHY: THE AERIAL MAPPING WAS PREPARED USING COMPUTER ASSISTED, PHOTOGRAMMETRIC METHODS BY HJW GEOSPATIAL, INC., IN OAKLAND CALIFORNIA. JOB NUMBER 07-210, IN AREAS OF DENSE VEGETATION, ACCURACY OF CONTOURS MAY DEVIATE FROM ACCEPTED ACCURACY STANDARDS. DATE OF PHOTOGRAPHY 06-27-2007, ORIGINAL COMPILED MAP SCALE: 1"=30', CONTOUR INTERVAL: 1 FOOT. THE GRID IS BASED ON A LOCAL, ASSUMED COORDINATE SYSTEM. CONTROL SURVEY PERFORMED BY KIER & WRIGHT, PLEASANTON, CA.
- 7. A FIELD SURVEY WAS PERFORMED ON 1-6-2010 TO LOCATE THE LIMITS AND ELEVATIONS OF THE RECENTLY CONSTRUCTED REVETMENT AND TO LOCATE THE FACE OF BLUFF. DUE TO BLUFF INSTABILITY, MEASUREMENTS WERE TAKEN UTILIZING REMOTE METHODS.



Application No. 2-08-020 AIMCO, Esplanade Avenue Apartm

Proje

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CDP 2-08-020 Aimco

All Locations Approximate. For Illustrative Purposes Only. Image source: Copyright 2002-2010 Kenneth & Gabrielle Adelman. Exhibit No. 5 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC Aerial View Page 1 of 1

DSM, 9-22-2011


CDP 2-08-020 Aimco

 COASTAL
 All Locations Approximate.

 For Illustrative Purposes Only.
 For Illustrative Purposes Only.

 Technical Services Division - GIS Unit
 Image source: Copyright 2002-2010 Kenneth & Gabrielle Adelman.

Exhibit No. 6 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC Proposed Project Simulation Page 1 of 1 P

1 of 1 DSM, 9-22-2011

STATE OF CALIFORNIA

ARNOLD SCHWARZENEGGER, Governor

CALIFORNIA STATE LANDS COMMISSION 100 Howe Avenue, Suite 100-South Sacramento, CA 95825-8202



NOV 1 9 2009

CALIFORNIA COASTAL COMMISSION CENTRAL COAST AREA



NOV 1 7 2009

PAUL D. THAYER, *Executive Officer* (916) 574-1800 FAX (916) 574-1810 California Relay Service from TDD Phone **1-800-735-2929** from Voice Phone **1-800-735-2922**

File Ref: SD 2008-12-16.6

Contact Phone: (916) 574-1892 Contact FAX: (916) 574-1925

Sean Finnegan AIMCO 26 Executive Park, Suite 125 Irvine, CA 92614

Dear Mr. Finnegan:

SUBJECT: Proposed Modifications to Existing Rock Revetment Adjacent to 360-380 Esplanade Avenue, city of Pacifica, San Mateo County

This letter is in follow-up to our letter of February 19, 2009, and responds to your request for a determination by the California State Lands Commission (CSLC) as to whether it asserts a sovereign title interest in the property that the project will occupy or whether it will intrude into areas subject to the public easement in navigable waters.

As we understand it, the existing 240-foot long rock revetment was constructed by the previous property owners in 1998-1999, pursuant to three emergency permits issued by the California Coastal Commission (1-98-106-G, 1-98-109-G, & 1-99-005-G). The rock revetment is located adjacent to existing apartments located at 360-380 Esplanade Avenue in Pacifica. The apartments are owned by the Aimco Esplanade Avenue Apartments LLC (AIMCO).

AIMCO has submitted an application (CDP 2-08-020) to the California Coastal Commission (CCC) to finalize the emergency permits for the existing revetment and is also seeking CCC approval to construct a new 200-foot long rock revetment, consisting of approximately 5,000 tons of quarry stone that would bridge the gap from the existing rock revetment northward to meet a rock revetment recently constructed by the property owners immediately to the north. Construction is expected to take approximately 4-6 weeks depending on tides. The project is intended to prevent end point erosion and help to prevent future erosion of the bluff below the existing apartment buildings. It is our understanding that the bluff is actively eroding and continues to retreat.

Exhibit No. 7 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC State Lands Commission Letter dated November 17, 2009 Page 1 of 2 Based on our review of the information you submitted and our in-house records, including the March 31, 2009 Topographic Survey prepared by Paul Webb, Licensed Surveyor, all but an approximately ten square foot area of the existing and proposed rock revetment appears to be landward of the elevation of mean high tide. You acknowledge this in your June 23, 2009 memo to Judy Brown and it is your intention to reposition the encroaching portion of the existing revetment landward, during the construction of the new revetment.

Based on your intention to reposition the encroaching portion of the revetment and our review of the information provided, the CSLC presently asserts no claims that the proposed project intrudes onto sovereign lands or into areas subject to the public easement in navigable waters. This conclusion is without prejudice to any future assertion of State ownership or public rights, should circumstances change, or should additional information come to our attention. Additionally, please provide this office with a set of as-built drawings once the revetment work is completed so staff can verify that portions of the revetment no longer encroach on State land.

This letter is not intended, nor shall it be construed as, a waiver or limitation of any right, title, or interest of the State in any lands under the jurisdiction of the CSLC. If you have any questions, please contact Jane Smith, Public Land Management Specialist, at (916) 574-1892.

Sincerely,

Chief/

Land Management Division

cc: Madeline Cavalieri, GCC/Santa Cruz---Jane Smith, PLMS

2



CDP 2-08-020 Aimco



All Locations Approximate. For Illustrative Purposes Only. MHTL Delineation: Aimco March, 2009. Image Source: AirPhotoUSA, 2005. Aimco MHTL Delineation

Projected 20 Year Sea Level (~20 ft.)

Existing Emergency Revetment

Exhibit No. 8 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC MHTL projection Page 1 of 1

DSM, 9-22-2011



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GeoSoils Inc.

September 23, 2011

Mr. Sean Finnegan AIMCO 26 Executive Park, Suite 125 Irvine, California 92614

Subject: Final Revised California Coastal Commission Beach Sand Replenishment Fee Variables and Calculation, 360 & 380 Esplanade Avenue, Pacifica, San Mateo County, California

Dear Mr. Finnegan:

At your request, GeoSoils, Inc. (GSI) is pleased to provide this final summary of the sand fee calculation upon the recently revised shore protection plan for the subject site and our conversations with Coastal Commission staff. For ease of calculation and review, the shoreline is divided into four sections as shown in Figure 1. The quantity of sand for each section is calculated and provided in Table 1, then the quantity all four sections is totaled.



Figure 1.

5741 Palmer Way, Suite D, Carlsbad, CA 92010 wo s-6014 760-438-3155

GeoSoils Inc.

Areas 6, 7a & 7b Parameter of Calculation Areas 1 & 2 Areas 3,4 & 5 Area 8 Life of Revetment (yrs) 21 yrs 21 years 33 yrs 33 yrs Life of Soil nail wall (yrs) 21 20 Ae (encroachment area) sf 2,200 1,000 2,300 3,450 2.310 Aw (passive erosion) sf 1.050 3,795 4.950 At (enc. + passive) sf 6.095 4.510 2.050 8,400 Asn (planar projection) 40 ft x 110 ft 1.434 sq ft 1,980 900 2.070 Ve (cy) 3,105 2.079 Vw (cy) 945 3,415.5 4.455 Vb (Soil Nail) cy 1.095 340 1.959.3 1.540.1 3.916 Vb (cy) Vt (cy) 6.008.3 2.940 7.365.6 11.476 TOTAL VOLUME = 27,789.9 cy

Beach Replenishment Worksheet - AIMCO

Table 1.

The previously provide cost estimate for beach quality sand delivered to Esplanade Avenue in Pacifica is \$10.40 per cubic yard. Therefore, the mitigation fee is (\$10.40/cuyd)(27,789.9 cuyd) = **\$289,014.96.**

The opportunity to be of service is sincerely appreciated. If you should have any questions, please do not hesitate to contact our office.

Respectfully submitted,

Dulw Shilly

GeoSoils, Inc. David W. Skelly MS, PE RCE#47857



5741 Palmer Way, Suite D, Carlsbad, CA 92010 wo s-6014 760-438-3155

Exhibit No. 10 Application No. 2-08-020 AIMCO, Esplanade Avenue Apartments LLC Sand Supply Mitigation Payment Page 2 of 2

AIMCO 360 & 380 Esplanade Avenue, Pacifica, San Mateo County Item F9a October 7, 2011 **CCC** Hearing

A copy of this briefing booklet has been provided to Coastal Commission Staff.

Location



Project Site

360 Esplanade

380 Esplanade



37"39'06.29" N 122"29'34.73" W elev 87 ft

.Cono

1/190

Site History

1998-1999

- Emergency Permits issued to previous owners to place rock revetment along base of bluff.
- Rock revetments installed in conjunction with City effort at 380 Esplanade to protect storm drain structure.
- Rock revetments installed on City property in front of 380 Esplanade extending from City storm drain structure north into 360 Esplanade property.

2002/2003 Winter Months

• Erosion of bluff & undermined drainage swale from 310-360 Esplanade.

September 2006

Aimco purchases property.

2007/2008 Winter Months

• Erosion of bluff (5-10 feet) & further undermined drainage swale from 310-360 Esplanade.

February 2008

• Erosion of 20-30 feet of bluff from 310-360 Esplanade.

June 2009

• Aimco applies for CDP for 1) rock revetment extension and 2) follow-up permit to permanently authorize work carried out under 1998-1999 Emergency Permits by previous owners.

December 2009

- Erosion of 30-40 feet of bluff at 360 and 20 more feet at 330 & 340 Esplanade.
- Aimco receives Emergency Permit for rock revetment and begins work immediately.

March/June 2010

- Continued upper bluff erosion threatening structure at 360 Esplanade.
- Aimco receives Emergency Permit for soil nail wall and begins work immediately.

2010-Present

 Aimco continues to work with staff to permanently authorize all work conducted on property by previous owner and Aimco.

September 2011

• Applicant and staff agree to revised project plan to remove portion of revetment/reduce structural footprint.

Proposed Project

- Follow-up authorization of work performed under emergency permits to protect existing structures, including:
 - Construction of approx. 475 ft.-long rock riprap shoreline revetment (245 linear feet placed by previous owners);
 - Removal of approx. 42% of rock previously placed under emergency permits (5,086 tons/12,211 tons); and
 - Construction of colored and textured soil-nail wall segments.

Regional Context



Rock revetments utilized throughout City of Pacifica and regional coastline to address severe erosion issues.



Regional Context





Regional Context





Project Revision

- Staff requested alternatives analysis to achieve reduction in structural footprint on beach to improve lateral access and aesthetics.
- Although rock revetment is effectively protecting property and is consistent with character of surrounding area, applicant agreed to conduct analysis with additional technical studies.
 - <u>Vertical wall/no rock</u>: Not appropriate for subject site due to high wave action and narrow beach. Toe protection required.
 - <u>Rock reduction/soil nail wall</u>: Allows minimal amount of rock on beach for toe protection, requires construction of soil nail wall segments as necessary. Achieves bluff protection with fewer impacts. Agreeable alternative to staff and applicant.

Existing Conditions



Revised Project Conditions



Photosimulation

Revised Project Plans











Proposed Mitigation

- \$289,014.96 to mitigate associated impacts of development on regional sand supply
- Offer to dedicate 14,171 sq. ft. of applicant's beach property as lateral public beach access

Offer to Dedicate



Staff Recommendation

- Approval with fifteen (15) special conditions.
- "With the proposed sand mitigation, beach access/recreation mitigation and lateral access dedication, as well as the limitation on the time for which the shoreline protection is approved, the impacts of the proposed shoreline protection on regional sand supply and public access and recreation will be mitigated to the maximum extent feasible."

Conclusion

- Aimco has worked cooperatively with Staff for years to resolve a permitting issue created by previous owners.
- Revised project results in a significant reduction in rock on the beach, thereby improving lateral access and protecting visual resources.
- Aimco requests approval of the revised project as recommended by staff.

F9a

From: Bart [mailto:wavetool@earthlink.net] Sent: Tuesday, September 27, 2011 6:29 PM To: Nicholas Dreher; Renee Ananda Subject: Re: October 7, 2011 Meeting

Hi Nick,

Sort of an ole hat at this. I have appeared before the Commission a couple of times on various projects. Yes, I have some serious concerns regarding the AIMCO project that I will share in a written response to the Commission. The first concern is the construction of the revetment at Aimco it is substandard that I will share in detail. There doesn't appear any plans for an upper drainage system and that area has specific problem as there is a swimming pool that catches run off water from the upper bluff and cannot escape from the pool. The area in question is causing the bluff to erode further (behind the revetment) and the soil nail wall at the north point is being outflanked by the bluff.

Finally, the revetment at 380 is blocking lateral access to the north portion of Esplanade Beach both public and when property owners north of the revetment, need to make repairs or have an emergency, the only access point is the City property at 400 Manor and across the Aimco Revetment.

Attached, are two links from ABC News Channel 7 Sky7 that indicates the problem very well. The area of the pool is extremely wet and the waves are crashing on the Aimco revetment. Click on the link and the video will play within a few seconds after a short intro. You may have to copy and then paste in your browser to see the video.

http://abclocal.go.com/kgo/video?id=7213889&syndicate=syndicate§ion

http://abclocal.go.com/kgo/video?id=7237976&syndicate=syndicate§ion

So Nick, I have several legitimate concerns with the Aimco project that require some serious thought.

Regards, Bart Willoughby ----- Original Message -----From: <u>Nicholas Dreher</u> To: <u>Renee Ananda</u>; <u>Bart</u> Sent: Tuesday, September 27, 2011 2:18 PM Subject: RE: October 7, 2011 Meeting

Hi Bart,

We have not yet met, but I encourage you to give me a call regarding the Aimco matter. I would like to know what you intend to say and any concerns/issues you plan to raise. I would appreciate the heads up, in order to adequately respond and to put any written comments you have into an addendum – for the Commissioners and public in advance of the hearing.

Typically, during public comment or during a public hearing on a particular item, speakers get approximately 3 minutes to speak (it is unlikely you will receive 5 min, so do not plan for 5 min, plan for 3 min). Moreover, the rebuttal you reference seems premature, considering I have not yet heard your concerns regarding this project and therefore we have not had an opportunity to respond. There will be audio and visual equipment on hand and you can arrange your video with the cal-span folks upon your arrival at the hearing. The Aimco project (October hearing in Huntington Beach) will not be on the same agenda as dollaradio (likely a November hearing item – Renee correct me if I am wrong).

I look forward to discussing this matter with you.

Thanks,

Nicholas B. Dreher Coastal Program Analyst California Coastal Commission (415) 904-5251 ndreher@coastal.ca.gov

From: Renee Ananda Sent: Tuesday, September 27, 2011 8:52 AM To: 'Bart' Subject: RE: October 7, 2011 Meeting

Bart,

Yes. I received the fax. Thank you. Dollaradio will not make it for the October meeting; we plan to put it on in November. I don't know if there is a projector with video feed. We usually ask people to put their visual presentations on a thumb drive. I can check. Nick Dreher is the analyst handling Aimco (I may have referred you to him already, however, just in case ... if you need to coordinate with him he can be reached at <u>ndreher@coastal.ca.gov</u>. RTA

From: Bart [mailto:wavetool@earthlink.net] Sent: Monday, September 26, 2011 6:15 PM To: Renee Ananda Subject: October 7, 2011 Meeting

Hi Renee,

Did you receive the fax that I sent you on ATF for Dollaradio? Still putting all the exhibits together and waiting on RJR for the cross-section as built documents to include in the package.

Also, I have a 1 minute 45 Section video on the Pacifica Bluffs that I want to play for the Commissioners at the Meeting. I have a laptop with DVD. Will there be a projector with video feeds so I can play the video for the Commissioners? I will need this for the 5 minute rebuttal to the Aimco permit and presentation for Dollaradio.

Bart 415.238.8837 Cell

October 4, 2011

First Class Mail with Confirmation

Mr. Nicholas B. Dreher Coastal Analyst California Coastal Commission North Central Coast District 45 Fremont Street, Suite 2000 San Francisco, CA 94105-2219

Re: AIMCO Coastal Development Permit (2-08-020)

Dear Mr. Dreher:

This letter is the written response and public comment on the above referenced permit, for the AIMCO properties located at 360 and 380 Esplanade Avenue, Pacifica, California. Moreover, this response is a coordinated effort, as the authorized agent on behalf of the Millard Tong Properties (310 & 320 Esplanade) and Dollaradio Station¹ at 100 Palmetto Avenue, Pacifica, CA. Both properties are directly affected by the AIMCO permit request. Additionally, while I am the authorized agent for Tong and Dollaradio, I am resident of the area and live along the Esplanade Bluff (approximately 12 years).

My knowledge of the facts in this instance is based upon daily observations of the construction of the AIMCO revetment and soil nail wall, and the conditions along the entire Esplanade Beach.

The Esplanade Beach General Information

On the Esplanade Beach Bluffs, north of the AIMCO revetment, located at 380 Esplanade are several properties. **Dollaradio Station** (a historical landmark) 100 Palmetto Avenue; **Pacific View Villas Condo Association** (13 individual condo owners) 200-220 Palmetto Avenue; **Lands End Apartment Complex** (260 units) 100 Esplanade Avenue; **La Esplanade Apartment** (Tong properties with 40 units) 320 & 320 Esplanade; **Samsami** (red tagged 13 units) 330 Esplanade; **San Mateo Real Estate** (13 units) 340 Esplanade and 13 units located a 350 Esplanade Avenue, Pacifica.

¹ Dollaradio Station is the northern most property located along the Esplanade Beach and has a pending ATF (2-11-031G). Dollaradio is ultimately affected by AIMCO permit request.

As indicated above Dollaradio has a pending permit. Pacific View Villas has a partial revetment under Coastal Permit **3-82-228** and Waiver Permit **2-10-012-W**². Lands End currently is constructing a seawall with a public access provision under permit **2-10-007 G.** Tong Properties 310 & 320 revetment was built under emergency permit **2-09-002G** and currently has a pending permit **2-03-018**³

The Samsami property 330 Esplanade was subject to severe erosion in 2009 & 2010 that prompted evacuation of the 13 residents of the property. The City of Pacifica "red tagged" the property and it remains vacant as of this date. Moreover, the Samsami property was issued an emergency permit **2-09-021** G for rock riprap at the toe of the bluff and next to the AIMCO property. Additionally, the Commission issued permit **2-10-004G** for a soil nail wall at 330 (**similar to the current AIMCO soil nail wall**) that failed miserably due to the fact there was no drainage behind the partially built soil nail wall. The 330 property is currently involved in several litigations in the San Mateo County Superior Court in consolidated matters 496610 (Drill Tech same Soil Nail Contractor for AIMCO) and 496988 Engineered Soils Repairs.

340 and 350 Esplanade are listed in AIMCO Plan View on S1 Area 1 & 2 and subject of the current AIMCO permit request.

Ocean Shore Railroad Easements

The Ocean Shore Railroad ("OSRR") before the 1906 earthquake had several easements on the various properties listed above (Dollaradio, PVV and Lands End) and laid track bed across the sandy bluffs at those properties. After the 1906 earthquake, the OSRR abandon the line around Mussel Rock leaving the track bed with thousands of tons of 1-3 ton riprap along the upper bluff, at the properties indicated. As time elapsed, the track bed along with the thousand of tons of rock riprap, ended up on the Esplanade Beach. Currently, there is several thousand tons of rock on the Esplanade Beach from the OSRR that is not naturally occurring at this location.

This also explains, in some degree, to written reports of Franciscan Greenstone Bedrock being located on the Esplanade Beach. The majority of auger reports for the Esplanade were done by hand augers that ran into a large part the OSRR rock riprap littered on the beach. In May 2009 as part of the analysis for the Tong project, a search for Franciscan Greenstone Bedrock was undertaken with a power auger at a depth of 40 feet (Exhibit A).

² Pacific View revetment collapsed in the El Nino storms of 2009 & 2010 and was rebuilt under the waiver permit. Recently discovered, the revetment is partially protecting a public landfill on the PVV properties and a lateral sewer line is located on the upper bluff 27' away from the bluff edge. There now exist, two gaps between PVV at the northern portion of the PVV revetment to Dollaradio and the southern portion of the PVV revetment to Lands End seawall. Moreover, there was a complete lack of oversight by the Commission on the PVV original revetment (made by immaterial amendment) that authorized 30K tons of rock to protect the landfill. There is an estimated 3K-ton protecting the landfill.

³ The Tong revetment at 310 & 320 is subject to litigation in San Mateo Superior Court Case No. 494786 naming the contactor Engineered Soils Repairs Inc., as a cross-defendant for the negligent design and construction of a substandard revetment at the toe of he bluff at 310 & 320. Tong will be submitting a request to the Commission to make the revetment at 310 & 320 temporary, as a rock riprap revetment at this location is simply not a long-term solution.

Each red dot on the location plan (EX-A) indicates where the continuous flight auger probed. This included the AIMCO area listed on the AIMCO PLAN REVIEW at AREA 1, 2, 3, 4, 5 and portions of 7a and 7b. According to the auger reports, NO Franciscan Greenstone Bedrock was located at the AIMCO locations.

The AIMCO Proposed Plan as Defined by Staff Report

Accordingly, AIMCO proposes a +12 MSL at **AREA 1 & 2** leaving 1,567 tons of rock and removal of 1,233 tons of riprap from this location. A +18 MSL at **AREA 3, 4 & 5** leaving 527 tons of rock and removing 643 tons of rock riprap from this location. Additionally, a new soil nail wall will be constructed at **AREA 4 and 7b.** At **AREA 6** there is the potential for a soil nail wall, if a vegetated process does not work. Additionally, 531 tons of rock will be removed from the middle bluff at this location.

At **AREA 7b** +18 MSL leaving 1500 tons of rock and removing 1400 tons of rock riprap from this location. **AREA 8** will be raised to +25 MSL leaving 2,620 tons of rock and removing 1,280 tons of riprap from this location.

For the reasons herein listed below the following is contended:

- 1. The current revetment at locations AREA 2, 5 and 7b are substandard.
- There is no upper drainage system where a swimming pool still resides on the upper bluff at AREA 1 & 3 that is currently causing the soil nail wall northern portion at AREA 3 & 4 to be outflanked. Additionally, the revetment at AREA 2 & 5 are severely affected by the erosion behind the revetment caused by the pool.
- 3. While the revetment at **AREA 7b and 8** will be moved uniformly inland about 2-4 feet (staff analysis at page 22) is not sufficient to provide lateral access across the revetment for public access. Additionally, given the properties to the north of the revetment (as listed above with continuing problems) lateral access across the revetment, with any machine to work or make emergency repair is problematic.

The AIMCO Revetment at AREA 2, 5 & 7 is Substandard

As indicated in Exhibit A attached, there is absolutely no Franciscan Greenstone Bedrock at the locations of the AIMCO revetment referenced above. As of June 10, 2009, AIMCO was aware, through Sean Finnegan that there was no Franciscan Greenstone Bedrock on the AIMCO properties at beach level, (Exhibit B). Mr. Finnegan ignored the analysis and findings, continuing to contend, that the revetment built by emergency permit in 2009, would be keyed into Greenstone Bedrock.

The contractor that built the AIMCO revetment, Michael Roberts to my knowledge, never built a revetment along the coast before the AIMCO revetment. Attached as (**Exhibit C**) is a photo of the keyway being built at the AREA indicated above. Additionally, a whole series of photos in PDF format was uploaded to the Coastal Commission ftp site shortly after the construction of the revetment, showing the entire construction of the AIMCO keyway at this location. The rock was end dumped at the

AREA was not interlocked (**Exhibit D**). The Esplanade Beach Area is a high-energy wave action location and it imperative that appropriate size rock be utilized in the keyway and cap rock. From the entire photos, uploaded into the Commission's ftp site and the construction of the keyway, it is clear, the current revetment "as built" will continue to move toward the ocean. The rock is not keyed into competent material. The rock "end-dumped" and not interlocked, will move in times of high tide and storm swells with large high energy waves. Thus, requiring continuous maintenance and eventually, the revetment will encroach on state property.

As discussed below the swimming pool located on the upper bluff in the low lying area is causing the revetment at this AREA to further deteriorate.

AIMCO has No Upper Bluff Drainage Plan. The Buried Swimming Pool is Causing Continue Bluff Erosion behind the Revetment & Soil Nail Wall.

At **AREA 1, 3 & 4** there is a buried swimming pool still located on the upper Bluff on the AIMCO property (**Exhibit E**). There is nothing in the staff report, nor in the AIMCO plans, that address the problem with the low lying area where the swimming pool is buried and continues to cause erosion behind the revetment, at AREA 2, 5, 7 and the soil nail wall, at AREA 3, 4 & 5. (**Exhibits F, G & H**)

From the recent photos, it can be seen in EX-F, that the area is low lying and that all water from 330, 340 & 350 all run into the buried pool and area whenever there is a rainstorm. See the former sidewalk at the right of the photo EX-F. Then look at EX-E the upper properties that drain into this area.

From photos EX-G (beach and upper bluff views) it is clear that the pool area is causing a major problem behind the current existing revetment at AREA 1. The bluff erosion is beginning to outflank the northern portion of the current soil nail wall at AREA 3 & 4. As can be seen in EX-H the poorly constructed revetment at AREA 1 and the continued upper bluff erosion behind the current revetment at AREA 1 is problematic.

AIMCO has to deal with the drainage problem on the upper bluff that comes from 330, 340 & 350 and the swimming pool that is buried under the bluff at the AIMCO property and the water that accumulates there.

The Revetment at 380 will Continue to Block Lateral Access Public & Otherwise

AIMCO proposes and staff report suggests, that removal of some rock at the 380 revetment, will improve lateral access across the revetment by 2 to 4 feet (*Id at page 22 of 56*). Accordingly, the access will improve "*during times when beach sand levels are high.*" This unfortunately, is an unobserved analysis by AIMCO and Commission Staff. **Exhibit I** shows the current conditions at low tides. Moreover, this year, as in last year (2010) the beach accumulation of sand along the Esplanade Beach has been almost, non-existent. This summer, (2011) there was more scouring of the Esplanade Beach. This was due primarily because of large swells generated by winds (from the low pressure center north of California and located in Oregon) that continued to eat away sand from

the beach. Given the Commission's studies on sea level rise on global conditions there is expected 2-4 foot rise in sea level between now and the next decade.

Lateral access to the northern portion of Esplanade Beach at 380 is paramount for public access. Additionally, for Dollaradio, PVV, Lands End, Tong & Samsami to make needed repairs or respond to an impending emergency. I personally, have been caught on the 380 revetment and it is extremely difficult, to navigate as a pedestrian, across the revetment. The process for public lateral access should include, building a small single person pedestrian bridge across the 380 revetment. Additionally, AIMCO should be required to give lateral access across the 380 revetment, to property owners north of the revetment to make repairs or respond to an emergency.

Finally, the general corporate attitude of AIMCO and Mr. Finnegan is one of coarseness, as it relates to the Esplanade Beach Community. This coarseness is apparent in several email exchanges between Mr. Finnegan and I, on several important issues. However, the inexperienced contractor Michael Roberts, engaged with track equipment in the surf along Esplanade Beach was serious (**Exhibit J**). Mr. Finnegan appeared to be deliberately indifferent as to the seriousness of the issue.

Very truly yours,

Bart Willoughby

CC: City of Pacifica, Lands End, PVV.

EXHIBIT A

POWER AUGER REPORTS ESPLANADE BEACH SHOWING NO FRANCISCAN GREENSTONE BEDROCK AT THE AIMCO SITE

8


EXHIBIT B

EMAIL JUNE 10, 2009 from Willoughby to Finnegan Subject Auger Reports on Franciscan Greenstone Issue





Bart

From:	"Bart" <wavetool@earthlink.net></wavetool@earthlink.net>	
To:	"Finnegan, Sean (Redev - West Coast)" <sean finnegan@aimco.com=""></sean>	
Sent:	Wednesday, June 10, 2009 8 58 PM	
Attach:	20090610173729335.pdf; 20090610173742958.pdf	
Subject:	Auger Reports for Esplanade Beach	

Hey Sean.

You should probably share this information with the folks who are designing your revetment. I would bet you even money, that the revetment at 380 is not sitting on top of Greenstone Bedrock. Probably the marine terrace deposits but Greenstone-very doubtful. This auger report would explain the rationale for the revetment at 380 moving ocean wards.

The auger report went to depths of 40' and no Greenstone Bedrock was found. Very interesting! I am sending this info to Brian Collins at the USGS.

Regards, Bart 415.238.8837 Cell 650.355.4443 Facsimile

10/2/2011

EXHIBIT C

PHOTO OF KEYWAY OF AIMCO AREA 1 UNDER CONSTRUCTION IN 2009 (FULL SERIES OF PHOTOS PDF UPLOADED TO COASTAL COMMISSION FTP SITE)



EXHIBIT D

PHOTO OF AIMCO AREA 1 UNDER CONSTRUCTION IN 2009 SHOWING ROCK WAS NOT INTERLOCKED AND END DUMPED



EXHIBIT E

AERIAL PHOTO OF POOL HOUSE LOCATED ON AIMCO PROPERTY 1965 POOL WAS CONSTRUCTED AND LATER DECOMMISSIONED AND FILLED WITH DIRT



EXHIBIT F

CURRENT PHOTO OF WHERE POOL IS BURIED ON AIMCO PROPERTY AND SHOWING 330, 340 & 350 RUNOFF INTO THE LOCATION.



EXHIBIT G

(2) CURRENT PHOTOS UPPER & LOWER BLUFF AT AIMCO SHOWING EROSION BEHIND REVETMENT AT AREA 1 & SOIL NAIL WALL AREA 3 & 4 FROM BURIED POOL





EXHIBIT H

CURRENT PHOTO SHOWING BLUFF EROSION AT AREA 1 BEHIND THE AIMCO REVETMENT AND THE SUBSTANDARD "AS BUILT" AIMCO REVETMENT



EXHIBIT I

(2) CURRENT PHOTO SHOWING REVETMENT AT 380 ESPLANADE AT LOW TIDE





EXHIBIT J

EMAIL TO AIMCO SEAN FINNEGAN SHOWING MICHAEL ROBERTS TRACK EXCVATOR WORKING IN THE SURF ON ESPLANADE BEACH

Bart	
From: To: Sent: Subject:	"Finnegan, Sean (Redev - West Coast)" <sean.finnegan@aimco.com> <wavetool@earthlink.net>; "Van Sickle, James (Sonoma)" <james.vansickle@aimco.com> Sunday, August 22, 2010 6:25 PM Re: Front Page of Pacifica Tribune</james.vansickle@aimco.com></wavetool@earthlink.net></sean.finnegan@aimco.com>
Bart, Please refra	in from sending unconstructive emails.

Sean Finnegan, Aimco

From: Bart
To: Van Sickle, James (Sonoma)
Cc: Finnegan, Sean (Redev - West Coast)
Sent: Sun Aug 22 16:34:54 2010
Subject: Front Page of Pacifica Tribune

Jim,

Here is the photo on the front page of the Pacifica Tribune and Michael Roberts working on the revetment at 360 & 380 Esplanade. Just and FYI.

Regards, Bart Willoughby



This giant excavator seems to be stuck in the surf at high tide, but it was really engaged in revetment work as part of a private operation below 380 Esplanade. Several private property owners have hired experts to evaluate the integrity of the Coastline bluffs in the wake of serious erosion that has captured the attention of Bay Area media.



2 1 1 2

From: Bart [mailto:wavetool@earthlink.net]
Sent: Tuesday, October 04, 2011 5:07 PM
To: Nicholas Dreher
Cc: Charles Lester; farbsteink@ci.pacifica.ca.us; whiteg@ci.pacifica.ca.us; SMREdt@aol.com
Subject: Re: Aimco Document & Exhibits

Nick,

Everyone who has read the Aimco Staff Report is having a very hard time understanding the reduction of the revetments at the locations indicated on Aimco S1. The staff report doesn't provide any supporting data for the reasoning behind the reduction. The beach profiles up and down the Esplanade from Dollaradio to the RV Park are almost identical. The bluff shapes from Dollaradio down through the City property are equally consistent.

The Collins and Sitar 2008 report shows the similar geotechnical properties and basic engineering design approach and principles remain essentially identical across the bluff in this area. Reduction of the revetments at the Aimco location will not provide a gain of 2-4 feet in lateral access (this appears to be the only reasoning according to staff report for reduction of the revetment). This is due to local scour attributed to the revetment, decreased sand supply and long term sea level rise.

My concern is for low frequency wave events that could over top the reduced revetments and further reduce the bluff factor of safety in this area. Plus given what happened in 2009 the reduction of the revetment will accelerate bluff instability and potentially threaten existing structures at 330, 340 & 350. Given the lack of drainage behind the revetment on the upper bluff (the pool) is clearly a receipt for disaster all over again...something I do not want to have to relive!

Bart Willoughby 415.238.8837 Cell ----- Original Message -----From: <u>Nicholas Dreher</u> To: <u>Bart</u> Sent: Tuesday, October 04, 2011 10:41 AM Subject: RE: Aimco Document & Exhibits

Thank you Bart. Yes, I received your emails and we will include this in the addendum.

Nicholas B. Dreher Coastal Program Analyst California Coastal Commission (415) 904-5251 <u>ndreher@coastal.ca.gov</u>

From: Bart [mailto:wavetool@earthlink.net] Sent: Tuesday, October 04, 2011 10:55 AM To: Nicholas Dreher Cc: Charles Lester Subject: Aimco Document & Exhibits

Good Morning, Nick,

Can you confirm receipt of the documents sent yesterday via email. Comment letter plus exhibits. Also, the pdf file uploaded months ago on the Aimco revetment was delivered to the General Public Folder. Can you confirm that the Commission has this pdf file?

Also, according to the USPO the package is out for delivery. You should have in the morning mail that is delivered to the Commission Office in SF.

Regards, Bart Willoughby 415.238.8837 Cell From: Bart [mailto:wavetool@earthlink.net]
Sent: Wednesday, October 05, 2011 11:44 AM
To: Nicholas Dreher
Cc: Charles Lester; farbsteink@ci.pacifica.ca.us; ocampov@ci.pacifica.ca.us; whiteg@ci.pacifica.ca.us; rhodess@ci.pacifica.ca.us; Rjr; SMREdt@aol.com
Subject: Re: Aimco Document & Exhibits

Nick,

Thanks for the update on what is included in the addendum.

Nick, I am not sure that the City of Pacifica was aware that Aimco was going to remove rock from Area 8 (1,250 tons). Also, I have some major concerns with only +25MSL at this location. The City storm drain is located in AREA 8 (see City (4) photo) and removal of rock at this location could lead to more serious problems for the entire Esplanade and Manor area.

Also, regarding the revetments at AIMCO under +25MSL. Attached, is the revetment at 320 Esplanade (Tong) that was built according to ESR at +25 MSL. From the photo, you can see, the Tong revetment at 320 is being over-topped by the waves. 320 is less then 200' from the AIMCO revetments. This photo was taken January 2010 before the failure at 320 on January 21st.

So any revetment +25 MSL and below is subject to over topping at this location.

Regards, Bart Willoughby 415.238.8837 Cell ----- Original Message -----From: Nicholas Dreher To: Bart Sent: Wednesday, October 05, 2011 8:28 AM Subject: RE: Aimco Document & Exhibits

Thank you Bart. I received this earlier yesterday and it is included in the addendum.

Nicholas B. Dreher Coastal Program Analyst California Coastal Commission (415) 904-5251 ndreher@coastal.ca.gov

From: Bart [mailto:wavetool@earthlink.net] Sent: Tuesday, October 04, 2011 8:27 PM To: Nicholas Dreher Cc: Charles Lester Subject: Re: Aimco Document & Exhibits

Nick,

Thanks, here is a copy of a letter that I just received this evening from RJR Engineering. This backs up most of what was in my email that is part of the addendum.

Thanks again, Bart Willoughby 415.238.8837 Cell ----- Original Message -----From: <u>Nicholas Dreher</u> To: <u>Bart</u> Sent: Tuesday, October 04, 2011 3:17 PM Subject: RE: Aimco Document & Exhibits

Hi Bart,

I will include this latest email in the addendum.

Thanks,

Nicholas B. Dreher Coastal Program Analyst California Coastal Commission (415) 904-5251 ndreher@coastal.ca.gov

From: Bart [mailto:wavetool@earthlink.net]
Sent: Tuesday, October 04, 2011 5:07 PM
To: Nicholas Dreher
Cc: Charles Lester; <u>farbsteink@ci.pacifica.ca.us</u>; whiteg@ci.pacifica.ca.us; SMREdt@aol.com
Subject: Re: Aimco Document & Exhibits

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My concern is for low frequency wave events that could over top the reduced revetments and further reduce the bluff factor of safety in this area. Plus given what happened in 2009 the reduction of the revetment will accelerate bluff instability and potentially threaten existing structures at 330, 340 & 350. Given the lack of drainage behind the revetment on the upper bluff (the pool) is clearly a receipt for disaster all over again...something I do not want to have to relive!

Bart Willoughby 415.238.8837 Cell

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Also, according to the USPO the package is out for delivery. You should have in the morning mail that is delivered to the Commission Office in SF.

Regards, Bart Willoughby 415.238.8837 Cell





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TEL: (510) 653-8886

September 30, 2011

RECEIVED OCT **0** 4 2011

CALIFORNIA COASTAL COMMISSION

VIA FEDERAL EXPRESS

Mr. Nick Dreher California Coastal Commission 45 Fremont Street, Suite 2000 San Francisco, CA 94105-2219

Re: Hearing on Friday, October 7, 2011 Application No. 2-08-020 (AIMCO, Esplanade Ave. Apartments LLC

Dear Mr. Dreher:

This firm represents the Pacific View Villas Homeowners' Association, located at 200-224 Palmetto Ave., Pacifica, CA.

The Association is concerned about the referenced Aimco application, because the revetment at 380 is currently blocking access to the north portion of Esplanade Beach. Pacific View Villas is located north of the revetment, and the owners of Pacific View Villas need to have access across the City of Pacifica Property and the Aimco property in order to make repairs, such as those that may be needed to Pacific View's sewer lines.

Currently, Pacific View Villas' lateral sewer line is located on the upper bluff and is only 27 feet away from the bluff edge at the border between Pacific View Villas' property and Land's End. If anything happened to the sewer line, the Pacific View Villas' owners would have to engage contractors to go across the Aimco revetment in order to effectuate repairs. Moreover, if the sewer lateral is threatened by soils instability, Pacific View Villas will have to install rip rap in the vicinity of the lateral line to try to protect it, and will need access across the Aimco revetment for that purpose.

The Pacific View Villas Homeowners' Association asks that the Commission impose, as a condition precedent to the approval of the Aimco application, that Aimco record an easement in the chain of title to its property, allowing Pacific View Villas Homeowners' Association an express easement across the Aimco property for the Coastal Commission September 30, 2011 Page 2

purpose of accessing that property to make required repairs to the Pacific View Villas property. I will cooperate with Aimco counsel to draft the required easement. The easement should also be recorded in the chain of title to the properties at Pacific View Villas, which will be the dominant tenement.

Thank you in advance for your consideration of this request.

Very truly yours, LAW OFFICES OF ANN RANKIN **Signature on File** Ann Rankin

Cc: Board AR:gb

F9a

Plageman, Lund & Cannon LLP

ATTORNEYS AT LAW

155 Grand Avenue, Suite 950 · Oakland, CA 94612 Tel 510/899-6100 · Fax 510/899-6101

October 4, 2011

Nicholas B. Dreher California Coastal Commission North Central Coast District Office 45 Fremont St, Suite 2000 San Francisco, CA 94105-2219

Re:	Coastal Commission Hearing Oct. 7, 2011, 9:00am
	Agenda Item F9a
	Application 2-08-020
Our client:	Dennis Thomas, 340 Esplanade, Pacifica, CA

Dear Mr. Dreher:

Our office represents Dennis Thomas, the owner of 340 Esplanade, Pacifica, California, one of the properties affected by the above referenced application filed by AIMCO, a neighboring property owner.

Mr. Thomas objects to the proposed removal of existing rock from the base of the coastal bluff below his property on the grounds that (i) insufficient technical information has been provided to demonstrate that such action is safe and does not pose an imminent health and safety threat to the residential properties above the bluff, including 340 Esplanade, and (ii) the attached initial evaluation by our own engineer indicates that the proposed action does in fact pose a threat to the stability of the bluff and the residential properties above.

We request that the Commission either deny the proposal to remove the existing rock, or continue the hearing until additional engineering analysis has be submitted to sufficiently evaluate the safety of the proposed action.

The report of Robert W. Anderson, RJR Engineering Group, dated October 3, 2011, is attached in support of this comment letter, for your consideration. Thank you for your attention to our concerns.

Sincerely,

Signature on File

Richard W. Lund Attorney for Dennis Thomas

Civil Engineering Land Planning Hydrology/ Flood Control Geotechnical Engineering Public Works Services Storm Water Management

October 3, 2011 P.N. 1609.60

{via email to Richard Lund}

MR. DENNIS THOMAS 1777 Borel Place #330 San Mateo, CA 94402

Subject: REVIEW OF AIMCO PROPOSAL FOR RIP RAP REMOVAL 340 ESPLANADE WAY CITY OF PACIFICA, CALIFORNIA

Dear Mr. Thompson:

RJR Engineering Group (RJR) has prepared this letter in response to your request to review the Aimco (360 & 380 Esplanade proposal to remove rip rap from the existing revetment.

RJR has reviewed the California Coastal Commission staff report as well as the letter sent by Sedgwick LLP, dated September 28, 2011. We understand that Aimco has proposed to remove rock from the existing revetment which would reduce the structural section and overall height of the revetment.

RJR has performed preliminary studies of the bluff located at 340 Esplanade at your request. As part of previous studies for 100 Esplanade (Land's End), Dollar Radio, Pacific View Villa; and 320 and 330 Esplanade, RJR performed, but not limited to, the following tasks:

- Detailed beach survey between 2009 to the present including offshore measurements (summer 2009) collected off a boat with GPS;
- Geologic and geotechnical mapping of the exposed face;
- Slope stability analysis for the various bluff conditions;
- Shear strength tests on over 80 samples to determined strengths;
- Grain size analysis on over 115 bluff and beach samples; and,
- Performed detailed wave uprush and geotechnical reports for the various properties.

Based on this information, there have been two conclusions that we have determined:

REERING



First, while the genesis of the alluvial deposits that compose the bluff may change (Figure 1), the textural and engineering properties and indices remaining essentially identical for the stretch extending from Dollar Radio to the south past Aimco. The only observable variations have been related to the cementation and corresponding shear strengths.

Second, the beach profiles, slopes, sediment grain size distribution, and characteristics are essentially identical.

As a result of the similar geotechnical properties, the basic engineering design approach and principles remain essentially identical across the bluff in this area. This is supported by the USGS studies performed by Brian Collins and other researchers, which are referenced in the underlying reports presented in the Reference section of this letter.



Figure 1 - Collins and Sitar, 2008 - Profile of Bluff Geology and Labels





Further, the beach slope, geographic location, and orientation are the same as the surrounding properties, and therefore, the coastal processes and analysis are also identical to the adjacent properties.

As a result, RJR has derived the following preliminary opinions, absent any site specific analysis or supporting data by Aimco to indicate a contravening opinion:

- 1. Removal of the rip rap stone will remove lateral adjacent support (reduces buttressing) and reduces the overall stability of the bluff adjacent to 340 Esplanade. This will further reduce the bluff factor of safety and accelerate bluff instability and threaten the existing structures.
- 2. The coastal analysis for Land's End calculated present day wave runup elevations in excess of Elevation +20, with long-term design Elevation of +27 when considering various factors including long-term sea level rise (RJR, 2011). Reducing the revetment height increases the overtopping which will further erode and destabilize the bluff. Given the proposed low height, the revetment will be overtopped in lower frequency events which increase the potential instability of the bluff.

We are inferring from the staff report that the overriding purpose for this recommendation is to remove rock from the beach and increase lateral access. It should be noted that the additional 2 to 4 feet will likely not occur as a result of local scour attributed to the revetment, decreased sand supplied, as well as, long term sea level rise.

In summary, it is the opinion of RJR that the removal of the stones from the existing revetment could be a substantial factor in future bluff instability and subsequent risk to the existing structures. The Aimco request has been provided at the last minute with no supporting technical data and analysis to substantiate the basis for the request. We recommend that you request the necessary data from Aimco to support the basis for the rock removal. In the absence of this data, we cannot recommend that such action be taken, because at least on the face the proposal would not be prudent.

If you have any questions, please do not hesitate to call at 805.485.3935.

RJR ENGINEERING GROUP

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Signature on File

Robert W. Anderson, NSPE, RCE, GC, JD Principal Civil Engineer - RCE 58383 (CA) Arizona: RCE 51923 Washington PE 47559 Colorado PE 44734 Hawait RCE 14230 Oregon RCE 84690





REFERENCES

100 Palmetto Drive

- "Addendum #1, Emergency Repair Application, Dollar Radio, Proposed Bluff Stabilization, 100 Palmetto Avenue, City of Pacifica, California"; prepared by RJR Engineering Group; dated August 30, 2011
- "Emergency Repair Application, Dollar Radio, Proposed Bluff Stabilization, 100 Palmetto Avenue, City of Pacifica, California"; prepared by RJR Engineering Group; dated July 19, 2011
- 3. County of San Mateo Assessor County Clerk Recorder; Declaration of Historic Landmark, dated May 13, 2010
- 4. City of Pacifica, Agenda Memo, dated February 16, 2010.
- 5. City of Pacifica Emergency (Local) Coastal Development Plan, dated February 10, 2010.
- 6. "Temporary Stitch Pier, Retaining Structure, Levin Property, 100 Palmetto Dune Lane, Pacifica, California"; Prepared by ESR, Inc., dated February 1, 2010.
- 7. Levin Residence Temporary Stitch Pier Calculations, Prepared by ESR, Inc., dated January 25, 2010
- 8. Levin Residence Temporary Stitch Pier Plans, Prepared by ESR, Inc., dated January 25, 2010
- 9. "Rock Rip-Rap Winterization"; Prepared by ESR, Inc., dated December 7, 2009.

100 Esplanade Drive

- "Addendum #2 Sand Mitigation Assessment, Response to California Coastal Commission Review, Coastal Development Permit Application, Proposed Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City Of Pacifica, California"; prepared by RJR Engineering Group; Dated May 24, 2011.
- 2. "Response to California Coastal Commission Review, Coastal Development Permit Application, Proposed Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City of Pacifica, California"; prepared by RJR Engineering Group; Dated April 8, 2011.



- Sea Wall and Bluff Stabilization Plans; Prepared by RJR Engineering Group, updated April, 2011
- 4. California Coastal Commission, Emergency Permit, Permit 2-10-007-G, dated February 16, 2010
- 5. "Emergency Repair Application, Proposed Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City Of Pacifica, California"; prepared by RJR Engineering Group; Dated January 5, 2011.
- 6. "Seawall and Public Access Engineering Plans Coastal, Civil and Structural Sheets", Prepared by RJR Engineering Group, updated January 5, 2011
- California Coastal Commission, Review of CDP Application 2-10-039, dated December 14, 2010
- 8. "Geotechnical Feasibility Supplemental Letter #1, Emergency Repair Application, Lower Bluff and Public Access Stabilization, Lands End Multi-Family Development, 100 Esplanade Way, Pacifica, California"; Prepared by RJR Engineering Group; Dated December 10, 2010.
- 9. "Emergency Repair Application, Lower Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City Of Pacifica, California"; prepared by RJR Engineering Group; Dated November 20, 2010.
- 10. "Coastal Development Permit Application, Sea Wall and Public Access, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City of Pacifica, California"; prepared by RJR Engineering Group; Dated November 10, 2010.
- 11. "Emergency Repair Application, Upper Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City of Pacifica, California"; prepared by RJR Engineering Group; Dated August 4, 2010.
- 12. "Emergency Permit 2-10-007-G, Public Access Emergency Repair CDP, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City of Pacifica, California"; prepared by RJR Engineering Group; Dated June 23, 2010.
- 13. "Emergency Repair Application, Sewer and Storm Drain Pipe Relocation Plan, Lands End Multi-Family Development, Proposed Bluff Stabilization, 100 Esplanade Way, (APN 009-023-070, City of Pacifica, California"; prepared by RJR Engineering Group; Dated June 10, 2010.


- 14. "Emergency Repair Application, Public Access Emergency Repair CDP, Lands End Multi-Family Development, Proposed Bluff Stabilization, 100 Esplanade Way, (APN 009-023-070, City of Pacifica, California"; prepared by RJR Engineering Group; Dated May 10, 2010.
- 15. "Emergency Permit 2-10-007-G, Public Access Emergency Repair CDP Time Extension, Lands End Multi-Family Development, 100 Esplanade Way (APN 009-023-070), City Of Pacifica, California"; prepared by RJR Engineering Group; Dated April 5, 2010.
- 16. "Emergency Repair Application, Sewer and Stormdrain Pipe Relocation Plan, Lands End Multi-Family Development, Proposed Bluff Stabilization, 100 Esplanade Way, (APN 009-023-070, City of Pacifica, California"; prepared by RJR Engineering Group; Dated January 31, 2010.
- 17. "Analysis of Public Access, Lands End Multi-Family Development, Proposed Bluff Stabilization, 100 Esplanade Way, City Of Pacifica, California"; Prepared by RJR Engineering Group; Dated January 31, 2010.
- 18. "Emergency Repair CDP Application, Lands End Multi-Family Development, Proposed Bluff Stabilization, 100 Esplanade Way, City Of Pacifica, California"; Prepared by RJR Engineering Group; Dated January 31, 2010.
- 19. "Geotechnical Feasibility Study and Analysis, Proposed Bluff Stabilization For Public Assess, Lands End Multi-Family Development, 100 Esplanade Way, Pacifica, California"; Prepared by RJR Engineering Group; Dated October 26, 2009.
- 20. "Proposed Bluff Stabilization for Public Assess, Alternative Engineering Analysis for Bluff Stabilization, Lands End Multi-Family Development, 100 Esplanade Way, Pacifica, California"; Prepared by RJR Engineering Group; Dated October 26, 2009.
- 21. "Geotechnical Engineering Analysis, Bluff Stabilization Staircase, Lands End Multi-Family Development, 100 Esplanade Way, Pacifica, California"; Prepared by RJR Engineering Group; Dated March 24, 2009

330 & 320 Esplanade Avenue

- "Response to City Letter, dated April 21, 2010, Apartment Building Stability, 320 Esplanade Way, City of Pacifica, California"; Prepared by RJR Engineering Group, dated April 25, 2010
- 2. City of Pacifica Letter from Doug Rider; dated April 21, 2010.
- 3. City of Pacifica Letter from Doug Rider; dated April 1, 2010.



- 4. Field Memorandum, Prepared by Construction Materials Testing, Inc.; dated February 8, 2010.
- 5. "Geotechnical Peer Review, Emergency Soil Nail and Shotcrete Design Measures, 330 Esplanade Avenue, Pacifica, California"; Prepared by Cotton, Shires and Associates, Inc.; dated January 25, 2010.
- 6. "Emergency Soil Nail/Shotcrete Emergency Bluff Repair, 330 Esplanade Avenue, Pacifica, California"; Prepared by Alan Kropp & Associates; dated January 19, 2010.
- 7. "Soil Nail and Shotcrete Emergency Bluff Repair, 330 Esplanade Avenue, Pacifica, California"; Prepared by ESR Engineered Soil Repairs, Inc.; dated January 19, 2010.
- 8. "Soil Nail and Shotcrete Emergency Bluff Repair, 330 Esplanade Avenue, Pacifica, California"; Prepared by ESR Engineered Soil Repairs, Inc.; dated January 18, 2010.
- 9. "Recommendations for Geotechnical Risk Evaluation, Apartment Buildings at 310, 320, 330, and 340 Esplanade Avenue, Pacifica, California"; Prepared by Cotton, Shires and Associates, Inc.; dated January 18, 2010.