CALIFORNIA COASTAL COMMISSION
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W7a

Prepared July 11, 2011 (for July 13, 2011 hearing)

Click here to go to the staff report which follows the addendum.

To: Commissioners and Interested Persons

From: Dan Carl, District Manager
Daniel Robinson, Coastal Planner

Subject: STAFF REPORT ADDENDUM for W7a
CDP Application Number 3-10-044 (Crest Apartments Seawall)

The purpose of this addendum is to modify the staff recommendation for the above-referenced item. In the time since the staff report was distributed, several issues warranting additional discussion have been raised, and staff has also identified some minor changes to the recommendation to best address site specific issues with the proposed project. These changes refine as opposed to significantly alter the base staff report recommendation. Thus, the staff report is modified as shown below (where applicable, text in underline format indicates text to be added, and text in ~~strikethrough~~ format indicates text to be deleted):

1. 20-year Approval

Staff's recommended Special Condition 4 authorizes the seawall project for 20 years (see staff report pages 15-16 and 33). The intent of this condition is to address some of the uncertainty associated with shoreline armoring projects such as this, particularly the changing physical circumstances at this site over time. The Commission has recently conditioned other armoring projects with a similar condition requiring re-review after a certain time frame (e.g., CDP 3-09-042, O'Neill (20 years); CDP 3-09-025 Pebble Beach (20 years); CDP 6-08-068, Hamilton (20 years). The appropriate length of the time for such reevaluation in any particular case is a matter of professional judgment based on the facts at issue. In this case staff, including the Commission's senior coastal engineer, believes that 20 years represents an appropriately conservative approach to addressing Coastal Act requirements, including in light of how long such structures tend to last without major maintenance and/or modification, and particularly in light of changing climatic conditions and their effect on coastal erosion and retreat. The staff report, however, inadvertently omitted certain text relevant to this discussion in relation to the existing structure being protected. Thus, the staff report is modified as follows:

a. Modify the staff report on the top of page 16 as follows:

…For these reasons, the Commission uses a design life of 20 years for the proposed seacave infill/plug and seawall in these findings, and implements the 20-year period through conditions (see Special Condition 4). In addition, Special Condition 4 also recognizes that the proposed seawall is being approved under Section 30235 to protect the existing structure in danger from erosion. Coastal Act consistency is only maintained in this scenario when such existing structure is present and in danger. If, for whatever reason, the now existing structure warranting armoring is no longer

present and/or no longer requires armoring for such protection before the twenty years is up, then the approval will no longer be valid. In other words, this approval is for a twenty-year period or the time when the existing structure is no longer present and/or no longer requires armoring, whichever comes first. Further, the approval is specific to the structure as it now exists, and not for a replacement or significantly redeveloped apartment complex. Any such future replacement or redevelopment must be considered independent of the armoring allowed here that is specific to the current situation and current existing structure. See Special Condition 4.

b. Modify Special Condition 4 on staff report page 33 as follows:

4. ***Twenty-Year Approval.*** *This coastal development permit authorizes the seacave infill/plug and seawall for twenty years from the date of approval (i.e. until July 13, 2031) or until the time when the currently existing structure warranting armoring is no longer present and/or no longer requires armoring for such protection, whichever occurs first. If the Permittee intends to keep the seacave infill/plug and seawall in place after that time, the Permittee shall apply for a new coastal development permit authorization to allow the seacave infill/plug and seawall (including, as applicable, any potential modifications to it desired by the Permittee). Provided the application is received before the twenty-year or earlier permit expiration, the expiration date shall be automatically extended until the time the Commission acts on the application. In addition, this coastal development permit authorizes the seacave infill/plug and seawall to protect the apartment complex structure as it now exists. Any future replacement or significantly redeveloped apartment complex project shall be considered independent of the authorized seacave infill/plug and seawall and shall not rely on the seacave infill/plug and seawall to demonstrate Coastal Act and/or City of Capitola LCP consistency.*

2. Landscape Condition

The intent of recommended Special Condition 1(d) is to remove all non-native and/or invasive plants (e.g., iceplant, pampas grass, etc.) currently present in or on the bluffs seaward of the apartment complex and extending down to Esplanade Park and the seawall area, and to replant this area with native bluff species endemic to the Capitola area. The findings supporting this condition are clear on this point (see page 26), but the condition itself lacks a similar level of geographic specificity. Thus, Special Condition 1(d) on staff report page 30 is modified as follows:

(d) Landscaping. *All non-native and/or invasive plants (e.g., iceplant, pampas grass, etc.) currently present seaward of the Crest Apartment complex ~~and along the bluff and the proposed seacave infill/plug and seawall~~, along the entire bluff face and blufftop extending from (a) the upcoast edge of Esplanade Park and the knoll where the bluff extends inland from the shoreline to (b) the downcoast edge of the proposed seawall, or to the exposed concrete foundation elements to be removed, whichever is further downcoast, shall be removed and the area replanted with native bluff species endemic to the Capitola area. …*

3. City-Approved Pier and Grade Beam Project (Soil Pin Wall)

As described in the staff report, the seawall is part of a larger project that includes a buried pier and grade beam project inland of it, where the pier and grade beam component was previously approved by the City. As part of its approval, the City required the Applicant to prepare and implement a monitoring and maintenance plan for regular inspections of the bluff face below the soil pin wall for evidence of exposure of the piers and beam, and placement as necessary of reinforced shotcrete (colored, textured and contoured to mimic the appearance of the adjacent natural bluff) between and structurally attached to the piers on each side of the exposed soil bays as necessary to ensure that the piers and beam do not lead to adverse viewshed impacts if and when they become exposed. The staff recommendation is based on such measures being put in place at that time, but this expectation is implied as opposed to explicit. Thus, the staff report is modified on page 26 as follows:

Finally, the project is related to another armoring project previously approved by the City of Capitola. Namely, the City has approved a project to drill and install concrete piers and a grade beam inland of the bluff top edge in the bluff seaward of the seacave area. Over time, the piers (and possibly even the grade beam) will become exposed as the bluff erodes, leading to significant viewshed impacts. The City conditioned its project to prepare and implement a monitoring and maintenance plan for regular inspections of the bluff face below the soil pin wall for evidence of exposure of the soil pin piers; and placement as necessary of reinforced shotcrete (colored, textured and contoured to mimic the appearance of the adjacent natural bluff) between and structurally attached to the soil pin piers on each side of the exposed soil bays. <u>The Commission understands and expects that the City's requirement will be completely fulfilled in this regard as necessary to ensure that the pier and grade beam system does not lead to adverse viewshed impacts if and when it becomes exposed; that any such camouflaging measures will be sited and designed to ensure that such hard surfaces seamlessly blend with the unarmored adjacent bluffs and mimic these natural undulating bluff landforms (including in terms of integral mottled color, texture, and undulation to the maximum extent feasible, and contouring of any protruding concrete elements (e.g., corners, edges, etc.) in a non-linear manner designed to evoke natural bluff undulations); and that all such measures will be maintained in such manner as long as the pier/grade beam structure is present. As long as this is the case, the Commission need not further condition this project to address such impacts associated with the pier/grade beam component.</u> However, as part of the project before the Commission, the temporary installation of rock dowels with steel pressure plates and wire mesh, essential for worker safety, will in much the same way lead to significant viewshed impacts. While the pressure plates and wire mesh will be removed upon completion of the project, the dowels are to remain, and thus will become exposed as the bluff erodes around them. Therefore, this approval builds on the City's efforts to mitigate visual impacts along the entire bluff face by requiring a remediation plan be implemented to camouflage and remove (cut flush with the bluff) the exposed elements when any portion of the rock dowels become exposed (see Special Conditions 2, 9 and 10). This will effectively minimize visual effects from those dowels which over time will inevitably protrude from the face of the bluff.

4. Other

The staff report inadvertently includes a few typos, and these are corrected as follows:

a. Modify the second paragraph under Section C on staff report page 10 as follows:

In this case, the "no project" alternative is not viable because the existing apartment complex is immediately threatened and in danger from erosion absent some form of ~~redeveloped~~ armoring of the bluff. …

b. Modify the second paragraph on staff report page 6 as follows:

…The total length of the proposed seacave infill/plug and seawall will extend 50 feet as measured along the toe of the bluff with the base cutoff wall excavated at least 5 feet into the bedrock platform ~~and extending down at least~~ to minus 4 feet NGVD …

c. Modify the first paragraph on staff report page 21 as follows:

*…This acknowledgement, as well as the other conditions of the permit, must be recorded through a deed restriction recorded against the subject property to ensure that future property owners are aware of the terms and conditions of this permit that restrict the use and enjoyment of it (see Special Condition 14). ~~** 14~~*

W7a

SURFRIDER FOUNDATION SANTA CRUZ CHAPTER

July 11, 2011

California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
Attention: Daniel Robinson
drobinson@coastal.ca.gov

RE: Application No. 3-10-044 (Crest Enterprises LLC, Capitola) to Permit Coastal Armoring at Crest Apartments, Capitola – Wed 7a

Via electronic mail to Daniel Robinson

Dear Chair Shallenberger and Commissioners,

Please accept these written comments on behalf of the Santa Cruz Chapter of Surfrider Foundation ("Surfrider") in regards to the application of Crest Enterprises, LLC ("Applicant") to construct a seawall seaward of the Crest Apartments in Capitola (Item Wed 7a). Surfrider Foundation is a non-profit environmental organization dedicated to the protection and enjoyment of our world's oceans, waves and beaches, for all people.

Surfrider does not support the hardened armoring of our coast, due to its primary and secondary impacts on beach width, beach access, and biological resources. However, Surfrider recognizes that the Coastal Act provides for armoring when required to protect existing structures and when impacts to sand supply are mitigated. In the context of this policy, Surfrider feels that Staff has responded appropriately by recommending a timeframe for expiration of the permit so that it is not effective indefinitely and by requiring that the project's impacts to sand supply be mitigated. Notwithstanding, Surfrider believes that the proposed special conditions of approval as recommended by Staff require additional provisions to fully and effectively mitigate impacts to coastal resources.

Special Condition 4 (Twenty Year Timeline): Since the purpose of this condition appears to be to allow for the ***existing*** structure to be protected, a provision should be added that triggers expiration of the CDP upon substantial redevelopment of the property or that clearly states that this CDP is valid to protect the existing structure as it presently exists. If and when the apartments, which are the "existing structure" that the proposed project seeks to protect, are being considered for demolishment or redevelopment, this is the crucial point at which the continuing economic viability of this coastal property and the development on it needs to be questioned. In the absence of such a provision, the economic viability of this private property could be artificially extended by the permitted seawall at the expense of the public beach and downcoast properties.

SURFRIDER FOUNDATION SANTA CRUZ CHAPTER

Suggested amendments to Special Condition 4 as proposed are written below; new text is written in underline and deletions are written ~~in strikeout~~.

4. Twenty-Year Approval. This coastal development permit authorizes the seacave infill/plug and seawall to protect the Permittee's existing structure as it exists at the time of issuance of the permit, for twenty years from the date of approval (i.e. until July 13, 2031), or until substantial redevelopment of the existing structure from its condition as it exists at the time of issuance of the permit occurs, whichever occurs first. If the Permittee intends to keep the seacave infill/plug and seawall in place after July 13, 2031, the Permittee shall apply for a new coastal development permit authorization to allow the seacave infill/plug and seawall (including, as applicable, any potential modifications to it desired by the Permittee). Provided the application is received before the twenty-year permit expiration, the expiration date shall be automatically extended until the time the Commission acts on the application.

Special Condition 7 (Sand Supply Mitigation): Pursuant to Section 30235, coastal armoring to protect an existing structure is only permissible when impacts to sand supply are mitigated. Staff proposes to mitigate these impacts via an in lieu fee, and calculates the in lieu fee based on the present cost of the amount of sand estimated to be displaced seaward of the seawall over the life span of the project. This present cost is calculated to be $39,438 (Staff Report p. 33). Surfrider has three main concerns with this calculation.

The first concern is that the mitigation funds set aside are **not required to be used for a project that would actually improve access to this stretch of beach.** The funds could be used for ***any*** area amenity improvements, such as more benches or trash cans for the upcoast stretch of beach, instead of being put towards maintaining access to this important stretch of beach through sand replenishment or construction of stairs. Although most surfers *enter* the surf zone west of the groin at Esplanade Park, the beach eastward of the groin at Esplanade Park is often used by surfers to *exit* the surf zone at Capitola. Depending on the swell, there are one or more peaks that break eastward of the groin and continue to peel eastward until they terminate further downcoast. Exiting the surf zone at mid to high tide from this beach can be challenging, especially during winter swells. It has only become more challenging as the bluffs eastward of the groin continue to erode and the groin and park remain fixed.

The second concern is that the amount being set aside for mitigation is being calculated to replace the lost sand, but that the actual cost to replace this sand or mitigate the loss of sand would be substantially greater. According to Staff, it is likely that sand placed on the beach would disappear after one storm event,[1] thus doing so would not effectively mitigate for the project's contribution to loss of beach sand over time. Given that a one-time replacement of sand will not sufficiently mitigate for the impact, it is not logical that

[1] Personal communication from Susan Craig, Coastal Commission Staff, via Daniel Robinson, Coastal Commission Staff, to Sarah Damron, Surfrider Foundation. July, 1, 2011.

the in lieu fee would be calculated in this manner. Instead, the in lieu fee needs to be equal to the cost of a ***feasible*** mitigation alternative. Continual nourishment of the beach or construction of stairs from Esplanade Park to the downcoast beach—another mitigation alternative—would most certainly cost more than $39,438.

The third concern is that the present cost of mitigation is not necessarily equal to the future cost of mitigation. The cost of materials, labor, transport, etc. are likely to rise over time, and to allow for adequate mitigation the amount of money set aside needs to rise accordingly.

To address these concerns of in lieu fee calculation, Surfrider proposes that provisions be added to Special Condition 7 to require that the payment is sufficient to cover the cost of an appropriate project and that additional annual payments be made to the established account to annually adjust for inflation.

Suggested amendments to Special Condition 7 as proposed are written below; new text is written in underline and deletions are written ~~in strikeout~~.

7. Public Access/Sand Supply Mitigation. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director evidence that a public access/sand supply mitigation payment equal to the cost of as-needed sand replenishment or construction of stairs from Esplanade Park to the beach directly seaward of the project~~of $39,438~~ has been deposited into an interest-bearing account to be established and managed by the City of Capitola or another appropriate entity as approved by the Executive Director. Additionally, on an annual basis, the Permittee shall submit to the Executive Director evidence that an additional annual payment, equal to the amount of the initial mitigation payment multiplied by the annual inflation rate, as measured by the Consumer Price Index, minus the mitigation payment amounts previously deposited, has been deposited into the aforementioned account. The sole purpose of the funds/account shall be for public beach recreational access improvements to the beach directly seaward of the project~~(such as benches, picnic tables, trail improvements, interpretive signage, sand replenishment, etc.)~~ in the City of Capitola. ~~If, prior to issuance of the CDP, the Permittee submits three valid bids for the cost of delivered beach quality sand that average to an amount less or more than $42 per cubic yard and the bids have been reviewed and approved by the Executive director, this payment may be adjusted to the average for these three bids.~~ All of the funds and any accrued interest shall be used for the above-stated purpose, in consultation with the Executive Director, within ten years of the funds being deposited into the account. PRIOR TO EXPENDITURE OF ANY FUNDS CONTAINED IN THIS ACCOUNT, the Executive Director must review and approve the proposed use of the funds as being consistent with the intent and purpose of this condition.

SURFRIDER FOUNDATION SANTA CRUZ CHAPTER

In sum, Surfrider respectfully requests the Commission's consideration of these concerns and incorporation of provisions in Special Conditions 4 and 7 to address these issues appropriately.

Sincerely,

Dustin Macdonald, Chair
Surfrider Foundation
Santa Cruz Chapter
dustin@surfridersantacruz.org

CC:
Peter Douglas, Executive Director, California Coastal Commission
Charles Lester, Senior Deputy Director, California Coastal Commission
Dan Carl, District Supervisor, California Coastal Commission

W7a

FORM FOR DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project, LCP, etc.:	W7a Application No. 3-10-044 (Crest Enterprises LLC, Capitola)
Date and time of receipt of communication:	7/5/11 9:00 am
Location of communication:	Office of the Board of Supervisors, Santa Cruz, CA
Type of communication:	In-person Meeting,
Person(s) initiating communication:	Sarah Damron Margie Kay Grant Weseman
Person(s) receiving communication:	Mark Stone

Detailed substantive description of content of communication:
(Attach a copy of the complete text of any written material received.)

They were speaking on behalf of the Surfrider Foundation Santa Cruz Chapter Surfrider has communicated with Staff regarding concerns about project conditions, namely:

- So that the armoring doesn't exist indefinitely, one of Staff's proposed conditions for approval is for the CDP to expire after 20 years. There should be a provision for removal of the armoring if a subsequent CDP is not issued after the initial CDP expires.

- There should be an additional provision that triggers permit expiration and requires the removal of armoring if the apartments are redeveloped or demolished. Otherwise, the presence of the armoring may allow for imprudent future development on the property.

- Although in lieu fees are better than no mitigation at all, they often don't go far enough to mitigate impacts of armoring. In this case, the fees could possibly be used for other projects on Capitola Beach (i.e. more benches) as opposed to projects that specifically address the impact caused by the project (= reduced beach area in front of the seawall).

Access to and from this stretch of beach is already difficult and requires scrambling over the rocks from the groin. A more appropriate mitigation project such as building stairs from Esplanade Park to the beach east of the groin would likely cost far more than the approximately $39,000 that has been calculated for mitigating loss of beach sand.

Date: 7/6/11 Signature of Commissioner: Mark Stone

If the communication was provided at the same time to staff as it was provided to a Commissioner, the communication is not ex parte and this form does not need to be filled out.

If communication occurred within seven or more days in advance of the Commission hearing on the item that was the subject of the communication, complete this form and transmit it to the Executive Director within seven days of the communication. If it is reasonable to believe that the completed form will not arrive by U.S. mail at the Commission's main office prior to the commencement of the meting, other means of delivery should be used; such as facsimile, overnight mail, or personal delivery by the Commissioner to the Executive Director at the meeting prior to the time that the hearing on the matter commences.

If communication occurred within seven days of the hearing, complete this form, provide the information orally on the record of the proceeding and provide the Executive Director with a copy of any written material that was part of the communication.

W7a

420 CAPITOLA AVENUE
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TELEPHONE (831) 475-7300
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July 1, 2011

C E R T I F I E D M A I L

California Coastal Commission
Central Coast District Office
Attention: Daniel Robinson
725 Front Street, Suite 300
Santa Cruz, CA 95060-4508

RE: 101 Grand Avenue

Dear Mr. Robinson:

The City appreciates the opportunity to work with the California Coastal Commission to identify feasible mitigation measures for 101 Grand Avenue. As you know, the City has made significant commitments to resource protection and coastal access in its certified Local Coastal Program. Visitor and resident access to the wide range of beach uses helps drive our local economy and is part of Capitola's identity.

The City has evaluated the proposal to provide an additional beach accessway at the end of Esplanade Park and has determined it to be infeasible. The City does not have exclusive development rights to this facility as it is shared with the County of Santa Cruz Sanitation District. However, the biggest concern is that additional beach accessway at the eastern end of the Esplanade would be to beach areas that are predominately underwater for the majority of the year.

The City has rescued many beach goers over the years that became stranded as both waves and tides came in and more convenient access to this beach area would likely strain limited first responder resources. The current beach access around the eastern point of the Esplanade provides a clear indication of when tide and wave activity is too high for access. Providing additional access off the eastern area of the Esplanade would be to beach areas that are predominately underwater and encourage access where beach goers would be exposed to strong currents and wave activity and would likely be stranded.

The City has an adopted and certified beach nourishment program. The program has accumulated funding to nourish sand at Capitola Beach as needed. The City has been fortunate that recent rainfalls in the past few years have delivered enough sediment for a healthy and usable beach. The accumulated restricted program funding will be used should the City determine that sediment is not adequate for beach use and recreation consistent with the certified beach nourishment program. Additional funding for this program would provide more resources when the time comes to add sand to Capitola Beach.

Please do not hesitate to contact me should you have any questions.

Sincerely yours,

Derek Johnson
Community Development Director

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W7a

Daniel Robinson

From: Sarah Damron [sdamron@surfrider.org]
Sent: Wednesday, June 29, 2011 4:25 PM
To: Daniel Robinson
Subject: crest apartments seawall

Follow Up Flag: Follow up
Flag Status: Red

Hi Dan,

There are a couple proposed conditions for the Crest Apartments seawall that I have concerns with: 1) the twenty-year timeline (Special Condition 4) and 2) Sand Supply Mitigation (Special Condition 7). The Santa Cruz Chapter meets tonight, so I plan to take up with them what kind of action they might like to take, but in the interim I thought I would bring these issues to your attention in case they are merely oversights that might be addressed prior to the Commission hearing.

Special Condition 4/Twenty Year Timeline: Although I certainly appreciate the concept of non-permanant armoring for adaptive management purposes and to reflect the non-infinite economic lifespan of a development, I am concerned that the condition as written leaves two gaping holes.

One would be in the instance that a CDP is not approved again after 20 years. To accommodate an instance in which a future CDP is not approved, shouldn't there be a provision that requires the seawall to be removed? Otherwise, you either end up with a seawall that is no longer being monitored/maintained or you establish a de facto approval for a future seawall in attempt to avoid the former scenario.

The other concern I have with this condition is that it does not include provisions for removal of the seawall in the event that the apartments are demolished or redeveloped. If and when the apartments, which are the "existing structure" that the proposed project seeks to protect, are being considered for demolishment or redevelopment, this is the crucial point at which the viability of this coastal property and the development on it needs to be questioned. Actually demolishing or redeveloping should effectively negate the CDP, as the CDP was given to protect the then-existing structure--not to allow for future redevelopment and artificial extension of the economic viability of this threatened private property at the expense of the beach and downcoast properties.

Special Condition 7/Sand Supply Mitigation: I should preface my comments here with the disclosure that I have an issue with in-lieu fees in general (and I lump sand supply mitigation in with that since technically new sand would be placed instead of the sand that's already there) because it seems to me that setting funds aside to protect something else is not the same as protecting what should be protected in the first place. I know that you did not invent the in-lieu fee or how it is applied at the Commission, so I'm not blaming you for applying existing practices.

That said, I have some issues with how the mitigation $ amount is determined. It doesn't make sense to me to calculate the mitigation $ amount based on what it would cost to buy the equivalent amount of sand lost to the beach. Two main reasons:

1. Given natural setting and conditions, it seems unlikely that merely requiring the project proponent to put funds toward the replacement of sand will necessarily result in pre-project conditions. Timing of the sand placement, location of the sand placement, and quality of the sand are major factors. Messing them up could actually require a lot more sand than what is lost due to project implementation. Something to consider.

2. It sounds like the mitigation money can be spent on beach amenity improvement generally and is not necessarily meant or required to be spent on sand. That being the case, figuring out the cost to replace the sand may not be sufficient to mitigate the loss of beach and beach access. If a stairway from Esplanade Park to this stretch of beach were built, which would probably be the most equitable solution next to replenishing the sand, I imagine it would cost more than $39,000 to build. (I know the City is against the

idea, but I imagine that they may have to get warmer to the idea if people are unable to safely traverse upcoast to get out of the water.)

Additionally, since the sand won't be placed tomorrow, it's reasonable to believe that replacing the sand (or implementing another project to achieve the same objective, i.e. stairway) won't cost what it does today. At the very least, an annual inflation rate should apply and this extra amount could be paid into the account annually until a mitigation project is implemented. Without considering future costs, the amount set aside will undoubtedly not be enough to mitigate for the impact.

~~~

Sending this along as food for thought, in the hopes that they are constructive thoughts that could help protect our public resources if this project is approved.

Thanks for your consideration~
Sarah Damron
Central California Regional Manager
Surfrider Foundation
sdamron@surfrider.org
cell: 831 239 1520
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W7a

CALIFORNIA STATE LANDS COMMISSION
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December 9, 2010

File Ref: SD 2010-06-28.3

City of Capitola
Attn: Ryan Bane
101 Capitola Avenue
Capitola, CA 95010

Dear Mr. Bane:

SUBJECT: Mitigated Negative Declaration (MND) for the Proposed Crest Bluff Stabilization Project Adjacent to 101 Grand Avenue (APN: 036-114-12), City of Capitola, Santa Cruz County

Staff of the California State Lands Commission (CSLC) reviewed the MND concerning the subject project.

As background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. Such lands include, but are not limited to, the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the three-mile wide band of tide and submerged lands adjacent to the coast and offshore islands of the State. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation and open space. The boundary of these State-owned lands is generally the mean high tide line, except for fills or artificial accretion.

The facts pertaining to the Crest Bluff Stabilization Project, as we understand them, are these:

- The Crest Apartment building is threatened by the continued and imminent collapse of the coastal bluff on which the apartment is situated.
- The project proposes to plug a sea cave at the base of the bluff, as well as construct a "soil pin" retaining wall on top of the bluff.

Based on staff's review of our in-house records and maps, it appears that the Pacific Ocean at this location is within lands granted to the City of Capitola, pursuant to

Chapter 687, Statutes of 1935, and as amended by Chapter 884, Statutes of 1974, with minerals reserved to the State. The uplands are located within Rancho Shoquel. It also appears that a parcel of land is located between the subject parcel and the Pacific Ocean, and assessed to the City of Capitola. Therefore, a lease from the CSLC will not be required for the project.

Accordingly, 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.

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 California State Lands Commission. If you have any questions, please contact Drew Simpkin, Public Land Management Specialist, at (916) 574-2275.

Sincerely,

Brian Bugsch, Chief
Land Management Division

cc: Drew Simpkin, CSLC

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W7a

Filed:	01/28/2011
180th day:	07/27/2011
Staff report prepared:	06/23/2011
Staff Report prepared by:	D. Robinson
Staff Report approved by:	D. Carl
Hearing date:	07/13/2011

COASTAL DEVELOPMENT PERMIT APPLICATION

Application number.....**3-10-044, Crest Apartments Seawall**

Applicant.....**Crest Enterprises, LLC**

Project location .....Beach and bluffs below the 19-unit Crest Apartments at 101 Grand Avenue (APN 036-114-12) and downcoast of Capitola Beach and the beach promenade in the Depot Hill area of the City of Capitola, Santa Cruz County.

Project description.....Construct an approximately 50 foot long seawall, including infill of an approximately 20 foot high by 15 foot deep seacave inland of the seawall toe.

Local Approvals .....City of Capitola approval May 6, 2010

File documents.....*Coastal Geologic Investigation* by Zinn Geology, dated June 22, 2009; *Geotechnical and Coastal Engineering Investigation* by Haro, Kasunich and Associates, Inc., dated October 2009; *Crest Apartments-Emergency Bluff Stabilization Project, City of Capitola, Santa Cruz County Biotic Report* by Biotic Resources Group, dated March 24, 2010; *Paleontological Resource Assessment of a Portion of the Sea Cliff Below the Crest Apartments (101 Grand Avenue, Capitola, California)* by Robert K. Smith, Ph.D, Smith-Evernden Associates, dated January/February 2010; City of Capitola Certified Local Coastal Program (LCP).

Staff Recommendation ..**Approval with Conditions**

A.Staff Recommendation

1. Summary of Staff Recommendation

The proposed project site is located just downcoast of Capitola Village at the base of the Depot Hill coastal bluff adjacent to a small beach that is exposed during lower tides. The 19-unit Crest Apartments complex is located atop the Depot Hill coastal bluff, directly above the proposed project site. A portion of the bluff below the Crest Apartments is not armored and is subject to heavy wave action that has created an approximately 20 foot high by 15 foot deep seacave and an extended wave cut notch. The bluff retreat rate in this area is almost one foot per year.

The seacave and wave cut notch that has formed at the base of the bluff is jeopardizing the Crest Apartments, a portion of which are positioned between 8 and 12 feet from the top of the bluff. The Commission's staff geologist and staff engineer have determined that the Crest Apartments are in danger from erosion as that term is understood in relation to the Coastal Act. To address the danger to the Crest Apartments, the Applicant proposes to fill the seacave and notch (to form a seawall) with full-strength structural concrete with an artificial rock fascia designed to simulate the adjacent natural bluff forms. The proposed project would also include the reuse of existing scattered concrete pillars and other clean concrete debris that is located on the beach just seaward of the complex for use in the seacave infill/plug and the temporary installation of dowels, pressure plates and wire mesh above the seacave for worker safety.

Shoreline armoring has a number of impacts on the coast, including, but not limited to, impacts from encroachment, fixing the back of the beach, and preventing the natural erosion of coastal bluffs that provide sandy material to the nearby beaches. Some impacts from such a project cannot be avoided, but they can be reduced and mitigated by conditions. In this case, the proposed project's impacts (including to public views and visual resources, marine resources, public access and recreation, and in relation to geologic hazards safety) can be mitigated with conditions to appropriately offset such impacts.

Staff recommends that the Commission approve a CDP for the proposed project, along with mitigations for the impacts of the project, including, but not limited to: 1) authorization of the seacave infill/plug and the extended seawall for a period of twenty years; 2) provisions to ensure that the project emulates and evokes natural bluff landforms as much as possible; 3) protection of paleontological resources; 4) requirements for other agency approvals; 5) removal of non-native invasive plants along the blufftop and above the seacave fill and seawall; 6) assumption of risk, waiver of liability and indemnity agreement for coastal hazards; 7) monitoring and maintenance of the as-built project over the life of the project; 8) appropriate best management practices to protect water quality and public access during construction and 9) mitigation for remaining project impacts through a sand and beach loss mitigation payment to the City of Capitola, or a similar entity, for public beach recreational access improvements (such as benches, picnic tables, trail improvements, interpretive signage, sand replenishment, etc.) within the City of Capitola.

Thus as conditioned, and as further detailed in the conditions and findings below, Staff believes that the proposed project is consistent with the Coastal Act and Staff recommends approval. The motion to act on this recommendation is found directly below.

2. Staff Recommendation on Coastal Development Permit

Staff recommends that the Commission, after public hearing, **approve** the proposed project subject to the standard and special conditions below.

> **Motion:** I move that the Commission approve coastal development permit number 3-10-044 pursuant to the staff recommendation. I recommend a yes vote.
>
> **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. 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.

Staff Report Contents

B.Findings and Declarations

The Commission finds and declares as follows:

1. Project Location, Background and Description

A. Project Location

The Crest Apartments, first built in 1964, sit atop a high coastal bluff in the Depot Hill portion of the City of Capitola, between the Capitola Wharf/Village and New Brighton State Beach, in Santa Cruz County. Depot Hill is a primarily residential area extending upslope (and at a higher elevation) just south of Capitola Village. The Crest Apartments are at the corner of Depot Hill, and thus at the top of bluffs on two sides: one that extends westerly down toward the Village and one that extends southerly and easterly toward the ocean. On the ocean side, the City's elevated concrete promenade, known as Esplanade Park,[1] extends along most the base of the bluff, effectively armoring about 150 linear feet of bluff. Just past the end of Esplanade Park, the high bluffs extend about three-quarters of a mile to New Brighton State Beach, with only very limited beach area (almost exclusively during very low tides) along the bluffs.

As is typical of the shoreline in this general area, the bluffs have experienced consistent erosion over time. The bluff geology consists of gently dipping, late Tertiary sedimentary rocks overlain by nearly horizontal, Quaternary terrace deposits, or about 16 feet of terrace deposits overlying about 54 feet of sandstone/siltstone bedrock. The Purisima foundation bedrock is well exposed in the bluff face at the project site and is considered particularly important for scientifically significant fossils. The terrace deposit materials are particularly susceptible to coastal erosion from ocean wave run-up, terrestrial runoff, and seismic activity. The bluff top ranges from about 70 to 80 feet above mean sea level (NGVD 29)[2] and slopes very gently from the southeast to the southwest. The Esplanade Park seawall blocks the upcoast base of the bluff from wave erosion. Here the bluff face is steeply sloped (at about 65 degrees) and the apartments above this section are as close as 8 feet from the bluff top edge. The downcoast half of the property, and immediately downcoast of Esplanade Park, is not protected and as a result is actively eroding. Here, the bluff extends inland from the existing seawall where it is undercut and a seacave (approximately 15 feet deep), with an extended wave cut notch, has formed. Units 7 and 8 of the Crest Apartments along this downcoast section are as close as about 12 feet from the bluff top edge. See photos of the area in Exhibit C.

The shore platform at the base of the bluff, which is seasonally covered by sand, slopes gently seaward. The regional shoreline here is oriented southwest to northeast, which parallels the dominant downcoast wave direction. In the Santa Cruz area, this resulted in the creation of a series of mostly pocket beaches, some large and some very small, which are sensitive to seasonal changes and human intervention. Between Santa Cruz and Capitola, the beach is generally narrow and discontinuous with a historically documented rate of long-term average annual erosion that is over 1 foot per year in some places. Here,

[1] This area is sometimes referred to as the pump house area, and was apparently at one time was part of the foundation system for a now long gone beachfront hotel.

[2] The Sea Level Datum of 1929 was the vertical control datum established for vertical control surveying in the United States of America by the General Adjustment of 1929. The datum was used to measure elevation (altitude) above, and depression (depth) below, mean sea level (MSL). It was renamed the National Geodetic Vertical Datum of 1929 (NGVD 29) in 1973. The NGVD 29 was subsequently replaced by the North American Vertical Datum of 1988 (NAVD 88) based upon the General Adjustment of the North American Datum of 1988.

long-term average annual erosion rates have been calculated to be 0.9-ft per year.[3]

The seacave directly below Units 7 and 8 starts about 8 feet downcoast of the northeast corner of the Esplanade Park area, and is separated from it by a remnant elevated bedrock beach platform. The City has installed two groins at the corners of Esplanade Park, a larger groin at the upcoast edge, and a smaller groin near the downcoast end of the park platform. These groins extend out into the ocean, the larger one about 320 feet and the smaller one about 45 feet, and they were constructed in the 1960s to retain sand for Capitola Beach. The quarrystone groins and the perimeter of the Esplanade Park form an artificial headland, which appears to have concentrated wave energy in the corner, or pocket, downcoast of the headland, directly at the location of the seacave below the apartments.

See Exhibit A for the project location map and Exhibit C for photographs of the project site.

B. Project Site History

The Crest Apartments project site has a long history. Built in 1964, the Crest Apartments complex predates the passage of Proposition 20 (the Coastal Initiative) in 1972 and the enactment of the Coastal Act in 1976. The earliest coastal permits associated with the site are from the late 1970s, and allowed for the placement of rip rap and other armoring protection at the base of the bluff below the complex itself (CDPs P-77-987 and P-79-215). However, those permits were never exercised, and the projects weren't ever constructed. Subsequently, in the early 1980s, a number of four-foot diameter concrete caissons were poured beneath the concrete foundation at its westernmost most edge to add foundation support to the complex. In 1986, severe erosion due to heavy winter rains caused the City of Capitola to declare four of the units nearest to the bluff top edge uninhabitable due to the overall unstable nature of the underlying bluffs. The property owners applied to the City for the foundation improvements necessary to stabilize these units and allow them to be used. As a condition of the approval for these foundation improvements, the City required the owners to apply to the Coastal Commission to fill a seacave which existed at the base of the bluff. In 1988, the Coastal Commission approved CDP 3-88-111 authorizing the seacave fill at the very same location that forms the basis for the current proposal. This project approval required an Offer to Dedicate (OTD) access easement for the area of beach from the edge of the seacave fill to the mean high tide line, and this OTD was recorded and subsequently accepted by the City. Soon after the approval but before the foundation improvements or the seacave fill projects were underway, the 1989 Loma Prieta earthquake struck, and led to additional apartment stability problems. At that time, the City declared two more apartment units uninhabitable, and the owner decided to simply remove all six unstable units from the complex. In 1990, the apartment owner applied to the City and received an emergency permit to remove the six units and to reconstruct the parking garage and roof deck (City CDP 3-CAP-90-004) in the area where the six units were removed. According to the permit, no human habitation was to be allowed in this reconstructed area.

In 2006, the Applicant applied to the City for additional reinforcement and enhancement of a portion of

[3] Although bluff retreat is generally episodic, typically occurring every few seasons in response to large storms or when surf cut notches at the base of the bluffs intercept planes of structural weakness in the bedrock, long-term average annualized rates have historically been used to average out such acute events over time, and to provide a tool for understanding historic erosion trends.

the existing foundation along the western perimeter of the complex with a foundation system of underpinning piers and concrete berms (City CDP 3-CAP-06-505). In 2007, the City approved additional piers in same area (City CDP 3-07-404). In 2010 the Applicant received another approval for additional bluff top stabilization (City CDP 3-CAP-10-150). According to the Applicant, the project before the Commission is interrelated to this 2010 project approved by the City (but not yet constructed), and they are dependent on each other in order to achieve their objectives. Most recently, in May of 2011, another local permit was approved for further foundation underpinning piers and concrete beams (in a different area than the project before the Commission), along the southwest perimeter of the complex (City CDP 3-CAP-11-113).

C. Project Description

The Applicant is proposing to first clear the seacave and the extended wave cut notch downcoast of the seacave of sand and debris, and then fill the seacave and notch to the drip line with structural concrete, including using some remnant concrete pier fragments and concrete foundation elements that are located on the beach, forming a seawall. The proposed project would include applying a reinforced concrete facing (colored, textured, and sculpted to mimic the adjacent bedrock) to mitigate the effects of wave impact and wave action erosion/abrasion. This application would follow the existing topographical contours of the bedrock shelf that projects inward as it curves downcoast thus maintaining the bluff's undulating relief. The total length of the proposed seacave infill/plug and seawall will extend 50 feet as measured along the toe of the bluff with the base cutoff wall excavated at least 5 feet into the bedrock platform and extending down at least 4 feet NGVD to mitigate the down wearing or abrasion of the bedrock platform and to protect the toe of the bluff from undermining over time. The seawall face is proposed to be a continuous, structural extension of the reinforced seacave infill/plug, and maintenance of the facing will include repair of the upcoast and downcoast ends when outflanked due to erosion of the surrounding non-armored portions of the bluff over time.

All roof and hardscape runoff would continue to be collected and directed away from the blufftop to the street.[4] No drain lines extend and none are proposed to extend from the apartment complex or garage over the blufftop.

During construction a series of steps will be undertaken to ensure worker safety. First, workers will scale the bluff face above the seacave to remove any debris, loose soil materials, and/or detached rock. Next, they will install rock anchors with pressure plates and wire mesh to secure fractured material from falling onto the work site. This is a temporary stabilization of the fractured bedrock face above the project work area to provide protection to the construction workers while work is being undertaken. Once the project is complete, the steel plates and wire mesh will be removed leaving the dowels in the

[4] In 1990, a drainage retrofit took place within the parking garage, situated on the downcoast perimeter of the apartments. According to the Applicant's coastal engineer, garage roof runoff is directed to the street via a system of steel piping mounted to the garage ceiling and walls. Portions of the seaward perimeter of the garage are open to the elements with runoff collected from these areas and conveyed to garage floor drain inlets and on to the street drain. Apartment roof runoff is collected and conveyed to the street drain system, as is runoff from the interior courtyard deck and poolside hardscape. Decks along the western perimeter (above Capitola Village) and southern perimeter of the apartment complex are small in size and isolated from one another with runoff flowing to the vegetated blufftop.

bluff. The Applicant has proposed to have an inspector observe the area of bluff face where the rock dowels will be located (in tandem with observations required by the City of Capitola for approval of the bluff top stabilization system) and to camouflage when outflanked by the surrounding bluff. Removal of the exposed rock dowels will be an ongoing process during the inspections, monitoring and repair and maintenance process.

The Applicant indicates that the proposed project has been designed for a lifetime of 50 years. See Exhibit B for project plans and Exhibit C for photographs of the proposed project.

2. Coastal Development Permit Determination

The proposed project falls within the Commission's retained jurisdiction and thus the standard of review is the Coastal Act. As relevant, the City of Capitola's certified LCP can provide non-binding guidance. However, the LCP and Coastal Act policies are very similar in regards to allowing shoreline armoring and eliminating or mitigating for its impacts. Thus, the LCP policies do not provide significantly different policy direction in this case, and their usefulness in this review is limited as a result.

A. Geologic Conditions and Hazards

1. Applicable Policies

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

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

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

> ***Section 30253.*** *New development shall do all of the following:*
>
> *(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 Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins, seacave infill/plugs and other such structural or "hard" methods designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, with the exception of new coastal-dependent

uses, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately resulting in the loss of beach.

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

Under Coastal Act Section 30235, shoreline protective structures may be approved if: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline altering construction is required to protect the existing threatened structure; and (4) the required protection is designed to eliminate or mitigate the adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is necessary. The fourth question applies to mitigating some of the impacts from armoring.

2. Analysis

A. Existing Structure to be Protected

For the purposes of shoreline protective structures, the Coastal Act distinguishes between development that is allowed shoreline armoring, and development that is not. Under Section 30253, new development is to be designed, sited, and built to allow the natural process of erosion to occur without creating a need for a shoreline protective device. Coastal development permittees for new shorefront development are thus making a commitment to the public (through the approved action of the Commission, and its local government counterparts) that, in return for building their project, the public will not lose public beach access, offshore recreational access, sand supply, visual resources, and natural landforms, and that the public will not be held responsible for any future stability problems.

Coastal Act 30235 allows for shoreline protection in certain circumstances (if warranted and otherwise consistent with Coastal Act policies) for “existing” structures. “Existing structures” refers to those structures in place prior to the effective date of the Coastal Act. Coastal zone development approved and constructed prior to the Coastal Act went into effect was not subject to Section 30253 requirements. Although some local hazard policies may have been in effect prior to the Coastal Act, these pre-Coastal Act structures have not necessarily been built in such a way as to avoid the future need for shoreline protection (in contrast to those evaluated pursuant to Section 30253 and similar LCP policies since).

In a limited number of cases, the Commission has required applicants for blufftop structures to waive any right to a seawall that may exist pursuant to Section 30235; in other words to stipulate that they are

not existing structures for 30235 purposes because the structures have been sited and designed to not need shoreline armoring in the future (pursuant to Section 30253 and LCP counterpart policies).

In this case, the existing apartment complex at the site was built in 1964, and is clearly present in a photograph taken from offshore in 1972 (see Exhibit C). Thus, the residence predates the coastal permitting requirements of both 1972's Proposition 20 (the Coastal Initiative)[5] and the 1976 Coastal Act. As such, the residence qualifies as an existing structure for the purposes of Section 30235.

B. Danger from Erosion

The Coastal Act allows shoreline armoring to protect existing structures in danger from erosion, but it does not define the term "in danger." There is a certain amount of risk involved 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.[6] These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all development along the immediate California coastline is in a certain amount of "danger." It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring per 30235. Lacking Coastal Act definition, the Commission's long 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." While each case is evaluated based upon its own particular set of facts, the Commission has generally interpreted "in danger" to mean that an existing structure would be unsafe to occupy within the next two or three storm season cycles (generally, the next few years) if nothing were to be done (i.e., in the no project alternative).

In this case, the entire complex is located between 8 and 12 feet from the blufftop edge. The bluffs directly downcoast from Esplanade Park have experienced average annual long term erosion of approximately 0.9 feet per year. The base of the bluff behind the esplanade is not eroding due to surf attack, however, there has been up to about 20 feet of bluff top retreat over the past 60 years at the downcoast end of Esplanade Park. Such erosion does not occur as small incremental amounts each year, but more often as several feet to ten feet of retreat during a significant winter storm and then only small amounts of retreat during other years. In addition to erosion, the subject site is subject to heavy wave action. The Applicant's geotechnical consultant indicates that the seacave infill/plug and seawall at this location is necessary to protect the existing complex from immediate erosion danger and impacts from wave attack. The Commission's senior geologist and engineer concur. The existing structure is "in danger from erosion" as that term is understood in a Coastal Act context, and thus the project meets the second test of Section 30235 of the Coastal Act.

C. Feasible Protection Alternatives to a Shoreline Structure

[5] Proposition 20's coastal permitting requirements began in 1973.

[6] Adding to the vulnerability at the project site is the inevitable and frequent seismic activity. In general, this area is considered to be highly active, and is influenced primarily by the northwest trending San Andreas Fault, situated northwest of the project property.

The third Section 30235 test that must be met is that the proposed armoring must be "required" to protect the existing threatened structure. In other words, shoreline armoring can be permitted if it is the only feasible alternative capable of protecting the existing endangered structure.[7] When read in tandem with other applicable Coastal Act policies cited in these findings, this Coastal Act 30235 evaluation is often conceptualized as a search for the least environmentally damaging feasible alternative that can serve to protect existing endangered structures. Other alternatives typically considered include: the "no project" alternative; abandonment of threatened structures; relocation of threatened structures; sand replenishment programs; drainage and vegetation measures on the blufftop; and combinations of each.

In this case, the "no project" alternative is not viable because the existing apartment complex is immediately threatened and in danger from erosion absent some form of redeveloped armoring of the bluff. A no project alternative would result in a collapse of the seacave at the toe of the bluff and translate up to the top of the bluff. This failure would undermine the subject apartment building. Further, a no project alternative would also result in the undermining of the toe of the bluff adjacent to the City's existing Esplanade Park, which is a heavily used public view area. This park and viewing area is located immediately adjacent to the seacave and under the apartment complex and, according to the Applicant's coastal engineering consultant, is within the imminent failure line. In addition to the apartment complex, this area would also be outflanked and undermined. Esplanade Park is made up around a pump house which includes the housing for a vent for the upcoast sanitary sewer pump station as well as other public amenities. These services would be adversely affected by the seacave collapse. In addition to undermining, the collapse of the seacave would result in accelerated erosion and future failures at the project site and on the City's property.

Abandonment or relocation of the threatened structures inland is another alternative typically considered. Relocation is a reasonable and feasible alternative to consider in some cases, particularly where the relocation envisioned is relatively minor in relation to the structure and the site. In this case, the site is fully developed with structures (including being surrounded by complementary amenities including pathways, a swimming pool and deck, a garage, and mature landscaping) and Units 7 and 8 are connected to the main complex building. Thus, there is no reasonable location on site to relocate the endangered apartment units. According to the Applicant's coastal engineer, any removal or abandonment of the most threatened units would cause damage and impacts to the adjacent properties or to the structures on site, would cause damage to the balance of the apartment building, would result in a great unnecessary loss to the property owners and their occupants, and would not address impacts of a collapse on the adjacent City property or the accelerated erosion that would occur at the site. Outright removal, such as occurred after the Loma Prieta earthquake, would serve to abate the danger, but would not protect the endangered units. It could arguably protect the apartments as a whole, but such option is infeasible due to the assumed sizeable economic costs. In sum, relocation in this case would be a significant physical undertaking, with technical hazard difficulties. Therefore, in this case, based on the site constraints and the existing development present on site and loss/cost associated with outright removal, a relocation option does not appear to be a feasible alternative for protecting this existing

[7] 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.

threatened structure.

Another alternative often considered is planned or managed retreat. This option has been long debated and discussed more generally as well as in terms of specific individual sites like this. This concept posits that instead of allowing continued armoring, the shoreline should be allowed to retreat naturally. In this way, as the shoreline naturally erodes and sea level rises, new beaches can form. Beach formation in this respect is partly assisted by the sand-generating material in the bluffs as they erode, but more importantly there is space for the natural equilibrium between the shoreline and the ocean to establish itself and for beaches to form naturally. Over the longer run, a more comprehensive strategy to address shoreline erosion and the impacts of armoring may be developed (e.g. planned or managed retreat, relocation of structures inland, abandonment of structures, etc.). However, such options appear not to be feasible at this location at this time.[8]

Another project alternative is a rip-rap revetment. From an engineering perspective, a riprap or quarrystone revetment is an acceptable engineering alternative to covering the seacave plug with reinforced concrete and facing. Under this alternative the seacave must still be plugged with concrete to restore support to the cave roof. Placing rip rap within the seacave would not prevent collapse of the seacave roof and the subsequent translation of the failure plane up the bluff face. According to the Applicant's coastal engineer, this revetment would need to be approximately 20 feet high and thus extend about 30 feet onto the beach beyond the seacave opening. Thus, this alternative would encroach physically onto the sandy beach area, effectively eliminating the beach and eliminating the potential for the public to access the beach downcoast of the site, and would be visually obtrusive. This option is infeasible.

A final project alternative is a full-bluff vertical seawall. A top to bottom, reinforced concrete (shotcrete) retaining wall with post tensioned tiebacks and a cutoff wall along the base of the bluff would effectively protect the apartment complex and its most threatened units. The face of the approximate 75 foot high seawall would be colored and textured to mimic the adjacent soil and bedrock and the existing configuration of the bluff face would be preserved. However, this alternative would fully encase and armor the bluff face and would be more visually obtrusive than any other alternative, including the proposed blufftop stabilization system and seacave infill/plug project.

Given all the above, the proposed project is the least environmentally damaging alternative "required" to protect the existing endangered apartment complex and it thus meets the third test of Section 30235 of the Coastal Act.

D. Sand Supply Impacts

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

[8] Of course, if, in the future, the State or even local governments embrace planned retreat as a strategy, the removal of a hard armoring structure at the project location would be a small part of that program inasmuch as many miles of hard armoring would need to be removed and other shore-fronting development retired to allow for the strategy to work comprehensively.

shoreline sand supply.

Shoreline Processes

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullying, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an ongoing mix and exchange of material between beaches and dunes. Many coastal bluffs are marine terraces – ancient beaches that formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach-quality sand or cobble, and is a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse of caves, saturation of the bluff soil from groundwater causing the bluff to slough off, and natural bluff deterioration. When the back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material are the most important components of most beaches, only the sand portion of the bluff or dune material is quantified as sandy beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures because bluff retreat is one of several ways that beach quality sand is added to the shoreline, and is also one of the critical factors associated with beach creation/retention. Bluff retreat and erosion are natural processes that result from the many different factors described above. Shoreline armoring directly impedes these natural processes.

The project site is located within the Santa Cruz Littoral Cell. The Santa Cruz Littoral Cell is a high volume cell with annual longshore transport estimated between 300,000 and 500,000 cubic yards of beach quality materials annually.[9] The dominant direction of longshore transport in this sand supply system is north north-west to south south-east (roughly from upcoast to downcoast in relation to the site).[10] Materials in this system have been estimated to come mainly from coastal streams (roughly 75%), with 20% coming from bluffs, and 5% coming from coastal ravines and sand dunes.[11]

Some of the effects of engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, however, including: (1) the loss of the beach area on which the structure is located;

[9] United States Army Corps of Engineers (USACOE), San Francisco District, 1994.

[10] USACOE, San Francisco District, 1994.

[11] Griggs and Best, 1991.

(2) the long-term loss of beach that will result when the back-beach location is fixed on an eroding shoreline; and (3) the amount of material that would have been supplied to the beach if the back-beach or bluff were to erode naturally.[12]

Encroachment on the Beach

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand and/or areas from which sand generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it spreads seaward over time. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

In this case, the proposed seacave infill/plug and cutoff wall will cover approximately 378 square feet of sandy beach area. The loss of a square foot of beach area can be roughly converted to the volume of sand that would be required to nourish an equivalent area of beach. There is a rough rule of thumb that it takes between 0.5 to 1.5 cubic yards of sand to establish 1 square foot of dry beach through nourishment.[13] The Commission has not been able to establish an actual conversion factor for this specific site, and would normally use a conversion factor of 1.[14] However, the Applicant's coastal geologist consultant has provided a 0.5 conversion factor based on several evidentiary factors and by assuming that the active range of sand transport is at the lower limit of the expected range (i.e., the low end of the spectrum of values typically assumed by coastal engineers).

The Applicant's 0.5 conversion factor for this specific site is based on R.J. Hallermeier's 1978 conference proceedings paper entitled, "Uses for a calculated limit depth to beach erosion".[15] According to the Applicant's coastal geologic consultant (and as understood by the Commission historically) the conversion factor is "based on the vertical distance from the top of the beach berm to the seaward limit of reversible sediment movement". This distance has generally been called "closure depth". Hallermeier (1978) provides a formula for the estimation of closure depth based on wave height, as well as several other, less important, factors. This equation, with minor modification, continues to be used and referenced in more recent research. The equation given by Hallermeier factors in closure depth, significant wave height, gravity, and wave period where the calculated closure depth is based on a 6.5-

[12] The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the proposed project would impact sand supply processes.

[13] This conversion value is based on the regional beach and nearshore profiles, and overall characteristics. When there is not regional data to better quantify this value, it is often assumed to be between 0.5 and 1.5, the basis being that to build a beach seaward one foot, there must be enough sand to provide a one-foot wedge of sand through the entire region of onshore-offshore transport.

[14] As has been the case for most armoring projects in this area (e.g., CDPs 3-09-042 (O'Neill). 3-07-019 (Pleasure Point), etc.).

[15] Hallermeier, R.J. (1978). "Uses for a calculated limit depth to beach erosion." *Proceedings, 16th Coastal Engineering Conference*, American Society of Civil Engineers, pp. 1493-1512.

foot significant wave height at a 14 second wave period. These calculations are based on a recent U.S. Geological Survey study of the coastline immediately adjacent to the project site by Storlazzi, et al., (2007) that provides detailed oceanographic information. Their measurements for the month of December (highest month measured) show an average significant wave height of 5 feet with a period of 12 seconds. Use of these calculations yields a calculated conversion factor of 0.4. Based on the above information, the Applicant's coastal geology consultants have provided a slightly higher (i.e., slightly more conservative) conversion factor of 0.5. The Commission's senior engineer has evaluated the Applicant's explanation and evidence for the 0.5 conversion factor, and concurs that it is appropriate for this location.

Thus, using the conversion factor, the sand volume equivalent for the direct loss of beach due to encroachment by the proposed project would be **189 cubic yards** of beach-quality sand.[16]

Fixing the back beach

Experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and upland areas. On an eroding shoreline, a beach will exist between the shoreline/waterline and the bluff as long as sand is available to form a beach. As bluff erosion proceeds, the profile of the beach also retreats and the beach area migrates inland with the bluff. This process stops, however, when the backshore is fronted by a hard protective structure such as a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, shoreline in front of the armor eventually stops at the armoring. This effect is also known as passive erosion. The beach area will narrow, being squeezed between the moving shoreline and the fixed backshore. Eventually, there will be no available dry beach area and the shoreline will be fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising slightly for many years. Also, there is a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature (some shoreline experts have indicated that sea level could rise 4.5 to 6 feet by the year 2100).[17] Mean sea level affects shoreline erosion several ways, and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. This, too, leads to loss of the beach as a direct result of the armor as the beach is squeezed between the landward migrating ocean and the fixed backshore.

Such passive erosion impacts can be calculated over the time the proposed armoring is expected to last. In this case, the Applicant indicates that the proposed seacave infill/plug will have a 50-year lifetime

[16] Per the Commission's methodology, this is calculated as a one-time encroachment impact as opposed to a yearly impact.

[17] The California Climate Action Team has evaluated possible sea level rise for the California coast and, based on several of the Intergovernmental Panel on Climate Change (IPCC) scenarios, projected sea level rise up to 1.4 meters (4.5 feet) by 2100. These projections are in line with 2007 projections by Stefan Rahmstorf ("A Semi-Empirical Approach to Projecting Future Sea-Level Rise", *Science*; Vol 315, 368 – 370. Research by Pfeffer et al. ("Kinematic Constraints on Glacier Contributions to 21st-Century Sea-Level Rise", *Science*, Vol, 321, 1340 – 1343) projects up to 2 meters of sea level rise by 2100.

over which time such impacts will be in effect. However, it has been the Commission's experience that the actual expected lifespan of shoreline armoring projects is often substantially less than 50 years due to the need for major maintenance or modifications, or entire redevelopment of an armoring structure within a much shorter timeframe. In this case, the proposed seacave infill/plug and seawall can be expected to be subject to heavy wave action on a fairly regular basis. This wave action can only be expected to be exacerbated by sea level rise over time, with resultant impacts to the strength and integrity of the seacave infill/plug. In other words, despite the Applicant's 50-year projection, it has been the Commission's experience that 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 and attendant consequences will tend to further delimit such time period in the future, potentially dramatically, depending on how far sea level actually rises.

The other factor that is appropriate to consider when identifying a particular horizon for a seawall in an approval is the changing and somewhat uncertain nature of the context affecting coastal development decisions regarding armoring (including not only climate change and sea level rise, but also due to legislative change, judicial determinations, etc.). 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 hard service. 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 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 affect on the California coastline.

For these reasons, the Commission uses a design life of 20 years for the proposed seacave infill/plug and seawall in these findings, and implements the 20-year period through conditions (see Special Condition 4).

The Commission has established a methodology for calculating passive erosion, or the long-term loss of beach due to fixing the back beach. This impact is equivalent to the footprint of the bluff area that would have become beach due to erosion and is equal to the long-term average annual erosion rate multiplied by the width of property that has been fixed by a resistant shoreline protective device.[18] In this case, the proposed seacave infill/plug and seawall will extend down the cliff drip line over Purisima bedrock at the base of the bluff and upon which the complex sits. The proposed armoring will also cover some

[18] The area of beach lost due to long-term erosion (Aw) is equal to the long-term average annual erosion rate (R) times the number of years that the back-beach or bluff will be fixed (L) times the width of the property that will be protected (W). This can be expressed by the following equation: Aw = R x L x W. The annual loss of beach area can be expressed as Aw' = R x W.

areas of sandy beach and for purposes of determining the impacts from fixing the back beach, it is assumed that new beach area would result from landward retreat of the bluff. The shoreline is irregular, but the area affected by passive erosion can be approximated as a 50-foot-long curvilinear bluff. The Applicant's coastal geologic consultant estimated the average annual long term bluff recession for this site at 0.9 feet per year, which is within the regional range of 8 to 12 inches per year. Therefore the average impacts from fixing the back beach will be the annual loss of 45 square feet of beach. Over the 20-year permit horizon, this would result in a loss of 900 square feet of beach that would have been created if the back beach had not been fixed by the proposed seawall. Using the beach-area to beach-sand conversion discussed above (0.5 cubic yards per square foot of beach applicable to this location), this would be equivalent to an annual loss of 22.5 cubic yards of beach quality sand, and a loss over twenty years of **450 cubic yards** of beach quality sand that can be attributed to fixing of the back beach.

Retention of Potential Beach Material

If natural erosion were allowed to continue at the project site, some amount of beach material would be added to the beach at this location, as well as to the larger littoral cell sand supply system fronting the bluffs. The volume of total material that would have gone into the sand supply system over the lifetime of the shoreline structure would be the volume of material between (a) the likely future bluff-face location with shoreline protection; and (b) the likely future bluff-face location without shoreline protection. Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand that would have been supplied to the littoral system for beach deposition if the proposed device were not installed. The Commission has established a methodology for identifying this impact.[19] The Applicant indicates (and the Commission's senior engineer concurs) that this impact is roughly 15 cubic yards of sand per year for the proposed project. Over the course of the identified 20-year horizon, this equates to a retention impact of **300 cubic yards** of beach quality sand.

Beach and Sand Supply Impacts Conclusion

The proposed project would result in quantifiable shoreline sand supply impacts. There would be beach sand loss due to: 1) placement of structural concrete and facing onto approximately 378 square feet of sandy beach that otherwise would be available for public use (equating to 189 cubic yards when converted for volume); 2) fixing of the back beach location, resulting in the loss of 900 square feet of

[19] The equation is Vb = (S x W x L) x [(R x hs) + (1/2hu x (R + (Rcu - Rcs)))]/27. Where: Vb is the volume of beach material that would have been supplied to the beach if natural erosion continued (this is equivalent to the long-term reduction in the supply of bluff material to the beach resulting from the structure); S is the fraction of beach quality material in the bluff material; W is the width of property to be armored; L is the design life of structure, if assumed a value of 1, an annual amount is calculated; R is the long term average annual erosion rate; hs is the height of the shoreline structure; hu is the height of the unprotected upper bluff; Rcu is the predicted rate of retreat of the crest of the bluff during the period that the shoreline structure would be in place, assuming no seawall were installed (this value can be assumed to be the same as R unless the Applicant provides site-specific geotechnical information supporting a different value); Rcs is the predicted rate of retreat of the crest of the bluff, during the period that the seacave infill/plug and cutoff wall would be in place, assuming the seacave infill/plug and cutoff wall has been installed (this value will be assumed to be zero unless the Applicant provides site-specific geotechnical information supporting a different value); and divide by 27 (since the dimensions and retreat rates are given in feet and volume of sand is usually given in cubic yards, the total volume of sand must be divided by 27 to provide this volume in cubic yards, rather than cubic feet).

sandy beach that would have been created over the 20-year horizon (45 square feet of loss annually, equating to 22.5 cubic yards annually and 450 cubic yards over 20 years when converted for volume); and; 3) retention of 300 cubic yards of sandy material over the 20-year horizon (15 cubic yards of sand per year). Over twenty years, these impacts would equate to a total of **939 cubic yards** of sand.[20]

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. There are no readily available properties of this sort in the vicinity.

Other types of mitigation typically required by the Commission for such direct sand supply impacts have been in-lieu fees 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. Obviously, such an introduction of sand, if properly planned, can feed into the Santa Cruz Littoral Cell sand system to mitigate the impact of the project. If these impacts were to be mitigated through a beach nourishment effort, the impacts would be comparable to the deposition of 189 cubic yards of beach quality sand at the start of the project (or roughly 19 large truck loads), and about 37.5 cubic yards (or roughly 3.75 large truck loads) of beach-quality sand yearly. However, absent a larger comprehensive program that provides a means to coordinate and maximize the benefits of several 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 questionable.

With respect to using beach access improvements to offset impacts, such mitigation is typically applied by the Commission to public agencies that are in the beach management business when they have applied for armoring projects.[21] It is more difficult to put the burden for a public project on a private applicant and thus such mitigation is atypical.[22] In this case, one option for beach access improvements at this site is to construct a stairwell from the downcoast side of Esplanade Park to the beach near the proposed seawall. As it is, the Esplanade ends at this location, and does not provide access down to the beach area here. The public can gain access to this downcoast area without a new stairway by walking along the beach fronting Esplanade Park, but there is limited space to account for such access, and care must be given to walk over and through the existing rock groin which extends off the southeast side of the Esplanade Park. The surf in this area is generally calm in the summer, save the occasional south swell, but much more dangerous during the fall, winter and spring when waves can overtop the groin and impact the bluff where the proposed seacave infill/plug project is located. A stairwell on the

[20] That is, 189 cubic yards from encroachment, 450 cubic yards from passive erosion, and 300 cubic yards from retention of materials.

[21] For example, as recently required with respect to recreational access improvements along the Pleasure Point shoreline area of Santa Cruz County as part of the Commission's approval of a seawall fronting East Cliff Drive (CDPs A-3-SCO-07-015 and 3-07-019, approved December 13, 2007).

[22] Although the Commission has applied such a requirement for this type of impact before (see, for example, CDP 3-02-107, Podesto).

southeast side of the groin would be a significant addition of public access which would eliminate the need to traverse over and through the rock groin, and provide a passable accessway when tides were higher. Such access is imperfect though. It would be fairly low tide when the beach area downcoast is even present, and this is the same time when easiest access around the esplanade is available. It seems more likely that the stairway would turn into a surfing ingress and egress stairway to the ocean more than anything, while providing an alternative connection to the beach area for pedestrians during lower tides. The beach area generally at this location, and extending downcoast to New Brighton State Beach, is almost always inundated by the ocean. Still, the stairway would enhance access to this area when it is available, and it is a popular area to visit, particularly for fossil viewing, and a stairway would facilitate such access.

The other issue with a staircase in this area is that it would require the City of Capitola's consent to add it to Esplanade Park, and the City has indicated that they are not interested in such a stairway here.[23] The City cites a number of reasons. First, since this beach is lightly used compared to the upcoast and expansive Capitola Beach, and covered at anything but lower tides, the necessity isn't as great to facilitate access. Secondly, encouraging access in front of the proposed infill/plug and seawall and downcoast could lead to more public use of a narrow beach area (which will be shrinking as time goes on) that, save for summer, typically sees large waves and sometimes dangerous ocean conditions. Lastly, since this staircase would be in a heavily impacted area, the costs of upkeep, repair and maintenance could fall on the City over time. Although such stairway would be an appropriate mitigation and a significant access enhancement in the area, absent City consent it is not feasible.

As an alternative mitigation mechanism, the Commission oftentimes uses a mitigation payment when in-kind mitigation of impacts is not available.[24] In situations where ongoing sand replenishment or other appropriate mitigation programs are not yet in place, the mitigation payment is deposited into an account until such time as an appropriate program is developed, and the funds 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 fees. Based on an estimated range of costs for beach quality sand in this vicinity ranging from $25 to $50 per cubic yard delivered (or possibly more), a mitigation payment in this case would range from about $23,500 to $47,000 or more.[25]

Because in-kind mitigation is not available for this project, and in order to mitigate for the approvable project's identified sand supply impact (and others related to it that are linked to beach recreational access loss and public view impacts),[26] this approval is conditioned for a mitigation payment (see

[23] Personal communication from Derek Johnson, City of Capitola Planning Director to Daniel Robinson, Coastal Commission Coastal Planner on June 13, 2011 and from Steve Jesberg, City of Capitola Public Works Director on June 13-15, 2011

[24] 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).

[25] Based on 939 cubic yards of such sand purchased today for $25 per cubic yard ($23,475) or $50 per cubic yard ($46,950).

[26] See also public viewshed findings, and public access and recreation findings that follow.

Special Condition 7). The payment is based on the volume of sand equivalent to the quantified impacts and the cost to replace this volume of sand.[27] The cost to supply beach quality sand is estimated at $42 per cubic yard in the Capitola area.[28] Thus, at $42 per cubic yard delivered, the 939 cubic yards of sand translates into a payment of $39,438 to be paid into a fund for beach access improvements.[29] Under Special Condition 7, the funds must be deposited into an interest-bearing account to be established and managed by the City of Capitola, or another appropriate entity. The sole purpose for which the funds in the account may be used is for public beach recreational access improvements at beaches within Capitola's city limits. The City currently operates a beach sand augmentation program for Capitola Beach, and has accepted and used such mitigation funds from prior Commission CDP actions to help fund this program. Consistent with current Commission practice regarding shoreline protective devices, the project and mitigation is based on a twenty year period, and thus either a permit amendment or a new permit and the need for a new fee (or other mitigation) would be evaluated at that time.

The project's shoreline sand supply impacts translate directly into degradation of public access to and along the beach.[30] As such, shoreline sand supply mitigations targeted toward these access impacts is appropriate in this case. Thus, as conditioned, the project satisfies the Coastal Act Section 30235 requirements regarding mitigation for sand supply impacts, and thus also meets all Section 30235 tests for allowing such armoring.

E. Long-Term Stability, Maintenance, and Risk

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. For the proposed project, the main Section 30253 concern is assuring long-term stability. This is particularly critical given the dynamic shoreline environment within which the proposed project would be placed. Also critical to the task of ensuring long-term stability, as required by Section 30253, is a formal long-term monitoring and maintenance program. If the seacave infill/plug and seawall were damaged in the future (e.g. as a result of flooding, landsliding, wave action, storms, etc.) it would lead to a degraded public access condition. In addition, such damages could adversely affect nearby beaches by resulting in debris on the beaches and/or creating a hazard to the public using the beaches or the offshore surfing area. Therefore, in order to find the proposed project consistent with Coastal Act Section 30253, the

[27] As previously noted, the Applicants have not identified any impact to beach sand resources or any proposed mitigation. The sand supply method has been used in many cases by the Commission, although other methods have also been used, such as recent cases where beach surveys have been used to establish recreational values of beaches. In this case, beach use data and survey information are not readily available for this beach area, and it would be both costly and difficult to develop such information now. As a result, and as has been done in the past by the Commission, the sand replacement cost method is applied to this case.

[28] This figure is based on a 2011 estimate from Graniterock, which is a commercial sand supplier in the vicinity of the project, as well as from other experiences the Commission has had calculating sand supply costs statewide. Based on the specific characteristics of this project, as well as comparisons to other similar type projects, a cost of $42 per cubic yard of beach sand delivered to the project site is reasonable.

[29] Note that it is possible that updated costs may be obtained to refine this figure. Specifically, if the Applicants submit three valid bids for the cost of delivered beach quality sand that average to an amount different than $42 per cubic yard, and the bids have been reviewed and approved by the Executive Director, this fee may be adjusted to the average for these three bids.

[30] See also Public Access finding below for further discussion.

proposed project must be maintained in its approved state. 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 subject armoring, particularly after major storm events. Such monitoring will ensure that the Applicant and the Commission are aware of any damage to or weathering of the armoring and can determine whether repairs or other actions are necessary to maintain the seawall structure in its approved state before such repairs or actions are undertaken. To assist in such an effort, monitoring plans should provide vertical and horizontal reference distances from armoring structures to surveyed benchmarks for use in future monitoring efforts.

To ensure that the proposed project is properly maintained to ensure its long-term structural stability, Special Condition 9 requires monitoring and reporting programs. Such programs shall 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 10 allows the Applicant to maintain the project in its approved state, subject to the terms and conditions identified by the special conditions. Such future monitoring and maintenance activities must be understood in relation to clear as-built plans. Therefore, Special Condition 8 of this approval requires the submittal of as-built plans to define the footprint and profile of the permitted development.

In terms of recognizing and assuming the hazard risks for shoreline development, the Commission's experience in evaluating proposed developments in areas subject to hazards has been that development has continued to occur despite periodic episodes of heavy storm damage and other such occurrences. Development in such dynamic environments is susceptible to damage due to such long-term and episodic processes. Past 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 hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (see Special Condition 11). This acknowledgement, as well as the other conditions of the permit, must be recorded through a deed restriction recorded against the subject property to ensure that future property owners are aware of the terms and conditions of this permit that restrict the use and enjoyment of it (see Special Condition 14). ** 14

F. Geologic Conditions and Hazards Conclusion

In this case and for this site and this fact set, the proposed project, as conditioned, can be found consistent with Coastal Act Sections 30235 and 30253. That said, even with the 20-year horizon applied to this project, it is clear that the proposed project firmly commits this site to being armored for the foreseeable future. As indicated, such an outcome is consistent with the manner in which the Commission has historically treated armoring projects in the Santa Cruz/Capitola area, including most recently with the Pleasure Point and O' Neill seawall projects, which are located just upcoast of the site. As also indicated, such an outcome does not mean that parallel and more global efforts to better address urban shorelines in light of erosion and sea level rise are not relevant or should not be pursued. On the

contrary, it is clear that the State must come to grips with issues related to shoreline armoring as it relates to urban and largely armored areas and rising sea levels. The individual and cumulative effect of such armoring is that, over time, beaches in these areas will be lost. Mitigations can be imposed on armoring projects to reduce such impacts, but mitigation for the long-term impacts to the public, both as a result of individual armoring projects and the overall cumulative effect of armoring projects together with all the existing armoring along the coastline, has proven more difficult. Some of these long-term impacts were "inherited" by the people of the State because many such urban coastlines, such as urban Santa Cruz County, were already largely armored to a certain degree when the coastal permitting requirements of Proposition 20 and the Coastal Act were instituted in the early 1970s. With sea level continuing to rise and the shoreline continuing to erode, it is expected that the beaches fronting these areas, like all California beaches on which armoring is located and on which the back-beach has thus been effectively "fixed" in location, will eventually disappear over time. However, absent a more comprehensive strategy, including relevant updates to the City of Capitola's LCP, resolving the larger planning and cumulative impact questions related to shoreline erosion and armoring is not readily addressed through an individual project. Projects such as the one proposed are probably best shaped to provide the best possible Coastal Act outcome for a site, including providing for long-term impact mitigation, as is the case here.

B. Public Access and Recreation

1. Applicable Policies

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 (Grand Avenue). Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

> ***30210.*** *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> ***30211.*** *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*
>
> ***30213.*** *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. …*
>
> ***30221.*** *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately*

provided for in the area.

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

Coastal Act Section 30240(b) also protects parks and recreation areas, such as the adjacent beach area. Section 30240(b) states:

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

These overlapping policies clearly protect the beach (and access to and along it) and offshore waters for public access and recreation purposes, particularly free and low cost access.

2. Analysis

As discussed in the finding above, shoreline structures can have a variety of negative impacts on coastal resources including adverse affects on beaches and sand supply, which ultimately result in the loss of the beach with associated impacts to public recreational access. The proposed project's impact to sand supply, and ultimately to public access, would result from the placement of the seacave infill/plug and seawall onto approximately 378 square-feet of beach area that otherwise would be available for public use, by bluff retention of 15 cubic yards of sand per year for the lifetime of the proposed project, and by fixing of the back beach location, resulting in the annual loss of 45 square feet of sandy beach. All such impacts would be located just downcoast from a regionally significant public beach destination, Capitola Beach, thus only increasing the magnitude of the degradation to access that would result.

According to the Applicant's coastal geologic consultant, the proposed seawall would occupy about 378 square feet of beach space. The effect of covering a portion of this beach area with the proposed seawall would be to remove a portion of the beach from use. Because the beach here is accessible only at lower tides, and is not heavily used relative to Capitola Beach, this impact would be relatively small. That said, this loss of beach area is still an impact caused by the proposed project.

Furthermore, as noted above in the discussion of sand supply impacts, in addition to the direct loss of useable recreational beach area, the introduction of the proposed seacave infill/plug and seawall would have a number of effects on the dynamic shoreline system and the public's beach use interests. First, the proposed project's impacts would lead to a progressive loss of sand as the seawall structure prevents bluff retreat because the retained bluff material would not be available to nourish the sand supply system. Second, and particularly in combination with the loss of sand generating materials, the project would fix the back beach location. The effect on public use would be a narrowing of useable beach space; eventually this beach area between the proposed seacave infill/plug and seawall and the water would be expected to disappear. Third, changes in the shoreline profile, particularly changes in the slope of the profile that result from a reduced beach width, alter the useable beach area restricted for public access. A beach that rests either temporarily or permanently at a steeper angle than under normal

conditions will have less horizontal distance available for the public to use. This reduces the actual area in which the public can pass along the beach. Fourth, the project would cumulatively affect public access by causing accelerated or increased erosion on the adjacent downcoast beaches. Ultimately, the proposed project would result in the loss of beach altogether at this location.

As stated above, the beach below the Crest Apartments property is accessible only at lower tides, and is not heavily used, compared to the heavily used Capitola Beach directly upcoast from the project site. However, during construction, which is expected to last about a month, beach access would effectively be precluded at this site and would adversely affect beachgoers from Capitola Beach downcoast toward New Brighton State Beach. In addition, the proposed project will require regular monitoring and maintenance to ensure that the seacave infill/plug is shaved back at a rate similar to the surrounding unarmored bluff (see Special Condition 9 and 10). Maintenance of the proposed project will also have these same types of public beach access impacts. To minimize these impacts to beach access, the project is conditioned to minimize construction and maintenance encroachment on the beach and all beach access points and to prohibit construction and maintenance activities from taking place during the summer or on weekends, when recreational use is likely highest. In addition, to provide maximum information to the beach-going public during all construction, the Applicants must maintain copies of the CDP and approved plans available for public review at the construction site, as well as provide a construction coordinator whose contact information is posted at the site to respond to any problems and/or inquiries that might arise (see Special Conditions 2 and 3).

Although the required construction conditions can minimize the impacts of this project on beach goers, the conditions cannot completely compensate for the unavoidable degradation of the usual beach recreational experience available at this location, including the overall diminution of aesthetics and ambiance, due to the proposed project. To offset these impacts to the recreational beach, mitigation is necessary. Therefore, the approved project includes a mitigation payment of $39,438 that will be applied to improve beach recreational access in the Capitola area (see Special Condition 7). Also, Special Condition 12 requires that the Applicants acknowledge that issuance of the CDP does not constitute a waiver of the public access easement which exists on the subject property, and would still exist seaward of the wall location.[31] As conditioned, the project is consistent with the Coastal Act access and recreation policies sited above.

In conclusion, and because the approval includes a twenty-year horizon which allows 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 (see Special Condition 4), these mitigations can appropriately offset the public recreational access impacts associated with the proposed project. As conditioned, the project is consistent with the Coastal Act access and recreation policies sited above.

C. Visual Resources

[31] Due to erosion since the time the OTD was mapped, and the fact that it extends seaward from the bluff edge, the project will not be placed on any of the easement area. It is also possible, if not likely, that the easement is immaterial as the area is all wet real estate that is assumed below MHT.

1. Applicable Policies

Coastal Act Section 30251 states:

> ***Section 30251.*** *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Coastal Act Section 30240(b), previously cited, also protects the aesthetics of beach recreation areas such as those located directly adjacent to and at the project site. Section 30240(b) states:

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

2. Analysis

Much of the localized area upcoast has already been altered by shoreline armoring, including the substantial concrete structure and seawall along the south side of the bluff below the Crest Apartments. However, the bluffs downcoast of Esplanade Park are unarmored, and are part of a stretch of almost a mile of bluff without armoring between this location and New Brighton State Beach (other than an individual site of armoring about half way along this stretch). In terms of public viewshed impacts, the proposed seawall would cover and alter a natural, undulating coastal landform located adjacent to a beach, the nearby surfbreak at the Capitola Jetty, and the significantly used public viewpoint at Esplanade Park. As a result, the proposed seawall would negatively impact the public viewshed as seen from these vantage points by replacing the natural landform with a concrete landform. In addition, during construction, public views would be both blocked and degraded, including by virtue of the bluff mesh proposed above the seacave for safety purposes.

The proposed seacave infill/plug and seawall would be designed to mimic the natural and undulating bluff forms in the area. However, it is difficult to hide a concrete wall, no matter how effective the camouflaging. If successful in this respect, the impact would be more in terms of eliminating natural landform topography and depth and replacing that natural progression with more of a linear bluff appearance. While effectively eliminating the “hole” of the seacave, a more linear bluff face can capture the essence of this stretch of coastline; thus, visually, a successfully camouflaged project would reduce visual impacts. If not successful, the proposed seacave infill/plug and seawall would significantly adversely affect the overall public viewshed and aesthetic by introducing an obviously artificial structure along the lower bluff directly adjacent to the back beach area. The Commission has had experience with both successful camouflaging and unsuccessful camouflaging in this respect, and much

of the outcome is predicated on the skill of the contractors performing the work as much as anything else.

To ensure that all is done to ensure the wall structure blends into the coastline as much as possible, this approval is conditioned to ensure that the seacave infill/plug and seawall is made to mimic natural undulating bluff landforms in the vicinity in terms of integral mottled color, texture, and undulation to the maximum extent feasible (see Special Condition 1). Even so, although such measures can limit visual impacts, they cannot be completely avoided with a project like this. Fortunately, both by project design and by opportunity related to this site, there are sufficient offsetting mitigations available to ensure that unavoidable visual degradation is appropriately offset.

For example, the Applicant has proposed to use the existing concrete pier and foundation fragments now resting on the beach below the subject property in the seacave infill/plug. The beach viewshed will be improved by taking this debris off the beach (see photos in Exhibit C). To ensure that only clean material is used, Special Condition 1 requires that all exposed rebar be cut and removed from the concrete debris and properly disposed of prior to placement in to the seacave fill area to prevent exposed metal in the fill. This reuse will minimize the amount of concrete needed for the project, as well as visually creating a cleaner and more natural beachscape in this area.

Similarly, the upper bluff includes remnant foundation elements and debris, including from former structures associated with the apartments that were previously removed. If these elements below the top of the Applicant's property were to be removed, it would improve the public viewshed. Such removal is an appropriate offsetting mitigation in this case, and is required to address impacts of the project (see Special Condition 1).

Also, since the bluff will continue to erode while the seacave infill plug and seawall will not, and since this will result in decidedly unnatural looking connections at the edges that will degrade views, this approval is conditioned to ensure that the concrete is recontoured as necessary to maintain a natural appearance and connection to adjacent landforms over time (see Special Condition 10).

In addition, the Commission typically requires native landscaping designed to cascade over the top of armoring projects to partially screen the top of such projects from public view and to provide a more natural edge to the top of the wall and bluff as seen from above and below. In this case, such landscaping requirement is particularly important because the bluff area above the seawall is infested with non-native invasive species (e.g., iceplant, pampas grass), that detract from the natural bluff aesthetic, and because the project includes significant work on this upper bluff area for safety during construction. Thus, this approval is conditioned for the removal of all non-native and/or invasive species between the apartment complex and the top edge of Esplanade Park and the seawall, and replanting with native bluff species endemic to the Capitola area (see Special Condition 1). Such landscaping will help offset visual impacts and help improve and soften views of the project site as seen from the beach below, from Esplanade Park, and from the water. The Applicant is required to ensure that all new plants are maintained in good growing conditions and that regular monitoring and provisions for remedial action (such as replanting as necessary) be provided for to ensure landscaping success.

Finally, the project is related to another armoring project previously approved by the City of Capitola. Namely, the City has approved a project to drill and install concrete piers and a grade beam inland of the bluff top edge in the bluff seaward of the seacave area. Over time, the piers (and possibly even the grade beam) will become exposed as the bluff erodes, leading to significant viewshed impacts. The City conditioned its project to prepare and implement a monitoring and maintenance plan for regular inspections of the bluff face below the soil pin wall for evidence of exposure of the soil pin piers; and placement as necessary of reinforced shotcrete (colored, textured and contoured to mimic the appearance of the adjacent natural bluff) between and structurally attached to the soil pin piers on each side of the exposed soil bays. However, as part of the project before the Commission, the temporary installation of rock dowels with steel pressure plates and wire mesh, essential for worker safety, will in much the same way lead to significant viewshed impacts. While the pressure plates and wire mesh will be removed upon completion of the project, the dowels are to remain, and thus will become exposed as the bluff erodes around them. Therefore, this approval builds on the City's efforts to mitigate visual impacts along the entire bluff face by requiring a remediation plan be implemented to camouflage and remove (cut flush with the bluff) the exposed elements when any portion of the rock dowels become exposed (see Special Conditions 2, 9 and 10). This will effectively minimize visual effects from those dowels which over time will inevitably protrude from the face of the bluff.

As conditioned, the project will minimize visual impacts along this public beach area and will not significantly alter scenic public views. Thus, the project is consistent with Sections 30251 and 30240(b) of the Coastal Act.

D. Marine Resources

1. Applicable Policies

The Coastal Act protects the marine resources and habitat offshore of this site. Coastal Act Sections 30230 and 30231 provide:

> ***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.*

2. Analysis

All project runoff is directed to inland storm drains, and no runoff is allowed to extend seaward of the blufftop edge, whether by pipe or surface flow, by project design. Such a system helps avoid marine resource impacts. However, as proposed by the Applicant, the proposed project would require the movement of large equipment, workers, and supplies during periods of low tides to gain access to the site; include large equipment operations on the beach area fronting the site; include substantial concrete and other work on the beach; and potentially encroach on Sanctuary and State Lands waters (depending on tides).

To protect marine resources and offshore habitat, Special Conditions 2 and 3 require that these impacts be contained through construction parameters that limit the area of construction, clearly fence off the minimum construction area necessary, keep equipment out of Monterey Bay National Marine Sanctuary and State Lands Commission waters, require off-beach equipment and material storage during non-construction times, require construction documents to be kept at the site for inspection, require a construction coordinator to be available to respond to inquires, and clearly delineate and avoid to the maximum extent feasible beach use areas.

To further protect marine resources and offshore habitat, Special Condition 3 requires construction documents to be kept at the site for inspection, and also requires a construction coordinator to be available to respond to any inquiries that arise during construction. The project is also conditioned to require review and approval from the Monterey Bay National Marine Sanctuary and the State Lands Commission (Special Condition 5 and 6). As conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitat.

E. Land Resources

1. Applicable Policies

Coastal Act Section 30244 requires that reasonable mitigation measures be employed where development would adversely impact paleontological resources.

> ***Section 30244.*** *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

2. Analysis

As indicated above, the Purisima bedrock formation (made up of sandstone, siltstones, and mudstones) composes the lower portion of the bluff (approximately 55 feet) and which is overlain by approximately 20 feet of unconsolidated marine terrace deposits. According to the Applicant's paleontological consultant, the Purisima formation in the project area is highly and diversely fossiliferous, and has been an area subject to considerable study and research. A section of the Purisima formation is exposed along the Santa Cruz/Capitola coast that contains fossil vertebrates including dolphins, whales, seals, sea lions, fish and sharks as well as invertebrates and fauna. At the project site, the lowest approximately 4 feet of the base of the sea cliff contains several marine invertebrate taxa with scattered fossils within the

approximately next 15 feet up the bluff, and is of particular importance due to an exposure of a lower shelf bed. The Purisima formation beds at the project site contain scientifically significant fossils, rated at a high or very high paleontological sensitivity.

The proposed project will block off such resources, and will impact some such resources due to rock removal. In terms of the former, by covering the seacave, fossils in this area will be protected in situ, but no longer accessible for study or interpretation. In terms of the latter, the project will necessarily impact a portion of the natural landform and any fossils there. To offset such impacts (and as required under City CDP 3-CAP-10-050) the Applicant shall prepare a detailed documentation of the fossils that will be displaced by installation of the cutoff to support the front of the seacave infill/plug, and have present during excavation of the wall a qualified paleontologist to document and salvage fossils exposed during the construction. In addition, Special Condition 2 requires that if significant paleontological resources are encountered during project construction, all activities that could damage or destroy these resources will be suspended until a qualified paleontologist has examined the site and mitigation measures have been developed and submitted to the Executive Director for review and approval that address and proportionately offset the impacts of the project.

3. Conditions of Approval

A. Standard Conditions

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

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

3. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

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

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

B. Special Conditions

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the

Permittee shall submit two full size sets of Revised Final Plans to the Executive Director for review and approval. The Revised Final Plans shall be in substantial conformance with the plans submitted to the Coastal Commission (dated received on October 20, 2009 in the Commission's Central Coast District Office entitled, "Soil Pin Wall W/Tiebacks and Concrete Seacave Infill/Plug" prepared by Haro, Kasunich and Associates, Inc.) except that they shall be revised and supplemented to comply with the following requirements:

(a) Concrete Surfacing. All concrete surfaces shall be faced with a sculpted concrete facing that mimics natural undulating bluff landforms in the vicinity in terms of integral mottled color, texture, and undulation to the maximum extent feasible, and seamlessly blends with the unarmored bluff downcoast. Any protruding concrete elements (e.g., corners, edges, etc.) shall be contoured in a non-linear manner designed to evoke natural bluff undulations. The color, texture, and undulations of the seacave infill/plug and seawall surface shall be maintained throughout the life of the structure. PRIOR TO COMMENCEMENT OF CONCRETE SURFACING, the Permittee shall submit to the Executive Director for review and approval the qualifications of the contractor who will perform the concrete work, including photos of similar completed projects. Concrete work shall not commence until the Executive Director has approved of the finish concrete contractor.

(b) Concrete Infill from Beach Debris. All concrete and other debris shall be removed from the beach area. Concrete may be used in the seacave infill/plug provided that exposed rebar shall be cut and removed from the concrete debris and properly disposed of prior to placement in the seacave infill/plug.

(c) Concrete and other Remnant Debris in Bluff. All concrete and remnant debris in the bluff face below the top of the Permittee's property shall be removed.

(d) Landscaping. All non-native and/or invasive plants (e.g., iceplant, pampas grass, etc.) currently present seaward of the apartment complex and along the bluff and the proposed seacave infill/plug and seawall shall be removed and the area replanted with native bluff species endemic to the Capitola area. If physical removal of the existing non-native invasive plants on the bluff face will compromise the integrity of the coastal bluff (in the opinion of a licensed civil engineer or engineering geologist with experience in coastal structures and processes), the majority of the tops of such plants shall be removed (by cutting or other appropriate methods, thus leaving minimum plant material intact. To ensure that these topped invasive species do not regrow, a natural herbicide shall be applied (in a manner to protect water quality and marine resources) to ensure that the root structures of the plants are destroyed. No non-native and/or invasive species shall be allowed to persist in these areas; all new plants shall be native plant species that are tolerant of salt air and salt spray; and all new plants shall be maintained in good growing conditions. Regular monitoring and provisions for remedial action (such as replanting as necessary) shall be provided for to ensure landscaping success.

All requirements above and all requirements of the approved Revised Final Plans shall be enforceable components of this coastal development permit. The Permittee shall undertake development in accordance with the approved Revised Final Plans.

2. **Construction Plan.** PRIOR TO COMMENCEMENT OF CONSTRUCTION the Permittees shall submit two sets of a Construction Plan to the Executive Director for review and approval. The Construction Plan shall, at a minimum, include the following:

   (a) Construction Areas. The Construction Plan shall identify the specific location of all construction areas, all staging areas, all storage areas, all construction access corridors (to the construction site and staging areas), and all public pedestrian access corridors. All such areas within which construction activities and/or staging are to take place shall be minimized to the maximum extent feasible in order to minimize construction encroachment on the beach, Grand Avenue, all beach access points, and the Monterey Bay, and to have the least impact on public access overall.

   (b) Construction Methods and Timing. The Construction Plan shall specify the construction methods to be used, including all methods to be used to keep the construction areas separated from public recreational use areas (including using the space available on the blufftop portions of the Permittee's property for staging, storage, and construction activities to the maximum extent feasible, and including using unobtrusive fencing (or equivalent measures) to delineate construction areas). All erosion control/water quality best management practices to be implemented during construction and their location shall be noted.

   (c) Property Owner Consent. The Construction Plan shall be submitted with written evidence indicating that the owners of any properties on which construction activities are to take place, including properties to be crossed in accessing the site, consent to such use of their properties.

   (d) Construction Requirements. The Construction Plan applies to initial installation of the seacave infill/plug and seawall, and rock dowels, as well as maintenance of said project, to ensure that it is shaved back as necessary at the same rate as the surrounding unarmored bluff face. The Construction Plan shall include the following construction requirements specified by written notes on the Construction Plan. Minor adjustments to the following construction requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources.

   - All work shall take place during daylight hours and lighting of the beach area is prohibited.
   - Construction work or equipment operations shall not be conducted below the mean high tide line unless tidal waters have receded from the authorized work areas.
   - Grading of intertidal areas is prohibited.
   - Only rubber-tired construction vehicles are allowed on the beach, except track vehicles may

be used if the Executive Director agrees that they are required to safely carry out construction. When transiting on the beach, all such vehicles shall remain as high on the upper beach as possible and avoid contact with ocean waters and intertidal areas.

- All construction materials and equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. All construction materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. The only other exceptions shall be for erosion and sediment controls and/or construction area boundary fencing where such controls and/or fencing are placed as close to the toe of the seawall/revetment as possible, and are minimized in their extent.

- Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas.

- No work shall occur during weekends and/or the summer peak months (i.e., from the Saturday of Memorial Day weekend through Labor Day, inclusive) unless, due to extenuating circumstances (such as tidal issues or other environmental concerns), the Executive Director authorizes such work.

- Equipment washing shall not take place on the beach; refueling and/or servicing of equipment shall be allowed only at a designated location as noted on the Plan. Appropriate best management practices shall be used to ensure that no spills of petroleum products or other chemicals take place during these activities.

- The construction site shall maintain good construction site housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain, including covering exposed piles of soil and wastes; dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the beach; etc.).

- All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday. At a minimum, silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from entering into the Pacific Ocean.

- All beach areas and all beach access points impacted by construction activities shall be restored to their pre-construction condition or better within three days of completion of construction. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach.

- The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least three working days in advance of commencement of construction or maintenance activities, and immediately upon completion of construction or maintenance

activities.

(e) Paleontological Resources. Should paleontological resources be encountered during project construction, all activity that could damage or destroy these resources shall be temporarily suspended until a qualified paleontologist has examined the site and mitigation measures have been developed and submitted to the Executive Director for review and approval that address and proportionately offset the impacts of the project on paleontological resources.

All requirements above and all requirements of the approved Construction Plan shall be enforceable components of this coastal development permit. The Permittee shall undertake development in accordance with the approved Construction Plan.

3. Construction Site Documents & Construction Coordinator. DURING ALL CONSTRUCTION:

(a) Construction Site Documents. Copies of the signed coastal development permit and the approved Construction Plan shall be maintained in a conspicuous location at the construction job site at all times, and such copies shall be available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the coastal development permit and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.

(b) Construction Coordinator. A construction coordinator shall be designated to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and their contact information (i.e., address, phone numbers, etc.) including, at a minimum, a telephone number that will be made available 24 hours a day for the duration of construction, shall be conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

4. Twenty-Year Approval. This coastal development permit authorizes the seacave infill/plug and seawall for twenty years from the date of approval (i.e. until July 13, 2031). If the Permittee intends to keep the seacave infill/plug and seawall in place after July 13, 2031, the Permittee shall apply for a new coastal development permit authorization to allow the seacave infill/plug and seawall (including, as applicable, any potential modifications to it desired by the Permittee). Provided the application is received before the twenty-year permit expiration, the expiration date shall be automatically extended until the time the Commission acts on the application.

5. MBNMS Review. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit to the Executive Director for review a copy of the Monterey Bay National Marine Sanctuary (MBNMS) permit, letter of permission, authorization, or equivalent for the approved project, or

evidence that no MBNMS authorization is necessary for the approved project. Any changes to the approved project required by the Sanctuary shall be reported to the Executive Director. No changes to the approved project shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

6. **State Lands Commission Authorization.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit to the Executive Director for review a copy of the State Lands Commission permit, letter of permission, authorization, or equivalent for the approved project, or evidence that no State Lands Commission authorization is necessary for the approved project. Any changes to the approved project required by the State Lands Commission shall be reported to the Executive Director. No changes to the approved project shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

7. **Public Access/Sand Supply Mitigation.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director evidence that a public access/sand supply mitigation payment of $39,438 has been deposited into an interest-bearing account to be established and managed by the City of Capitola or another appropriate entity as approved by the Executive Director. The sole purpose of the funds/account shall be for public beach recreational access improvements (such as benches, picnic tables, trail improvements, interpretive signage, sand replenishment, etc.) in the City of Capitola. If, prior to issuance of the CDP, the Permittee submits three valid bids for the cost of delivered beach quality sand that average to an amount less or more than $42 per cubic yard and the bids have been reviewed and approved by the Executive director, this payment may be adjusted to the average for these three bids. All of the funds and any accrued interest shall be used for the above-stated purpose, in consultation with the Executive Director, within ten years of the funds being deposited into the account. PRIOR TO EXPENDITURE OF ANY FUNDS CONTAINED IN THIS ACCOUNT, the Executive Director must review and approve the proposed use of the funds as being consistent with the intent and purpose of this condition.

8. **As-Built Plans.** WITHIN TWO (2) MONTHS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit two copies of As-Built Plans showing all development completed pursuant to this coastal development permit; all property lines; and all residential development inland of the seacave infill/plug and cutoff wall. The As-Built Plans shall be substantially consistent with the approved final plans (see Special Condition 1), including providing for all of the same requirements specified there, and shall account for all of the parameters of Special Condition 9 (Monitoring) and Special Condition 10 (Future Maintenance). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from upcoast, seaward, and downcoast viewpoints; and from a sufficient number of beach and Esplanade Park viewpoints as to provide complete photographic coverage of the seawall and required

landscaping at a scale that allows comparisons to be made with the naked eye between photographs taken in different years and from the same vantage points. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the seawall has been constructed in conformance with the approved final plans described by Special Condition 1 above.

9. **Monitoring.** The Permittee shall ensure that the condition and performance of the as-built project is regularly monitored by a licensed civil engineer with experience in coastal structures and processes. Such monitoring evaluation shall at a minimum address whether the seacave infill/plug and seawall is being outflanked by the surrounding unarmored bluff face. Such evaluation shall also identify any exposed elements of the inland drilled pier and grade beam structure. Monitoring reports prepared by a licensed civil engineer with experience in coastal structures and processes, and covering the above-described evaluations, shall be submitted to the Executive Director for review and approval at three-year intervals by May 1st of each third year (with the first report due May 1, 2014, and subsequent reports due May 1, 2017, May 1, 2020, and so on) for as long as the approved project exists at this location. The reports shall identify any recommended actions necessary to maintain the approved project in a structurally sound manner and its approved state, including providing for removal from the beach of any sizeable chunks (greater in size than gravel) of structural concrete, removal and new contouring of any edges of the concrete that no longer seamlessly integrate with adjacent natural landforms, and plans for camouflaging or shaving away of any exposed elements of the rock dowels (with landscaping, bluff-like concrete, etc.) and shall include photographs taken from each of the same vantage points as required in the As-Built Plans (see Special Condition 8) with the date and time of the photographs and the location of each photographic viewpoint noted on a site plan.

10. **Future Seacave Infill/Plug and Seawall Maintenance.** This coastal development permit authorizes future maintenance as described in this special condition. The Permittee acknowledges and agrees on behalf of itself and all successors and assigns that it is the Permittee's responsibility (a) to maintain the seacave infill/plug and extended seawall and required landscaping in a structurally sound manner and in its approved state; (b) to maintain all faux bluff camouflaging elements in a structurally sound manner and in its approved state so that such elements function in this way, for the seacave infill/plug and seawall and for the rock dowels as they becomes exposed; and (c) to remove all debris that may fall from the bluff top area onto the beach or Esplanade Park below their parcel. Any such development, or any other maintenance development associated with the as-built seacave infill/plug and seawall shall be subject to the following:

    (a) Maintenance. "Maintenance," as it is understood in this condition, means development that would otherwise require a coastal development permit whose purpose is to repair, reface, and/or otherwise maintain the approved project in its approved state.

    (b) Maintenance Parameters. Maintenance shall only be allowed subject to the parameters of the approved Construction Plan required by Special Condition 2. Any proposed modifications to the approved construction plan and/or beach restoration requirements associated with any

maintenance event shall be reported to planning staff of the Coastal Commission's Central Coast District Office with the maintenance notification (described below), and such changes shall require a coastal development permit amendment unless the Executive Director deems the proposed modifications to be minor in nature (i.e., the modifications would not result in additional coastal resource impacts) and that an amendment is not legally required.

(c) Other Agency Approvals. The Permittee acknowledges that these maintenance stipulations do not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.

(d) Maintenance Notification. At least 2 weeks prior to commencing any maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's Central Coast District Office. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, proposed changes to the maintenance parameters, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's Central Coast District Office that the maintenance event complies with this coastal development permit amendment. If the Permittee has not received a response within 30 days of receipt of the notification by the Coastal Commission's Central Coast District Office, the maintenance event shall be authorized as if planning staff affirmatively indicated that the event complies with this coastal development permit amendment. The notification shall clearly indicate that the maintenance event is proposed pursuant to this coastal development permit amendment, and that the lack of a response to the notification within 30 days of its receipt constitutes approval of it as specified in the permit.

(e) Maintenance Coordination. Maintenance events shall be, to the degree feasible, coordinated with other maintenance events proposed in the immediate vicinity with the goal being to limit coastal resource impacts, including the length of time that construction occurs in and around the beach area and beach access points at Capitola Beach. As such, the Permittee shall make reasonable efforts to coordinate the Permittee's maintenance events with other events, including adjusting maintenance event scheduling as directed by planning staff of the Coastal Commission's Central Coast District Office.

(f) Non-compliance Proviso. If the Permittee is not in compliance with the conditions of this permit at the time that a maintenance event is proposed, then the maintenance event that might otherwise be allowed by the terms of this future maintenance condition shall not be allowed by this condition.

(g) Emergency. Nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

(h) Duration of Covered Maintenance. Future maintenance under this coastal development permit is allowed subject to the above terms for ten (10) years from the date of approval (i.e., until July 13, 2021). Maintenance can be carried out beyond the 10-year period if the Executive Director extends the maintenance term in writing.

(i) Seacave Infill/Plug, Seawall, and Rock Dowels Rate of Erosion. Because the seacave infill/plug, seawall, and rock dowels will erode at a slower rate than the surrounding unarmored bluff face, the upcoast and downcoast portions of the seacave infill/plug and seawall, and the exposed ends rock dowels, shall be modified during any maintenance event by "shaving" or otherwise removing portions as necessary to match the landward configuration of the surrounding natural bluff face, and to recontour such edges so that they maintain faux bluff camouflage. Any sizeable chunks (greater in size than gravel) of the seacave infill/plug and seawall concrete, and rock dowels that are the end result of such shaving shall be removed from the beach.

11. Assumption of Risk, Waiver of Liability, and Indemnity Agreement. By acceptance of this permit, the Permittee acknowledge and agree on behalf of themselves and all successors and assigns:

(a) That the site is subject to extreme coastal hazards including but not limited to episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, coastal flooding, landslides, bluff and geologic instability, and the interaction of same;

(b) To assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development;

(c) To unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards;

(d) To indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards, and;

(e) That any adverse effects to property caused by the permitted project shall be fully the responsibility of the Permittee.

12. Public Rights. The issuance of this coastal development permit shall not constitute a waiver of any public rights which may exist on the subject property. The Permittee shall not use such permit as evidence of a waiver of any public easement that exists on the property.

13. Deed Restriction. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit for Executive Director review and approval documentation demonstrating that the Permittee has executed and recorded against the subject property governed by this permit (i.e., the parcel depicted as APN 036-114-12 on Exhibit D) a deed restriction, in a form and content

acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the special conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property. The deed restriction shall include a legal description and graphic description of the parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

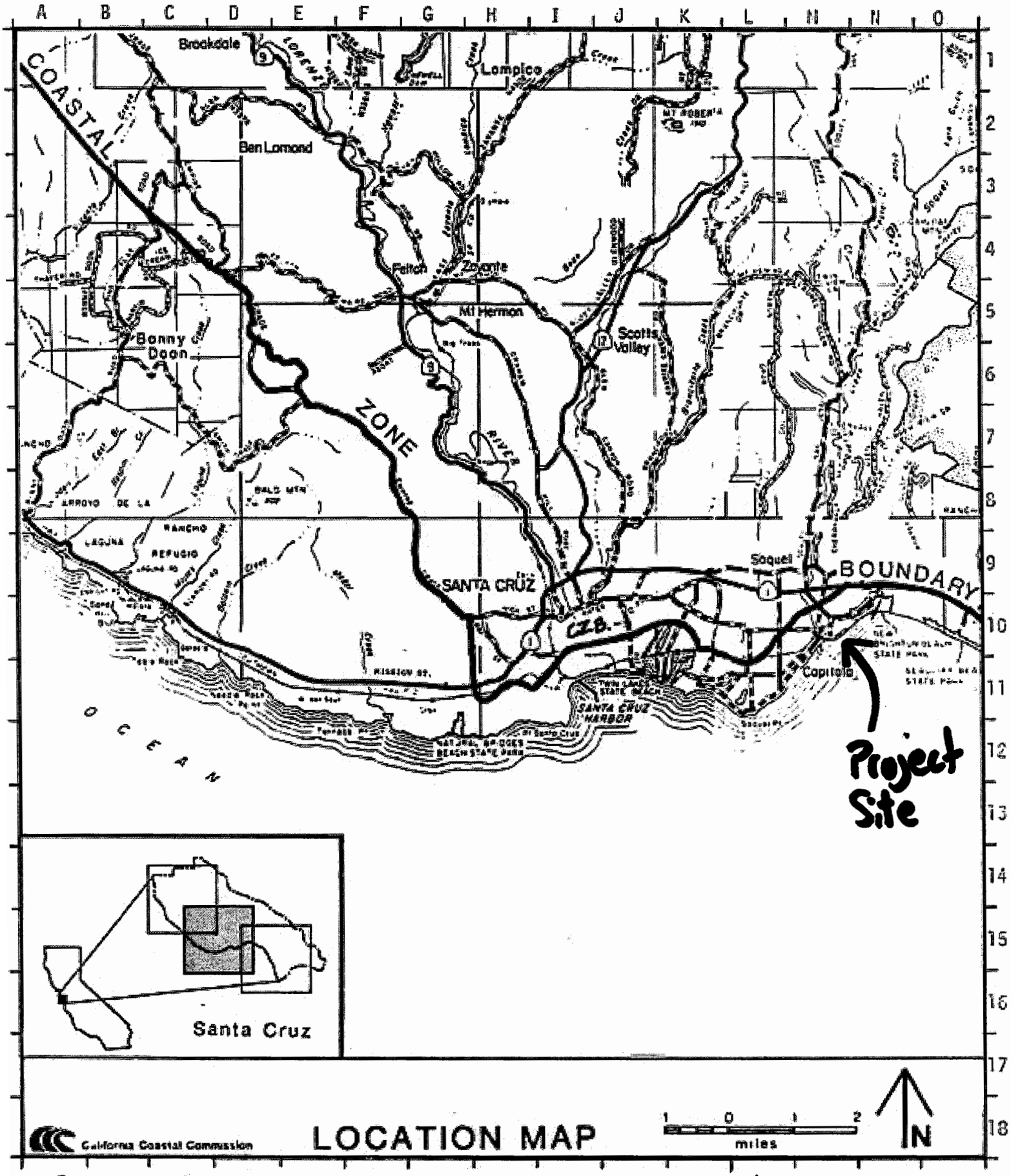
C.California Environmental Quality Act (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The City of Capitola, acting as the lead CEQA agency, conducted an environmental review for the proposed project as required by CEQA and issued a Mitigated Negative Declaration.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The Commission has reviewed the relevant coastal resource issues with the proposed project, and has identified appropriate and necessary modifications to address adverse impacts to such coastal resources. All public comments received to date have been addressed in the findings above. All above findings are incorporated herein in their entirety by reference.

The Commission finds that only as modified and conditioned by this permit will the proposed project avoid significant adverse effects on the environment within the meaning of CEQA. As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects that approval of the proposed project, as modified, would have on the environment within the meaning of CEQA. If so modified, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A).



County of Santa Cruz

CCC Exhibit A Sheet 2 of 3

(page 1 of 1 pages)

SOIL PIN WALL W/ TIEBACKS AND CONCRETE SEACAVE INFILL/PLUG

BLUFF AT AND DIRECTLY BELOW UNITS 7 & 8 BUILDING CORNER

PREPARED FOR:

MR. PAPKEN S. DER TOROSSIAN, C/O DENNIS NORTON DESIGNS
712 CAPITOLA AVENUE, SUITE C, CALIFORNIA 95010

PROJECT ADDRESS:

CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA, CALIFORNIA 95010
APN 036-114-12

CCC Exhibit 3 (page 1 of 4 pages)

STANDARD ABBREVIATIONS:

A.B.	ANCHOR BOLT	INS.	INSULATION
A/C	AIR CONDITIONING	INT.	INTERIOR
AGG.	AGGREGATE	JST.	JOIST
ALT.	ALTERNATE	KPL.	KICK PLATE
APPX.	APPROXIMATE	KIT.	KITCHEN
A.D.	AREA DRAIN	K.O.	KNOCKOUT
ASPH.	ASPHALT	L.B.	LAG BOLT
A.S.	ALUMINUM SLIDING WINDOW	LAM.	LAMINATE (D)
BM.	BEAM	L.H.	LEFT HAND
BIT.	BITUMINOUS	L.	LENGTH
BLK'G.	BLOCKING	LW.	LIGHTWEIGHT
BLDG.	BUILDING	LW.C.	LIGHTWEIGHT CONCRETE
B.U.R.	BUILT UP ROOFING	L.L.	LIVE LOAD
C.O.	CLEAN OUT	LV.	LOUVER
C.J.	CEILING JOISTS	LPT.	LOW POINT
CJT.	CONTROL JOINT	MAX.	MAXIMUM
CORR.	CORRUGATED	MIN	MINIMUM
CPT.	COUNTER FLASHING	MTL.	METAL
CFT	CUBIC FOOT	MMB.	MEMBRANE
CYD	CUBIC YARD	MRK.	MILLWORK
CLG.	CEILING	MISC.	MISCELLANEOUS
CLR.	CLEAR	(N)	NEW
C.M.U.	CONCRETE MASONRY UNIT	N.I.C.	NOT IN CONTRACT
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
DBL.	DOUBLE	O.	OVER
DET.	DETAIL	O/C.	ON CENTER
DIA.	DIAMETER	O.D.	OUTSIDE DIAMETER
DIAG.	DIAGONAL	O.H.	OVERHANG
D.F.	DOUGLAS FIR	OPT.	OPTIONAL
D.H.	DOUBLE HUNG WINDOW	PKT.	POCKET DOOR
DR.	DOOR	P/L.	PROPERTY LINE
D.S.	DOWN SPOUT	P.T.	PRESSURE TREATED
(E)	EXISTING	P.T.D.F.	PRESSURE TREATED DOUGLAS FIR
EA.	EACH	PWD.	PLYWOOD
ELEC.	ELECTRICAL	R.W.L.	RAIN WATER LEADER
EQ.	EQUAL	REF.	REFER
EXT.	EXTERIOR	REQ.	REQUIRED
F.F.	FINISH FLOOR	RFTR.	RAFTER
FLSH'G	FLASHING	REG.	REGISTER
FLR. JSTS.	FLOOR JOISTS	RE.	REINFORCE (D), (ING)
FLO.	FLUORESCENT	RET.	RETURN
F.O.S.	FACE OF STUD	R.A.	RETURN AIR
FAS.	FASTEN, FASTENER	REV.	REVISION (S), REVISED
FN.	FENCE	R.D.	ROOF DRAIN
F.A.	FIRE ALARM	RFG.	ROOFING
F.E.	FIRE EXTINGUISHER	RM.	ROOM
F.E.C.	FIRE EXTINGUISHER CABINET	R.O.	ROUGH OPENING
F.H.S.	FIRE HOSE STATION	S.C.	SOLID CORE
FPL.	FIREPLACE	S. O.	SELF CLOSING
FP	FIRE PROOF	SHT'G.	SHEATHING
FLX	FLEXIBLE	SCHD.	SCHEDULE
FLR	FLOOR (ING)	SNT.	SEALANT
FD	FLOOR DRAIN	SEC.	SECTION
FND.	FOUNDATION	SIM.	SIMILAR
FTG	FOOTING	SKYL.	SKYLIGHT
FR.	FRAME (D), (ING)	S.P.	SOUND PROOF
FBO	FURNISHED BY OTHERS	SPEC.	SPECIFICATION (S)
FUR	FURRING	SQ.	SQUARE
FUT	FUTURE	STD.	STANDARD
GA.	GAUGE	STR.	STRUCTURAL
GALV.	GALVANIZED	T&G	TONGUE AND GROOVE
G.F.I.	GROUND FAULT INTERRUPTED CIRCUIT	T.P.	TOP PLATE
G.L.B.	GLUE LAMINATED BEAM	TYP.	TYPICAL (IN OTHER LOCATIONS)
G.S.M.	GALVANIZED SHEET METAL	TEL.	TELEPHONE
GD.	GRADE	THR.	THRESHOLD
GVL.	GRAVEL	TOL.	TOLERANCE
HBD.	HARDBOARD	TOS.	TOP OF SLAB
HDW.	HARDWARE	T.	TREAD
HWD.	HARDWOOD	U.N.O.	UNLESS NOTED OTHERWISE
HTG.	HEATING	VERT.	VERTICAL
HVAC.	HEATING/VENTILATING/ AIR CONDITIONING	VB.	VAPOR BARRIER
		VNR.	VENEER
HT.	HEIGHT	V.G.	VERTICAL GRAIN
HBL	HOSE BIB	VIN.	VINYL
H.D.	HOLD DOWN	W.	WITH
H.C.	HOLLOW CORE	W.P.	WEATHER PROOF
HT. DIP	HOT DIPPED	WSCT.	WAINSCOT
HDR	HEADER BEAM	WTW.	WALL TO WALL
I.C.B.O.	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	W.C.	WATER CLOSET
		WIN.	WINDOW
I.D.	INSIDE DIAMETER	WD.	WOOD

VICINITY MAP
SCALE: AS SHOWN ABOVE

SHEET INDEX:

PROJECT CONTACTS:

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SURVEY CONSULTANT:
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ORIGINAL DRAWING MEASURE

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GEORGE E. DREW
No. 28681
EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

COVER SHEET–VICINITY MAP, STANDARD ABBREVIATIONS AND PROJECT CONTACTS

SOIL PIN WALL W/ TIEBACKS & CONCRETE SEACAVE INFILL/PLUG
CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA, CALIFORNIA 95010

JOB NO.	
DATE	08-14-09
PROJECT	08-040
DWG. NO.	CrestSpecs-1-5-01
REVISION	
REVISION	
REVISION	
REVISION	
DESIGNED BY	RH
CHECKED BY	GED

1 OF 5

Construction Plan includes the following:
- Construction Areas (see Construction Plan drawing).
- Construction Methods and Timing (enclosed 8.5x11 document).
- Construction Criteria (see notes below).

Construction Criteria Notes

- All work shall take place during daylight hours and lighting of the beach area is prohibited unless, due to extenuating circumstances, the Community Development Director authorizes non-daylight work and/or beach area lighting.
- Construction work or equipment operations shall not be conducted below the mean high water line unless tidal waters have receded from the authorized work areas.
- Any construction materials and equipment shall be delivered to the beach area by rubber-tired construction vehicles. When transiting on the beach, all such vehicles shall remain as high on the upper beach as possible and avoid contact with ocean waters.
- All construction materials and equipment placed on the beach during daylight construction hours shall be stored beyond the reach of tidal waters. All construction materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. The only exception shall be for erosion and sediment controls.
- Construction (including construction activities, materials, and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas.
- No work shall occur on the beach during weekends unless, due to extenuating circumstances, the Community Development Director authorizes such work.
- Equipment washing, refueling, and/or servicing shall not take place on the beach.
- The construction site shall maintain good construction site housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain, including covering exposed piles of soil and wastes; dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the beach).
- All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each workday. At a minimum, silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from entering into the Pacific.
- All beach areas and all beach points impacted by construction activities shall be restored to their pre-construction condition or better within three days of completion of construction. Any beach sand impacted shall be filtered as necessary to remove all construction debris from the beach.

SEC CONSTRUCTION PLAN

SOIL PIN WALL W/ TIEBACKS AND CONCRETE SEACAVE INFILL/PLUG
CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA, CALIFORNIA

CONSTRUCTION AREAS:

ATTACHED DRAWING DEFINES PLANNED CONSTRUCTION AREAS INCLUDING CRANE ACCESS POINTS AS WELL AS EQUIPMENT STAGING AND MATERIAL STORAGE AREAS. WORK ON BLUFF FACE WILL BE COMPLETED FROM CRANE SUPPORTED WORK PLATFORM. NO MATERIAL OR EQUIPMENT WILL BE STORED, SERVICED OR PARKED ON BEACH.

CONSTRUCTION PLAN:

WORK WILL START AT 8:00 AM AND BE COMPLOETED BY 4:30 PM MONDAY THROUGH FRIDAY (WITH LIMITED OVERTIME TO GET ADVANTAGE OF GOOD WEATHER). WE ANTICIPATE START DATE LATE SEPTEMBER/OCTOBER (IF WEATHER AND PERMIT CONDITIONS ALLOW) WITH APPROXIMATELY TEN WEEK CONSTRUCTION PERIOD.

SCHEDULE

WEEK 1 – MOVE IN MEN, MATERIAL AND EQUIPMENT. PREPARE JOBSITE FOR CONSTRUCTION OPERATION.

WEEK 2 – CLEAR WORK AREA, LAYOUT ANCHOR LOCATIONS, ERECT DRILL AND EXCAVATE KEY.

WEEK 3 THRU 4 – COMPLETE KEY EXCAVATION, POUR CONCRETE IN SEACAVE LOCATION.

WEEK 5 THRU 6 – FINISH SEACAVE INFILL/PLUG, FACING TO SIMULATE ADJACENT BEDROCK. DRILL SOIL PIN WALL, POUR CONCRETE AND INSTALL REINFORCING STEEL.

WEEK 7 THRU 8 – FORM, PLACE STEEL AND POUR CONCRETE IN GRADE BEAM, DRILL TIEBACKS, PERFORM LOAD TESTS ON ALL TIEBACKS.

WEEK 9 THRU 10 – CLEAN UP JOBSITE, LOAD EQUIPMENT AND MOVE OUT.

CONSTRUCTION OPERATIONS:

1. CONSTRUCTION WILL START AT 8:00 A.M. AND CEASE AT 5:00 P.M. MONDAY THROUGH FRIDAY AND 9:00 A.M. TO 4:00 P.M. SATURDAYS (SPECIAL OPERATIONS AND WEATHER CONDITIONS MAY REQUIRE ADJUSTMENT OF WORKING HOURS AT ANY TIME). WE EXPECT TO COMPLETE 2 PIERS PER DRILL. DOWEL, INSTALL REINFORCING STEEL, PUMP CONCRETE, PLUS GRADE BEAM CONSTRUCTION AND TIEBACKS INSTALLATION. IT IS ANTICIPATED THAT ALL WORK AT TOP OF BLUFF MAY BE COMPLETED WITHIN FOUR WEEKS OF ON-SITE MOBILIZATION. IT IS ANTICIPATED ANOTHER FOUR WEEKS FOR SEACAVE INFILL/PLUG CONSTRUCTION, WEATHER PERMITTING.

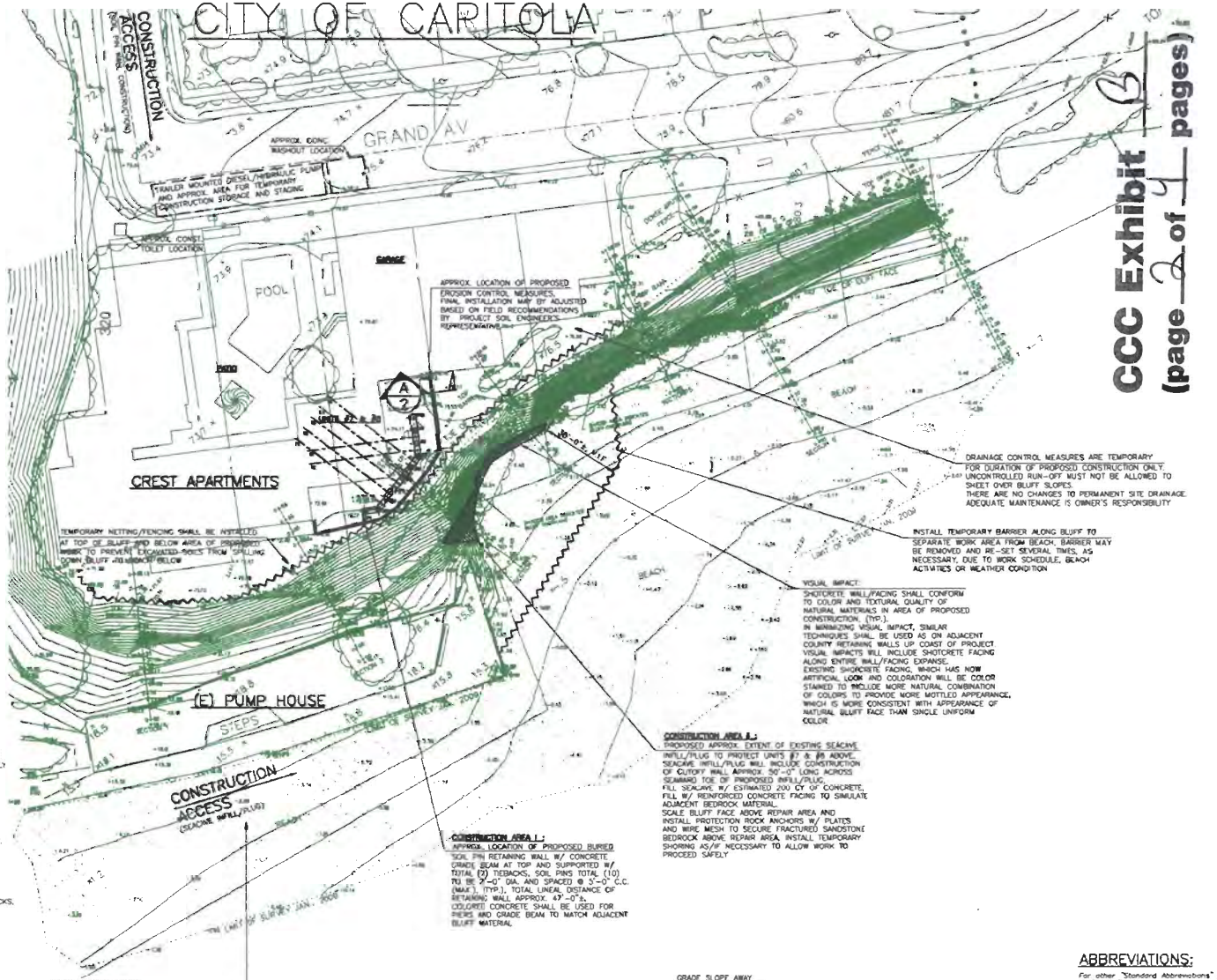
2. SOIL PINS AND TIEBACKS WILL BE ADVANCED WITH LIMITED ACCESS DRILL THAT CAN BE MOVED INTO POSITION WITH OUR 3 MEN CREW.

3. SHORING OF STRUCTURE WILL NOT BE REQUIRED. DRILL WILL SIT ON AND DRILL THROUGH TEMPORARY PLATFORM ON GRADE LOCATED AT TOP OF BLUFF AT UNIT #7 & #8 BUILDING CORNER.

4. DRILL WILL BE POWERED BY TRAILER MOUNTED DIESEL/HYDRAULIC PUMP (APPROXIMATELY SIZE AND WEIGHT OF SMALL PICK-UP TRUCK). PUMP WILL BE POSITIONED AT CORNER OF CLIFF & GRAND AVENUES.

5. EXCESS EXCAVATE SPOIL WILL BE HAULED TO STREET AND DISPOSED OF AT SUITABLE OFF-SITE FACILITY.

6. EROSION CONTROL: UPON COMPLETION OF OUR WORK, DISTURBED SOIL SURFACE WILL BE SEEDED, MULCHED AND PROTECTED WITH EROSION CONTROL MAT. TEMPORARY NETTING/FENCING SHALL BE INSTALLED AT TOP OF SLOPE BELOW AREA OF PROPOSED WORK TO PREVENT EXCAVATED SOILS FROM SPILLING DOWN BLUFF.



ABBREVIATIONS:

For other "Standard Abbreviations" refer to Cover Sheet.

C.C.	-Center to center
C.O.	-Clean out
E.W.	-Each way
(E), (N)	-Existing, New
N.I.C.	-Not in contract
P.T.D.F.	-Pressure treated douglas fir
T.O.G.B.	-Top of grade beam
T.O.C.	-Top of concrete
T. & B.	-Top and bottom
U.N.O.	-Unless noted otherwise
V.I.F.	-Verify in field
B.O.P.	-Bottom of pier
B.O.W.	-Bottom of wall
T.O.W.	-Top of wall
T.O.G.	-Top of grade
E.F.	-Each face

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REGISTERED PROFESSIONAL ENGINEER GEORGE E. DREW No. 20681 EXP. 9-30-11 CIVIL STATE OF CALIFORNIA

SITE PLAN, CONSTRUCTION PLAN, DRAINAGE, EROSION CONTROL, SITE ACCESS, STORAGE & STAGING AREAS, NOTES

SOIL PIN WALL W/ TIEBACKS & CONCRETE SEACAVE INFILL/PLUG
CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA, CALIFORNIA 95010

JOB NO.	
DATE	08-14-09
REVISED	09-042
DWG. NO.	Crestapartments-A-02
REVISION	
REVISION	
REVISION	
REVISION	
DESIGNED BY	RH
CHECKED BY	GED

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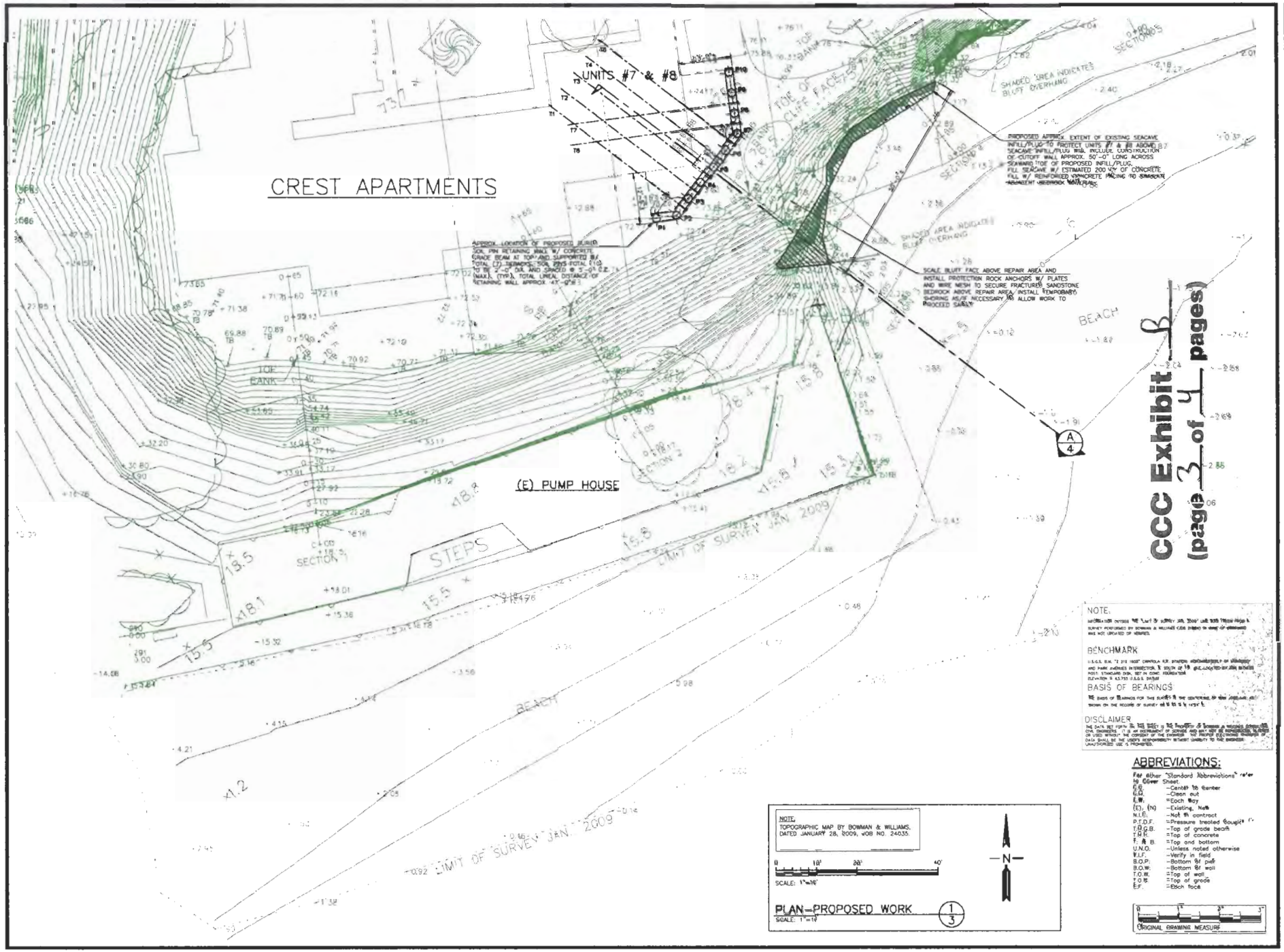

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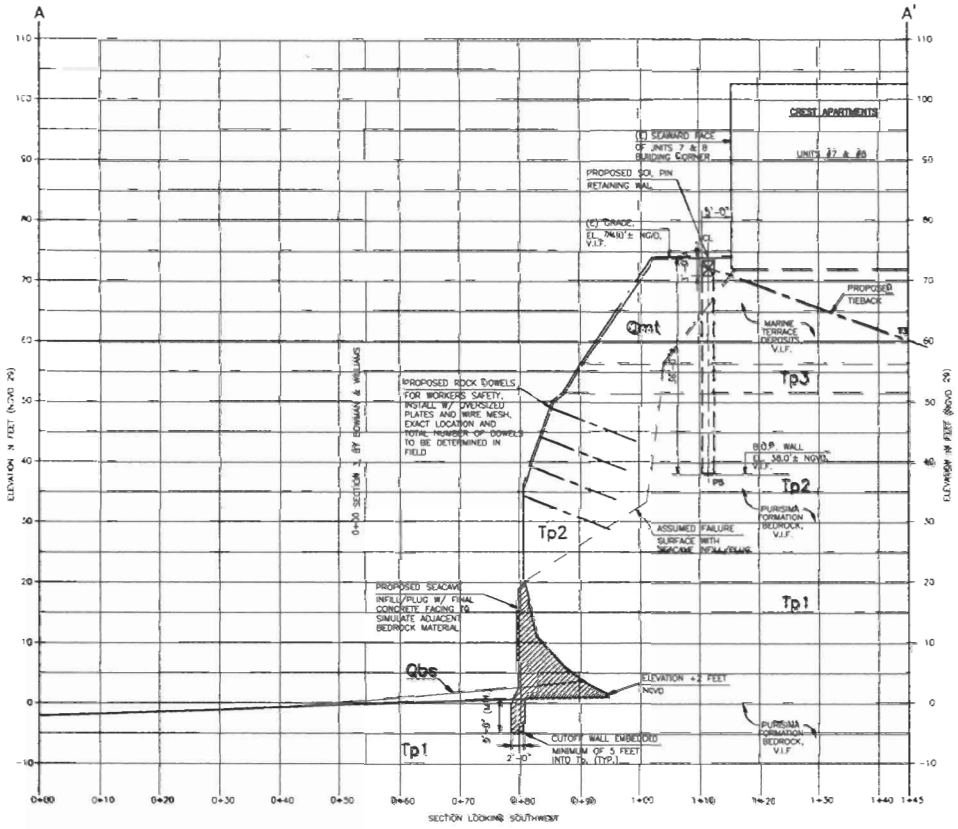
PLAN-PROPOSED WORK

SOIL PIN WALL W/ TIEBACKS & CONCRETE SEACAVE INFILL/PLUG

CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA, CALIFORNIA 95010

FILE NO.
DATE 09-14-09
PROJECT 09-088
DRWG. NO. Construction-1.2?
REVISION
REVISION
REVISION
REVISION
DRAWN BY RH
CHECKED BY GEF

3 OF 5



KEY
Qbs - BEACH SAND
Qmt - MARINE TERRACE DEPOSITS
Tp - PURISIMA FORMATION (SANDSTONE)

NOTE
- TOPOGRAPHIC MAP BY BOWMAN & WILLIAMS, DATED JANUARY 28, 2009, JOB NO. 24035.
- SECTION C-C' BY HARO, KASUNICH & ASSOCIATES, INC., DATED AUGUST 19, 2009, JOB NO. SC9599.

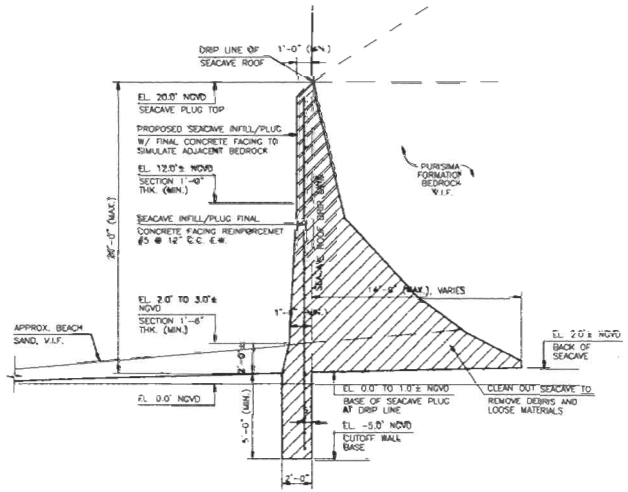
PROFILE SECTION A-A'

SCALE: 1"=10'

A/4

SEACAVE INFILL/PLUG AND CUTOFF WALL:

- SCALE BLUFF FACE ABOVE REPAIR AREA TO REMOVE ANY DEBRIS, LOOSE SOIL MATERIALS, DETACHED ROCK OR OVERHANGING AREAS.
- INSTALL ROCK ANCHORS WITH OVERSIZED PLATES AND WIRE MESH TO SECURE FRACTURED SANDSTONE BEDROCK ABOVE REPAIR AREA AS NEEDED TO PROTECT WORKERS WHILE PLUGGING SEACAVE AND EXCAVATING CUTOFF WALL.
- CLEAN OUT SEACAVE WITH EXCAVATOR TO REMOVE DEBRIS AND LOOSE MATERIALS.
- SHORE SEACAVE ROOF AS NEEDED TO PROTECT WORKERS WHILE PLUGGING SEACAVE AND EXCAVATING CUTOFF WALL.
- EXCAVATE CUTOFF WALL AT LEAST 5 FEET INTO BEDROCK BEACH PLATFORM ALONG SEAWARD PERIMETER OF REPAIR AREA. FOR CONSTRUCTION PLANNING ELEVATION OF BEDROCK BEACH PLATFORM RANGES FROM ABOUT -1 FOOT NGVD29 AT DRIP LINE OF SEACAVE TO ABOUT +2 FEET NGVD29 AT BACK OF SEACAVE. FOR WORKER SAFETY CUTOFF WALL SHOULD BE EXCAVATED OUTBOARD OR SEAWARD OF DRIP LINE OF SEACAVE ROOF. CUTOFF WALL IS TO BE REINFORCED AND STRUCTURALLY CONNECTED TO SEACAVE PLUG. AT LEAST 12 INCHES OF CONCRETE COVER IS RECOMMENDED FOR SEAWARD SIDE OF CUTOFF WALL REINFORCEMENT FOR WAVE ABRASION PROTECTION. AT LEAST 6 INCHES OF CONCRETE COVER IS RECOMMENDED ON INBOARD SIDE OF CUTOFF WALL REINFORCEMENT FOR CORROSION PROTECTION. AT LEAST 6 INCHES OF CONCRETE COVER IS RECOMMENDED ON INBOARD SIDE OF CUTOFF WALL REINFORCEMENT FOR CORROSION PROTECTION. FILL SEACAVE(S) WITH STRUCTURAL HIGH STRENGTH CONCRETE TO WITHIN 12 INCHES OF DRIP LINE OF SEACAVE ROOF. SEACAVE PLUG CONCRETE FILL WOULD NOT BE REINFORCED AS NEEDED TO TIE TO REINFORCED CUTOFF WALL.
- COVER SEACAVE PLUG REPAIR AREA WITH REINFORCED, STRUCTURAL ARTIFICIAL ROCK FACING TO SIMULATE ADJACENT BEDROCK WITH AT LEAST 12 INCHES OF CONCRETE COVER ON SEAWARD SIDE REINFORCEMENT WAVE ABRASION PROTECTION.
- REMOVE BLUFF FACE ROCK BOLT PLATES AND WIRE MESH.



DETAIL - SEACAVE INFILL/PLUG

SCALE: 1/4"=1'-0"

1/4

GENERAL NOTES:

1. All work will conform to 2007 CBC, all applicable federal, state, County, and current City of Capitola amendments for all codes.
2. All dimensions, conditions and location of facilities to be verified and determined in field.
3. Exact location of all work for proposed soil pin retaining wall and seacave infill/plug construction may be adjusted as field conditions require. Engineer of Record shall be informed of any deviation from approved location drilled soil pins and tiebacks and will submit to Building officials revised calculations and revised drawings for approval.
4. All cast-in-place reinforced concrete shall have minimum compressive strength at 28 days: 4,000 psi pins, grade beam and seacave infill/plug.
5. Steel members, if any, shall be:
   - All wide flange steel members shall conform to ASTM A572, grade 50.
   - Miscellaneous channels, angles, and plates shall conform to ASTM A36.
6. Reinforcing steel shall conform to ASTM A615, grade 60 for #4 bars and above. Steel bars to be epoxy pointed.
7. All exposed steel, if any, shall be galvanized or coated with corrosion inhibiting paint.
8. Special Inspection (2007 CBC Sec. 1704):
   - Concrete: f'_c=4,000 psi, w/c Ratio=0.45, Type II-V Portland Cement.
   Lab testing of concrete specimens is required.
   - Soil Engineer's representative to observe drilling process to confirm embedment depth of all soil pins and placement of seacave infill/plug.
   - Soil Engineer's representative to observe proof testing of tiebacks.
   Upon conclusion of tiebacks testing, Soil Engineer will prepare summary letter of his observations relative to both load testing, anchors depth, and soil pin retaining wall as-built construction conditions.
9. Section at construction joint (C.J.) make rough and form key.
10. Reinforcement cover (2007 CBC Sec. 1907.7.1):
    - Concrete cast against and permanently exposed to earth shall have minimum 3" concrete cover.
    - Concrete exposed to earth or weather shall have minimum 2" concrete cover for #6 bars and above, 1 1/2" for #5 bars and below.
11. All lumber for lagging, if any, shall be Douglas-Fir, pressure treated for wood-soil contact. Lagging grade to be No. 2, or better (Typ.).
12. All retrofit hardware, if any, to be by Simpson Strong-Tie Co., Inc.; or equal.
13. Splices of rebar to be class (B) splice. If shotcrete method is going to be utilized, lap splices of reinforcing bars (#5 and smaller) in shotcrete shall be by non-contact lap splice method with at least 2 1/2" clearance between bars (2007 CBC Sec. 1913.4.2).
14. Tieback notes:
    See Tieback Table #1, sheet 5, and relevant notes on sections.
    All tiebacks to be by DCI Dywidag, or equal.
    Tiebacks shall be double corrosion protected = DCP.
    Tiebacks to be installed at approx. 8'-0" O.C. horizontally.
    For total number of tiebacks see Tieback Table #1.
    Use adequate centralizers @ 10'-0" C.C.s. (if bar is used).
    Hole diameter at contractor's option, 8" dia. drilled hole assumed in design.
    Grout to be Portland grout w/water-cement ratio (w/c) of 0.4 to 0.5 w/ 5 gal. Bar sack.
    Allow up to 72.5 hr sand/yard.
    Allow 4hrs time before testing.
    Provide for two stages of grouting.
    First stage of grouting shall be for lagging of anchors. Holes to be tremie pipe grouted from bottom of hole for entire bonded zone.
    Second stage of grouting shall be accomplished after accepted testing, fill way up remaining hole.
    Fracture grouting may be utilized, at contractor's option, to achieve considerably higher soil-grout bond capacity.
    Multistrand anchors are factory equipped with grouted tube sleeves.
    Tieback depth may be adjusted with Soil Engineer's approval, based on bond strength developed in test program, or per actual soil conditions at time of drilling.
15. Epoxy adhesive to be "SET" by Simpson Strong-Tie Company, Inc., ER-3279, or equal. Concrete & grout patch shall be approved high strength cement based compound.
16. Design Recommendations and Plans/Details from:
    - Building Corner Soil Pin Wall with Seacave Plug, Preliminary design criteria recommendations, Crest Apartments, 101 Grand Avenue, Capitola, California, by Haro, Kasunich & Associates, Inc., dated August 19, 2009, Job No. SC9599.
    - Coastal Geologic Investigation (Draft), Crest Apartments, 101 Grand Avenue, Capitola, California, by Zinn Geology, dated 27 May, 2009, Job #2007029-A-SC and
    Coastal Geologic Investigation (Final), Crest Apartments, 101 Grand Avenue, Capitola, California, by Zinn Geology, dated 22 June, 2009, Job #2007029-G-SC.
17. Construction documents shall be reviewed, and geotechnical aspects of construction shall be periodically observed by Soil Engineer of Record: Haro, Kasunich & Associates, Inc. Tel. (831) 722-4175.
18. Representative of Zinn Geology, or Engineering Geologist, must observe all excavations (pier drilling, seacave footing excavation, etc.)
19. All construction shall comply with recommendations of aforementioned reports.

CCC Exhibit B (page 4 of 4 pages)

ABBREVIATIONS:

For other "Standard Abbreviations" refer to Cover Sheet

C.O.	=Center to center
C.O.	=Clean out
E.W.	=Each way
(E), (N)	=Existing, New
N.I.C.	=Not in Contract
P.T.D.F.	=Pressure treated douglas fir
T.O.G.B.	=Top of grade beam
T.O.C.	=Top of concrete
T. & B.	=Top and Bottom
U.N.O.	=Unless Noted Otherwise
V.I.F.	=Verify in field
B.O.P.	=Bottom of pier
B.O.W.	=Bottom of wall
T.O.W.	=Top of wall
T.O.G.	=Top of grade
E.F.	=Each Face

0 1" 2" 3"
ORIGINAL DRAWING MEASURE

SOIL ENGINEERING CONSTRUCTION, INC.
627 ARCUELLO STREET, REDWOOD CITY, CALIFORNIA 94063
PHONE (650) 367-4555 FAX (650) 367-4139

SOIL ENGINEERING CONSTRUCTION, Inc.

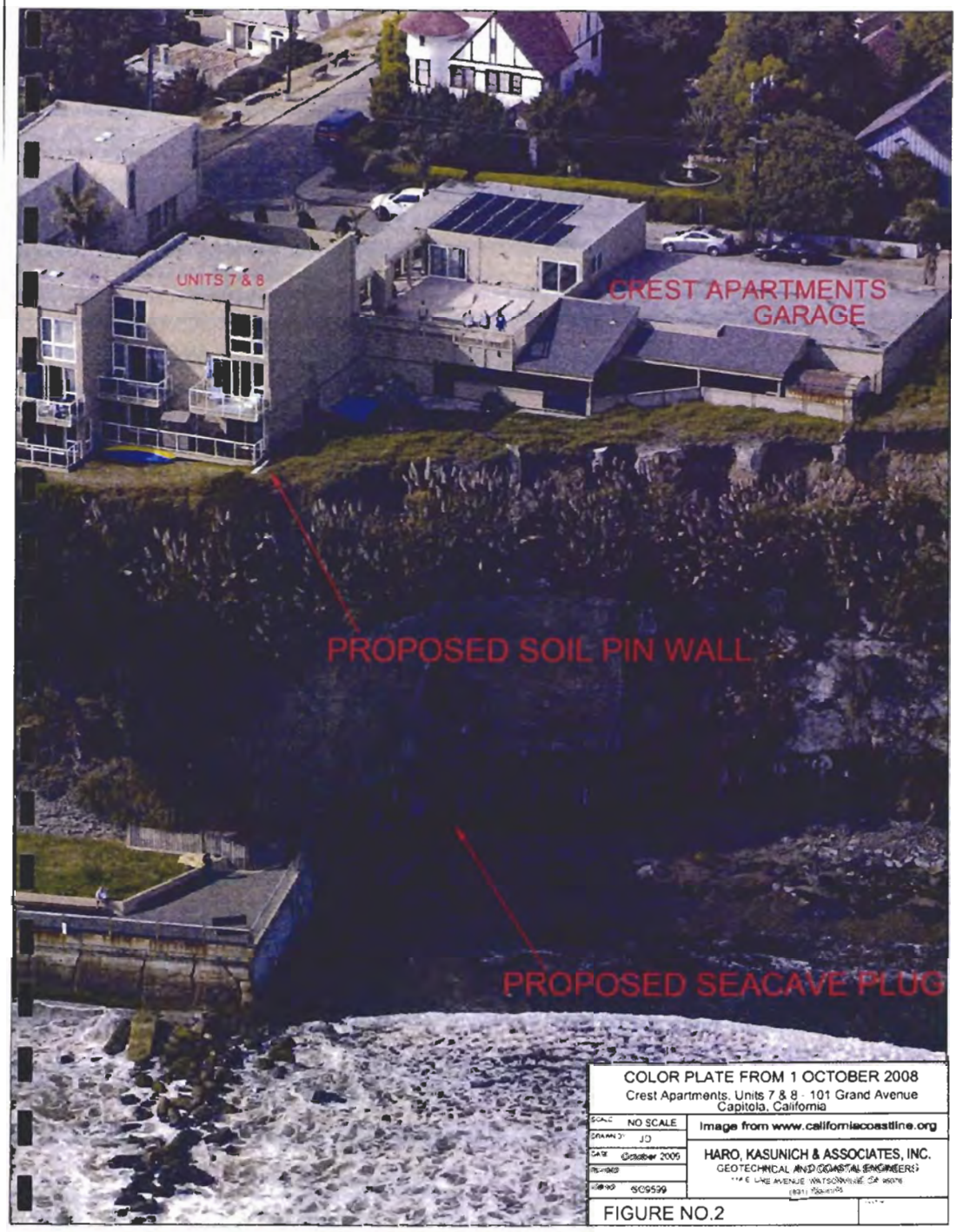
REGISTERED PROFESSIONAL ENGINEER
GEORGE E. BROWN
No. 20681
EXP. 9-30-11
CIVIL
STATE OF CALIFORNIA

PROFILE SECTION A-A', CONCRETE SEACAVE INFILL/PLUG AND PROJECT NOTES

SOIL PIN WALL W/ TIEBACKS & CONCRETE SEACAVE INFILL/PLUG
CREST APARTMENTS
101 GRAND AVENUE, CAPITOLA,
CALIFORNIA 95010

FILE NO.	
DATE	08-14-09
PROJECT	08-040
DWG. NO.	Crestpartments-4
REVISION	
REVISION	
REVISION	
DESIGNED BY	TBS
CHECKED BY	GEB

4 OF 5



COLOR PLATE FROM 1 OCTOBER 2008

Crest Apartments, Units 7 & 8 · 101 Grand Avenue
Capitola, California

SCALE: NO SCALE	Image from www.californiacoastline.org
DRAWN BY: JD	HARO, KASUNICH & ASSOCIATES, INC.
DATE: October 2009	GEOTECHNICAL AND COASTAL ENGINEERS
REVISED:	116 E LAKE AVENUE WATSONVILLE CA 95076
JOB NO: SC9599	(831) 722-4175

FIGURE NO.2

CCC Exhibit C
(page 1 of 8 pages)

SITE LOCATION MAP
Crest Apartments, Units 7 & 8 - 101 Grand Avenue
Capitola, California

SCALE: NO SCALE	Image from Google Earth
DRAWN BY: JD	HARO, KASUNICH & ASSOCIATES, INC.
DATE: October 2008	GEOTECHNICAL AND COASTAL ENGINEERS
REVISED:	116 E. LAKE AVENUE, WATSONVILLE, CA 95076
JOB NO.: SC9503	(831) 722-4175

FIGURE NO.1

CCC Exhibit C
(page 2 of 8 pages)

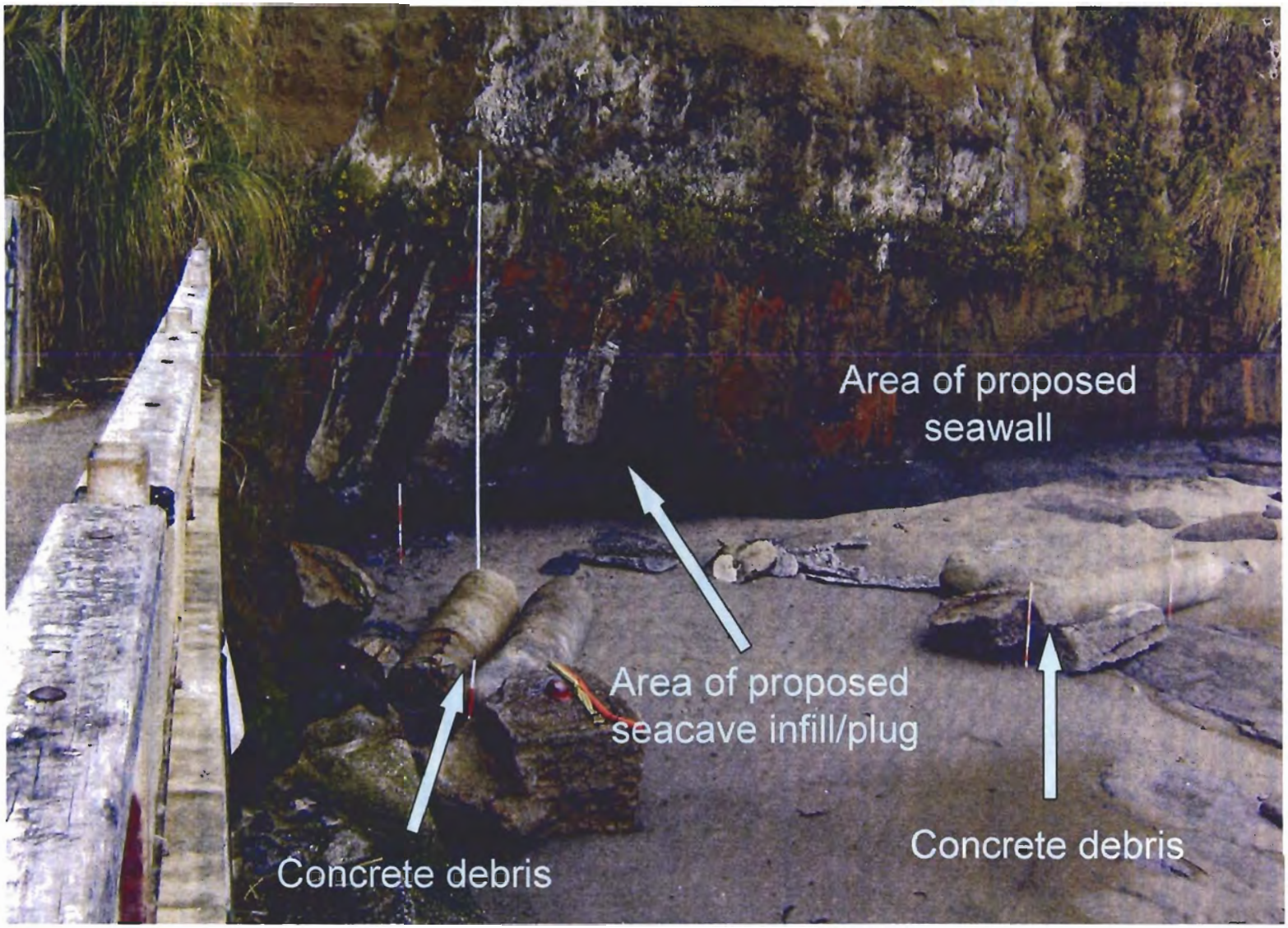


Photo courtesy Haro, Kasunich & Associates, May 2009

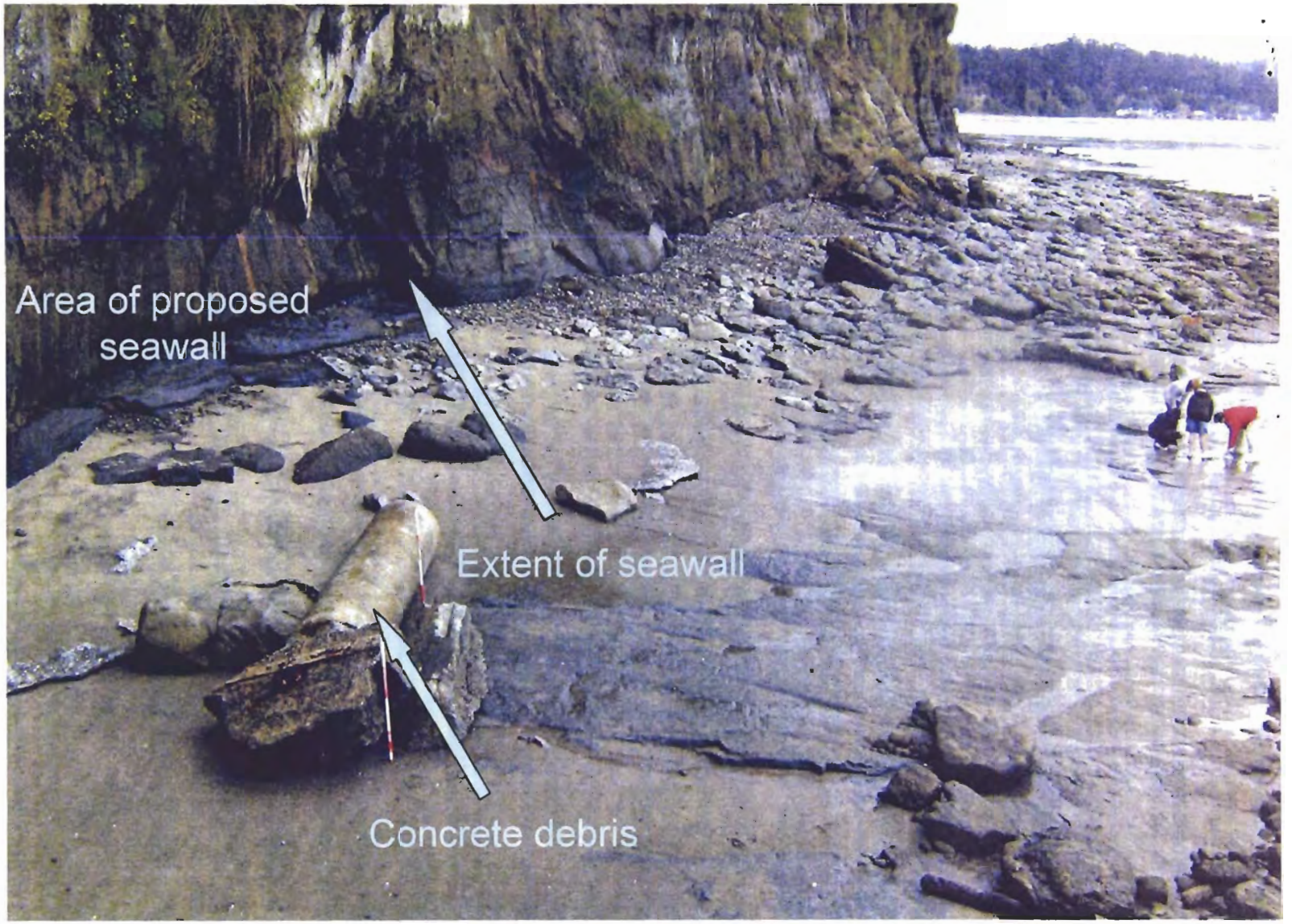
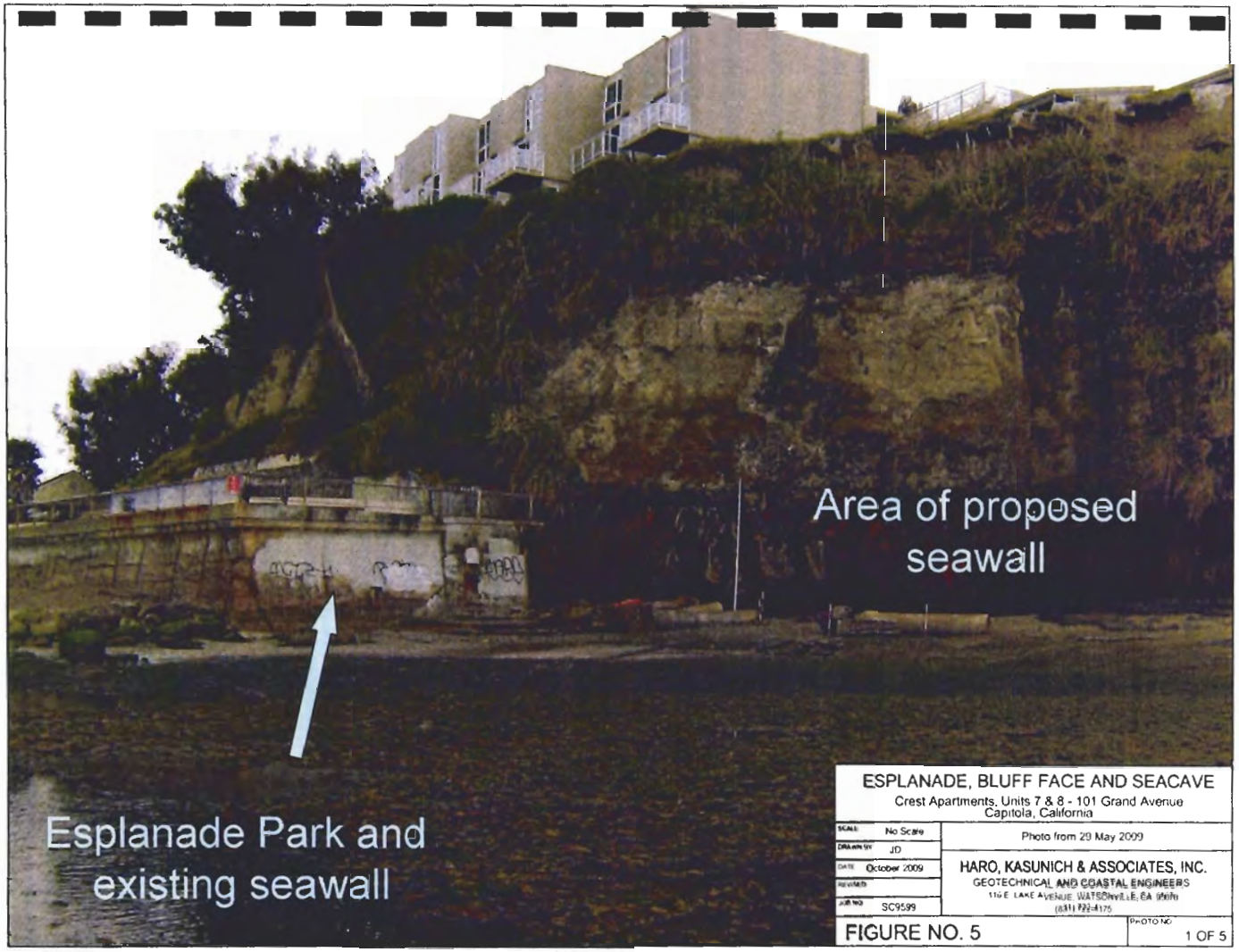
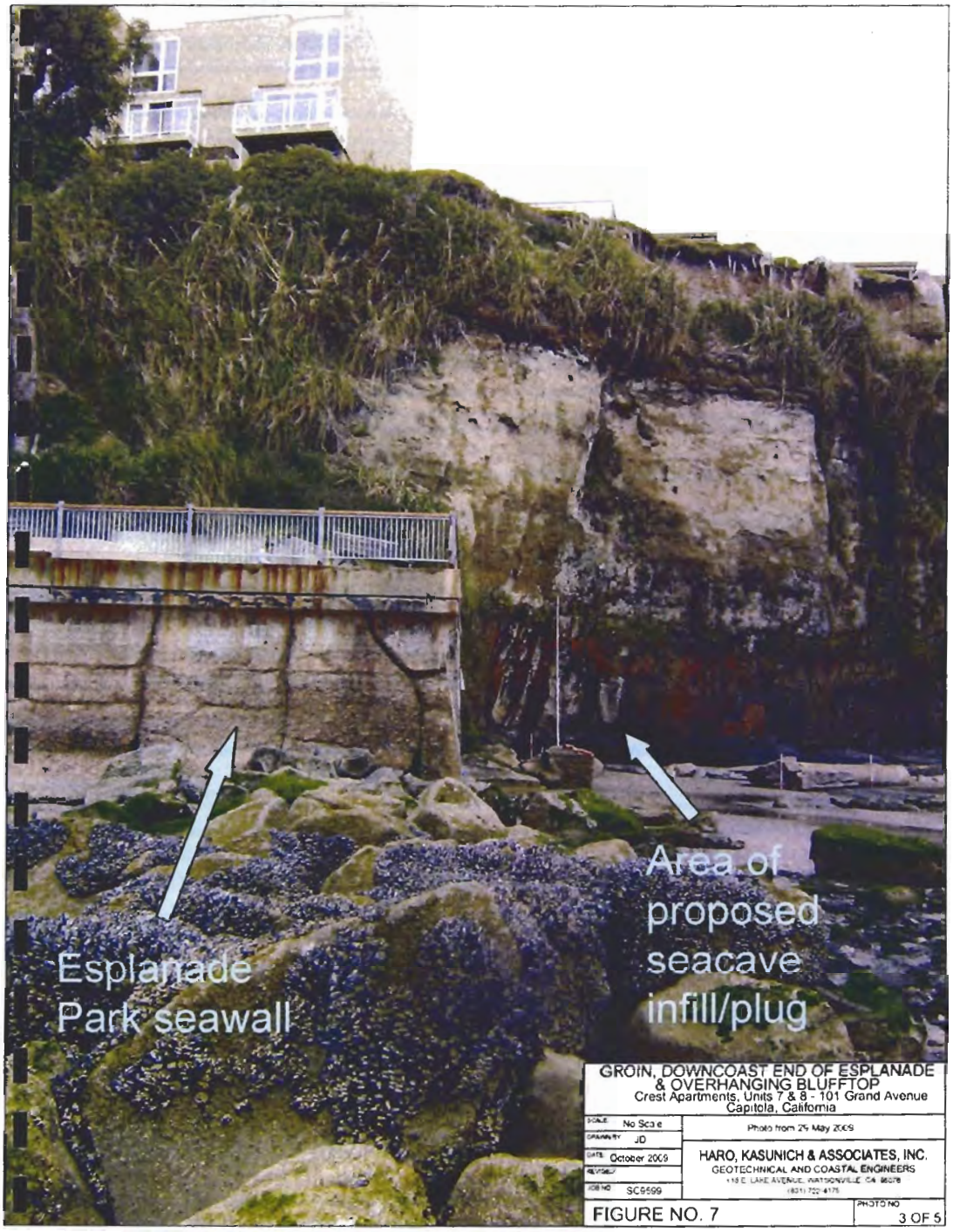


Photo courtesy Haro, Kasunich & Associates, May 2009



ESPLANADE, BLUFF FACE AND SEACAVE
Crest Apartments, Units 7 & 8 - 101 Grand Avenue
Capitola, California

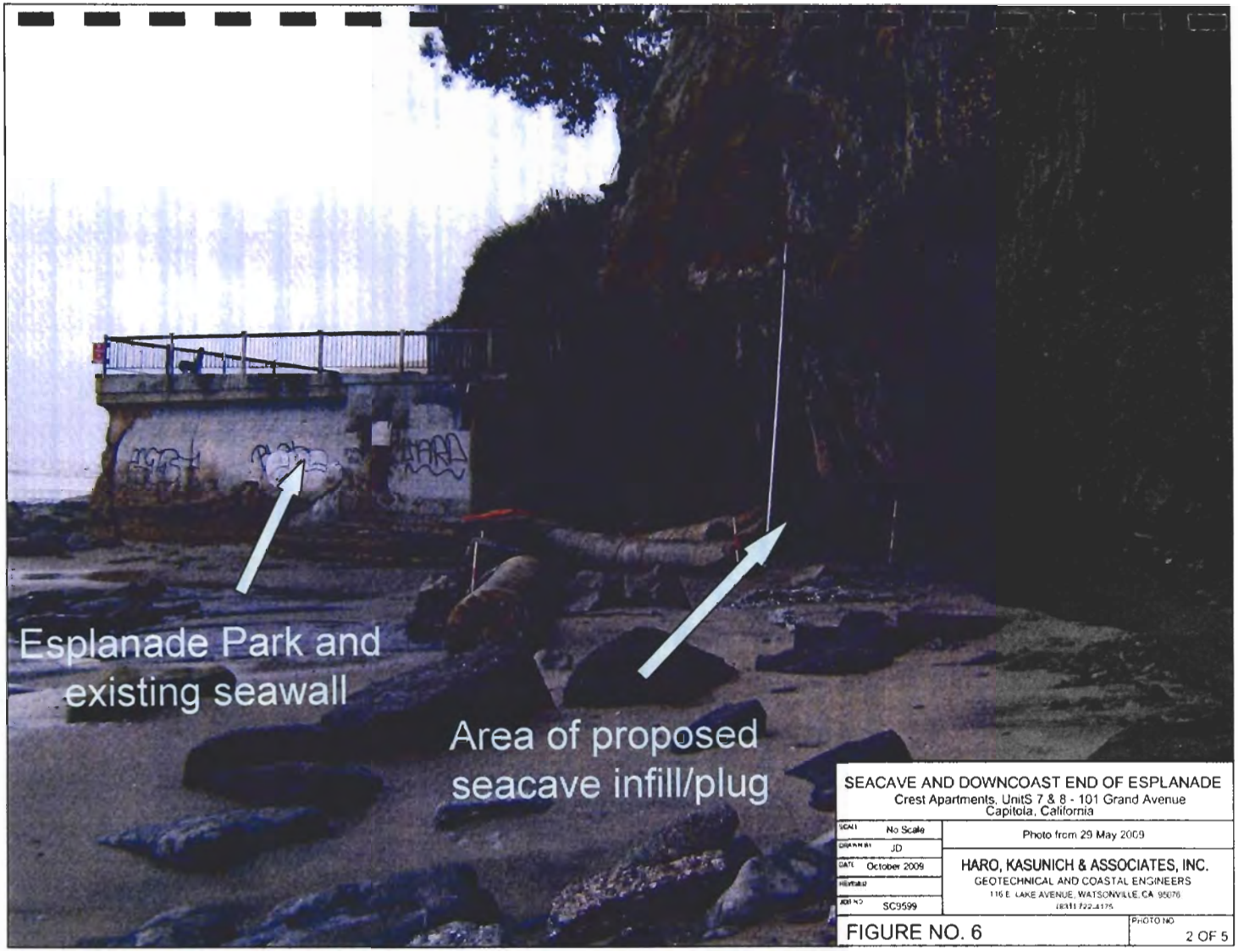
SCALE: No Scale	Photo from 29 May 2009
DRAWN BY: JD	HARO, KASUNICH & ASSOCIATES, INC.
DATE: October 2009	GEOTECHNICAL AND COASTAL ENGINEERS
REVISED:	116 E. LAKE AVENUE, WATSONVILLE, CA 95076
JOB NO: SC9599	(831) 722-4175
FIGURE NO. 5	PHOTO NO: 1 OF 5



GROIN, DOWNCOAST END OF ESPLANADE
& OVERHANGING BLUFFTOP
Crest Apartments, Units 7 & 8 - 101 Grand Avenue
Capitola, California

SCALE: No Scale	Photo from 29 May 2009
DRAWN BY: JD	
DATE: October 2009	HARO, KASUNICH & ASSOCIATES, INC.
REVISED:	GEOTECHNICAL AND COASTAL ENGINEERS
JOB NO: SC9599	116 E. LAKE AVENUE, WATSONVILLE, CA 95076 (831) 722-4175
FIGURE NO. 7	PHOTO NO 3 OF 5

CCC Exhibit C
(page 6 of 9 pages)



SEACAVE AND DOWNCOAST END OF ESPLANADE
Crest Apartments, UnitS 7 & 8 - 101 Grand Avenue
Capitola, California

SCALE: No Scale	Photo from 29 May 2009
DRAWN BY: JD	HARO, KASUNICH & ASSOCIATES, INC.
DATE: October 2009	GEOTECHNICAL AND COASTAL ENGINEERS
REVISED:	116 E. LAKE AVENUE, WATSONVILLE, CA 95076
JOB NO: SC9599	(831) 722-4175

FIGURE NO. 6 — PHOTO NO. 2 OF 5

Crest Apartments, 1972

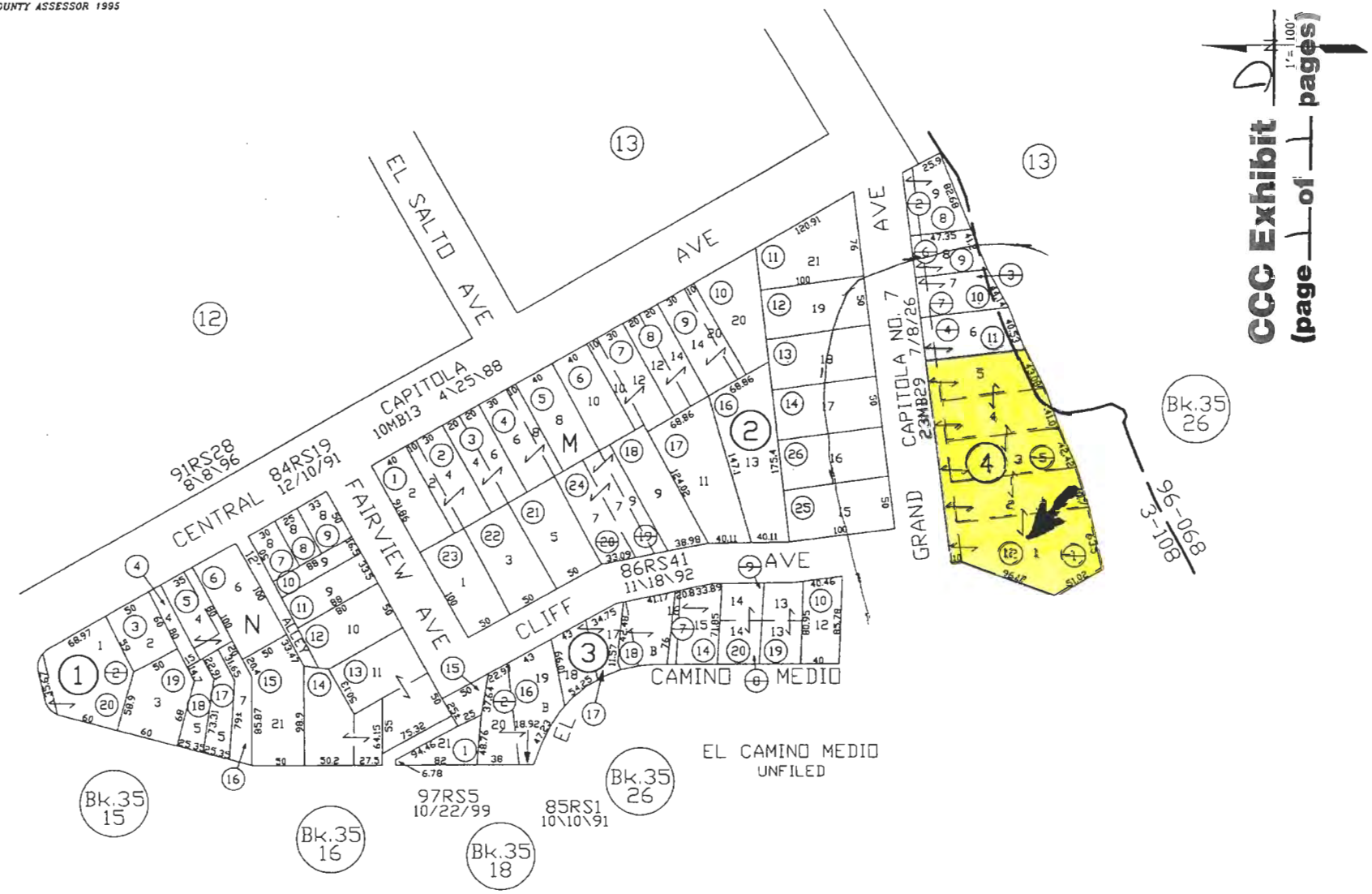
FOR TAX PURPOSES ONLY

CITY OF CAPITOLA

Tax Area Code
3-108 96-068

36-11

CCC Exhibit D (page 1 of 1 pages)



Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 36-11
City of Capitola
County of Santa Cruz, Calif.

Electronically drawn 5\16\95 CB
Rev 5\16\95 CB (Cor LBA 5602\154 & 156, 3-18 & 19)
Rev 4\25\96 CB (Cor)
Rev 12\3\96 CB (9RS36)
Rev 8\28\97 CB (Cor to st. text)
Rev 9\24\97 CB (Added pg ref & st. none)
Rev 25\11\97 GG (Cor subdiv. none)
Rev 12/19/97 GG (Cor APNs 3-16 & 17)
Rev 12\19\98 CB (Cor Consolidation)
Rev 12/13/99 CB (97RS5)
Rev 4/20/01 nvn (changed page refs.)
Rev 12/11/03 CB (Added dms to 3-10)