CALIFORNIA COASTAL COMMISSION
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Click here to go to original staff report

Th14a

Addendum

June 11, 2014

To: Commissioners and Interested Persons

From: California Coastal Commission
San Diego Staff

Subject: Addendum to **Item Th14a**, Coastal Commission Permit Application **#6-13-0948 (Bannasch)**, for the Commission Meeting of June 12, 2014

Staff recommends the following changes be made to the above-referenced staff report. Language to be added is underlined; language to be deleted is shown in ~~strikeout~~:

1. On Page 7 of the staff report, Special Condition 1 shall be modified as follows:

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final seacave/notch infill plans that are in substantial conformance with the plans submitted with this application received January 31, 2014 and April 9, 2014 by TerraCosta Consulting Group and the plans dated January 10, 2014 by David Reed Landscape Architects. Said plans shall first be approved by the City of Solana Beach and include the following:

   a. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the infill. Such plans shall confirm, and be of sufficient detail to verify, that the infill color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the infill material.

   b. During construction of the approved development, disturbances to sand and intertidal areas shall be minimized to the maximum extent feasible. All excavated beach sand shall be re-deposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or for any other purpose as construction material.

   c. The seacave and notch infills shall conform as closely as possible to the natural contours of the bluff, and shall not protrude beyond the existing "drip-line" (a parallel line extending down the face of the bluff above the seacave/notch and overhangs).

d. The erodible concrete for the seacave/notch infills shall be ~~consistent with the submitted plans and shall be~~ designed to provide a material with erosion characteristics similar to that of the adjacent natural bluff consistent with Special Condition 14.

e. The existing approximately 24 sq. ft. seacave infill located on the beach labeled "B" shall be removed (Exhibit 3) and the existing seacave infill labeled "C" shall be removed to the maximum extent possible without cutting into terrace deposits/clean sands (Exhibits 4-6). The permittee shall undertake the development in accordance with the approved plan. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. On Page 14 of the staff report, the following shall be added as Special Condition 14:

14. **Concrete Erodibility Testing.** PRIOR TO THE CONSTRUCTION OF ANY SEACAVE/NOTCH INFILL, the applicant shall submit to the Executive Director for review and written approval, a formulation for erodible concrete that has an erodibility index that is within 20 percent of the erodibility index of the native sandstone, as determined from either (1) a Jet Erodibility Test (JET) (for both the erodible concrete formulation and the native sandstone), (2) by Annandale's Erodibility Index ($K=M_s*K_b*K_d*J_s$, where M_s is the Mass Strength number, K_b is the block size, K_d is the joint shear strength number and J_s is the ground structure number) (for both the erodible concrete formulation and native sandstone), or (3) through a comparable method that has been submitted by the applicant with the revised final plans and approved, in writing, as an acceptable method by the Executive Director of the Commission.

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

3. On Page 27 of the staff report, the following shall be added after the first incomplete paragraph:

The Commission's engineer has provided criteria for testing concrete erodibility in order to provide additional assurance that the seacave/notch infill material will have erosion characteristics similar to that of the adjacent natural bluff. Special Condition No. 14 requires that prior to the construction of any seacave/notch infill, the applicant provide a formulation for erodible concrete that has an erodibility index within 20 percent of the erodibility index of the native sandstone of the coastal bluff, as

determined from either (1) a Jet Erodibility Test (JET)[1] (for both the erodible concrete formulation and the native sandstone), (2) by Annandale's Erodibility Index[2] ($K=M_s*K_b*K_d*J_s$, where M_s is the Mass Strength number, K_b is the block size, K_d is the joint shear strength number and J_s is the ground structure number) (for both the erodible concrete formulation and the native sandstone), or (3) through a comparable method that has been submitted by the applicant and approved, in writing, by the Executive Director of the Commission. Both Annandale's Erodibility Index and the Jet Erodibility Test provide a means for comparing the erodible concrete to the native sandstone for performance when exposed to a controlled jet or stream of water. Removal of the portion of Infill "C" (ref: Special Condition No. 1e) will provide the applicant with sample sandstone bluff material to use for erodibility testing. It is the opinion of the Commission's engineer that these tests will provide adequate information in regards to the scour characteristics of sandstone bluff material and erodible concrete. Notwithstanding these tests for erodibility, Special Condition Nos. 2 and 3 also require that the infill be monitored and that if the infill has not eroded at a rate comparable with the adjacent bluff, the infill material shall be removed and/or remedied to the maximum extent possible without cutting into terrace deposits/clean sands such that no portion of the infill remains seaward of a 'stringline' between the adjacent natural bluff on either end of the infill.

(G:\San Diego\Reports\2013\6-13-0948 Bannasch Addendum.docx)

[1] Al-Madhhachi, A. T.; Hanson, G.J.; Fox, G. A.; Tyagi, A. K.; and Bulut, R. "Measuring Soil Erodibility Using A Laboratory "Mini" Jet." 2013 Transactions of the ASABE 56(3)(2013): 901-910

[2] Annandale, George and Smith, Steve. "Calculation of Bridge Pier Scour Using the Erodibility Index Method." Colorado Department of Transportation. Final Report March 2001.

SURFRIDER FOUNDATION
SAN DIEGO COUNTY CHAPTER

Surfrider Foundation San Diego County Chapter

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Th14a

June 5th, 2014

Delivered via email

To: Eric Stevens
California Coastal Commission
7575 Metropolitan Drive Ste 103
San Diego, CA 92108-4402

Re: Item Th 14a Application 6-13-0948, William S. Bannasch Living Trust

Dear Mr. Stevens,

The Surfrider Foundation recognizes beaches as a public resource held in the public trust. Surfrider Foundation is an organization representing 250,000 surfers and beach-goers worldwide that value the protection and enjoyment of oceans, waves and beaches. For the past decade, the San Diego Chapter has reviewed and commented on coastal construction projects and policy in San Diego County. We appreciate the opportunity to provide comments to the California Coastal Commission about these important issues.

The Surfrider San Diego County Chapter has submitted several comment letters regarding the Bannasch Living Trust application; we respectfully request that you refer to our letters dated May 12, 2014 and March 6, 2014. Please also ensure that those letters are included in the addendum. We are submitting a simple comment letter here to ensure that one key point and one more piece of evidence is included in the record.

During the May Coastal Commission hearing, several examples of "erodible concrete" were cited by Coastal Commission (CCC) staff as preforming as expected. Following the hearing, we requested those addresses and were provided the following list:

6-97-165/Lucker and Wood/517 and 521 Pacific Avenue

6-99-091/Becker/ 533 Pacific Avenue

6-99-095/City of Solana Beach/Tide Beach

6-99-103/Coastal Preservation Association/201 through 231 Pacific Avenue

6-00-066/Monroe/141 and 197 Pacific Avenue

6-96-102/Solana Beach and Tennis Club/347-459 South Sierra

Our volunteers visited these locations, and took our own pictures of the "erodible concrete" which will be shared at the hearing. We also requested the PSI and concrete mix of these previous installations so that we can compare the specifications with the current application. However, that information has not been forth

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coming. CCC staff has been very cooperative, however, the applicants representative Walter Crampton continues to provide only anecdotal information instead of specifics or scientific studies.

To our knowledge, the only study that has been done on these installations of "erodible concrete" was commissioned by the City of Solana Beach and preformed in 2002 on the erodible concrete below the stairs at Tide Beach Park. Please note, that this installation is also cited as a success story by CCC staff. The City's monitoring report on the erodible mix concluded that it does not erode at the same rate as the bluff. The entire report can be found here:
http://home.roadrunner.com/~jmjaffee/Completed%20Drafts/PDFs%20Submitted/ErodibleMixComments.pdf
Highlights of that report and recommendations can be seen on the following page.

While this report is dated, we believe our pictures will support our point. We would much prefer to rely on scientific studies, instead of anecdotal information, and we would urge you to do the same. We cannot afford to experiment with 92 ft of bluff in Solana Beach and be left with a defacto seawall.

We respectfully request that you deny this CDP application; at least until true erodibilty tests are completed. Furthermore, as a result of our successful litigation in 2003, a project specific EIR is still required for the use of erodible concrete for this project. We have further arguments we will share with the Commission during the hearing. Thank you for reviewing our concerns and objections.

Sincerely,

Jim Jaffee
Co-chair of the Beach Preservation Committee
San Diego County Chapter of the Surfrider Foundation
Resident of Solana Beach

Julia Chunn-Heer
Policy Manager
San Diego County Chapter of the Surfrider Foundation

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CONCLUSIONS

Based on our review and field investigation, GSI concludes the following:

1. The fractured sandstone on both the north and south of the site are less resistant to abrasion that the infill concrete.

2. The abrasion and erosion is due both to wave energy focusing and overtopping. Wave focusing appears to be the primary factor contributing to the abrasion.

3. The infill structure is below the design elevation.

4. The enlarged opening to the sea cave adjoining the infill structure presents a hazard to small children, similar to other sea caves in the vicinity.

5. Between June, 1998, and November, 1999 (Group Delta Consultants, Inc., 1999a), a period of 17 months, the erosion rate amounted to approximately 3.5 inches per month. After the cave was infilled on November 14, 2001 to April 11, 2002, when initial measurements were taken by GSI, the horizontal erosion amounted to 18 inches to 49 inches from the top of the infill, landward to the sandstone (3.6 inches to 9.8 inches per month). The vertical erosion, measured from the top of the infill up to the sandstone contact surface, measured approximately 7 inches to 25 inches (i.e., 1.4 inches to 5.0 inches per month) and the eroded area from the south end of the infill was extended 25 feet landward in a N25E direction. Thus, it appears that wave energy is now less dispersed in the former sea cave, and is concentrated on the margins of the infill, at the fractured sandstone, exacerbating erosion. It must be noted that this erosion is episodic, site specific, and directly related to changing meteorological conditions.

RECOMMENDATIONS

1. For documentation, a new or revised topographic survey should be provided, showing the limits of the "older" infill(s) and the current voids.

2. Maintenance to the existing infill, utilizing similar materials should be performed.

3. Consideration may be given to utilizing geotextile bags full of sand (10 to 20, containing up to 5,000 yd^3 of sand) to mitigate the focusing effect of the offshore channel.

4. Consideration may also be given to infilling the existing voids and covering the fractures in the sandstone with concrete similar to the infill structure, to the lateral extent of the fracture, and the minimum design elevation.

5/

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Th14a

Filed:	10/22/2013
270th Day:	7/19/2014
Staff:	E. Stevens-SD
Staff Report:	5/29/2014
Hearing Date:	6/12/2014

STAFF REPORT: REGULAR CALENDAR

Application No.:	**6-13-0948**
Applicant:	**William S. Bannasch Living Trust, Attn: Michael Morris**
Agent:	Walter Crampton
Location:	On the beach below 523-525 Pacific Avenue, Solana Beach, San Diego County (APN: 263-041-22 & 263-041-24)
Project Description:	Repair and expansion of 5 existing seacave/notch infills using erodible concrete. Proposed infill expansions will have a cumulative length of approximately 92 feet and depths ranging from 3 to 19 feet. One existing infill that has migrated onto the public beach will be removed in its entirety and a portion of a separate infill will also be removed. The expanded infills will be keyed into formational bedrock and will extend vertically up to the dripline of the Torrey Sandstone. A sculpted and colored erodible concrete face will be applied to two of the existing infills. Removal of permanent irrigation on the bluff top lot and installation of artificial turf.
Staff Recommendation:	Approval with Conditions

STAFF NOTES

This item was first agendized and a staff report was prepared for the Commission's March, 2014 hearing. However, in order to respond to the staff recommendation, the applicant requested a postponement**.**

This item was then brought to the Commission at its May, 2014 hearing. At the hearing, the Commission voted to continue this item in order to allow the item to be heard at a Commission hearing in Southern California.

SUMMARY OF STAFF RECOMMENDATION

The proposed project is located on a city-owned beach and on the bluff fronting two lots containing an existing single family residence and a vacant residential lot in the City of Solana Beach. The site currently contains five existing seacave infills on the public beach at the toe of the bluff, which were constructed pursuant to two separate Coastal development permits (CDPs). The subject project would maintain and expand the 5 existing seacave infills using only erodible concrete; remove an existing seacave infill in its entirety that has become dislodged and is lying on the public beach (Infill "B"), remove a portion of an existing seacave infill that is encroaching on the public beach (Infill "C"), and remove all permanent irrigation from the bluff top lots and install artificial turf in place of the existing lawn area.

Staff is recommending approval of the proposed project, with special conditions. The primary issues raised by the proposed development include adverse impacts to public beach access and adverse visual impacts to coastal bluffs.

Staff, including the Commission's coastal engineer and geologist, have evaluated the relevant project materials, have visited the site, and have determined that the proposed seacave infills represent the minimum amount of armoring necessary to maintain the existing seacaves and to address the expansion of the seacaves and notches at the subject site. Furthermore, the applicant is not proposing to infill any new seacaves or notches that are not directly connected to seacaves that were approved to be filled previously by the Commission.

The City's recently certified Land Use Plan (LUP) allows for pre-emptive construction of erodible concrete seacave/notch infills, even when a bluff top structure is not imminently threatened. In the case of the subject property, the property owner has waived any rights to construction of a seawall or a mid or upper bluff wall to protect the subject bluff top structure. However, the prior Commission approval of the bluff top structure specifically allows for infilling of seacaves in the future and maintenance of the existing seacave infills fronting the subject site.

Special Condition 2 requires that the applicant submit and implement a comprehensive monitoring program to ensure that the proposed seacave/notch infills are functioning as designed and are not adversely impacting coastal resources. Special Condition 3 requires that if the monitoring finds that any portion of the existing or proposed seacave/notch infills encroaches greater than 6 inches seaward of the adjacent natural bluffs, that the property owner obtain a CDP amendment from the Commission to remove and/or remedy the situation. The proposed seacave/notch infill maintenance and expansion project has been designed to erode at a comparable rate as the natural bluff or will be maintained to do so if needed, and is not predicted to impact available beach area in the future.

In addition, if the seacave/notch infills do not function as designed, such that the back of the beach is essentially fixed, Special Condition 12 requires that the applicant return to the Commission to mitigate for any unmitigated impacts to public access, recreation, shoreline sand supply and visual quality. Mitigation could include additional sand supply mitigation, additional public access and recreation mitigation, an encroachment agreement with the City, and/or application of policies related to the imposition of the authorization period for shoreline armoring in the LUP that would require the proposed seacave/notch infills only be authorized so long as they are required to protect the existing bluff top structure.

Currently, one of the existing infills (Infill "C") extends beyond the bluff on the beach and adversely impacts public access. In order to specifically avoid such an outcome, the previously approved seacave infill design for the site incorporated joints into the concrete, which would supposedly break off onto the beach as the adjacent bluff naturally eroded landward (CDP #6-87-391). Special conditions on the permit also required that portions of the existing seacave infills that fail and adversely impact public beach access be removed by the applicant. However, it appears that the applicant did not construct the seacave infills consistent with the design approved by the Commission, thereby resulting in the current encroachment on the beach.

The applicant is now proposing to remove a portion of Infill "C." However, the majority of the infill cannot be removed at this time due to the presence of terrace deposits/clean sands directly above the infill. As proposed by the applicant, a relatively small quantity of natural Torrey sandstone bluff material located above the concrete infill proposed for removal will also need to be removed. The Commission's geologist and engineer have reviewed the site plans and photographs and they concur that the proposed removal will not destabilize the coastal bluff. In this particular situation, the removal of natural bluff material is not prohibited by the City's certified LUP or the Chapter 3 policies of the Coastal Act because it is being done to achieve stability in connection with removal of development that was not properly constructed. Removing all of the infill has the potential to result in further destabilization of the coastal bluff above the infill and thereby put the existing residence at risk. Thus, a portion of the infill will continue to encroach on the public beach and will result in substantial impact to coastal resources.

Furthermore, the proposed application would expand Infill "C," through the placement of new erodible concrete infill on either side of the protrusion in order to provide additional protection against upper bluff collapse. Although the new infill adjacent to Infill "C" will

use erodible concrete, it is likely that the infill expansions will be maintained so long as the existing Infill "C" remains and therefore will result in ongoing adverse impacts to coastal resources and must be mitigated for. Retention and expansion of Infill "C" will result in a loss of 85 square feet of beach area through direct encroachment, 7.8 sq. ft. per year of beach area will be "lost" annually through passive erosion due to fixing the back beach, and 265.5 cubic yards of sand will be retained behind the infill over a 20-year period. Therefore, Special Condition 12 requires that the applicant pay a mitigation fee of $4,325 to account for the proposed project's adverse impacts on shoreline sand supply. In addition, the degradation of public access to and along the beach resulting from Infill "C" is required to be mitigated through the City's interim in-lieu deposit fee, which requires the applicant to pay an interim deposit fee of $31,000. Although the applicant did not incorporate payment of the mitigation fees for Infill "C" in the proposed project description, the applicant has indicated he is in agreement with the required fees and the applicant has provided the mitigation calculations used in this analysis.

The proposed seacave infill maintenance and expansion project is within the Commission's coastal development permit jurisdiction. The Commission recently certified the City's Land Use Plan (LUP); however, the City of Solana Beach does not yet have an implementation plan; thus, the LCP is not fully certified. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the City's certified LUP and the recent Commission action on an LUP amendment are used as guidance.

Commission staff recommends **approval** of Coastal Development Permit application #6-13-0948 as conditioned.

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APPENDIX

Appendix A – Substantive File Documents

EXHIBITS

Exhibit 1 – Project Location
Exhibit 2 – Proposed Site Plan
Exhibit 3 – Proposed Removal of Existing Infill “B”
Exhibit 4 – Infill “C” Photo Showing Terrace Deposits (Looking North)
Exhibit 5 – Infill “C” Photo Showing Terrace Deposits (Looking South)
Exhibit 6 – Proposed Removal of Portion of Existing Infill “C”
Exhibit 7 – Required Public Access and Recreation and Sand Mitigation for Infill “C”
Exhibit 8 – Mitigation Fee Calculations
Exhibit 9 – Sand Supply Fee Excluded Volume
Exhibit 10 – Existing Infill Resurfacing (Only for Existing Infills “A” and “D”)
Exhibit 11 – Infill Expansion Section
Exhibit 12 – CDP #6-87-391
Exhibit 13 – CDP #6-91-081

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-13-0948 subject to the conditions set forth in the staff recommendation.*

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

Resolution:

The Commission hereby approves coastal development permit 6-13-0948 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following 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 of 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.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Revised Final Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final seacave/notch infill plans that are in substantial conformance with the plans submitted with this application received January 31, 2014 and April 9, 2014 by TerraCosta Consulting Group and the plans dated January 10, 2014 by David Reed Landscape Architects. Said plans shall first be approved by the City of Solana Beach and include the following:

   a. Sufficient detail regarding the construction method and technology utilized for texturing and coloring the infill. Such plans shall confirm, and be of sufficient detail to verify, that the infill color and texture closely matches the adjacent natural bluffs, including provision of a color board indicating the infill material.

   b. During construction of the approved development, disturbances to sand and intertidal areas shall be minimized to the maximum extent feasible. All excavated beach sand shall be re-deposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or for any other purpose as construction material.

   c. The seacave and notch infills shall conform as closely as possible to the natural contours of the bluff, and shall not protrude beyond the existing "drip-line" (a parallel line extending down the face of the bluff above the seacave/notch and overhangs).

   d. The erodible concrete for the seacave/notch infills shall be consistent with the submitted plans and shall be designed to provide a material with erosion characteristics similar to that of the adjacent natural bluff.

   e. The existing approximately 24 sq. ft. seacave infill located on the beach labeled "B" shall be removed (Exhibit 3) and the existing seacave infill labeled "C" shall be removed to the maximum extent possible without cutting into terrace deposits/clean sands (Exhibits 4-6). The permittee shall undertake the development in accordance with the approved plan. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the

plan shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. **Monitoring Program.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, a plan prepared by a licensed geologist or geotechnical engineer for a seacave/notch infill monitoring program which includes the following:

   a. Current measurements of the distance between the residence and the bluff edge (as defined by Section 13577 of the California Code of Regulations), and provisions for these measures to be taken annually after completion of construction for the life of the project. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, etc. so that annual measurements can be taken at the same bluff location and comparisons between years can provide information on bluff retreat.

   b. Provisions for establishing any differential retreat between the natural bluff face and each of the seacaves/notches by measuring both ends of the seacaves/notches and at 20-foot intervals (maximum) along the top of the seacave/notch face, and the bluff face intersection annually after completion of construction for the life of the project. Measurements may be taken through aerial photography. The program shall describe the method by which such measurements shall be taken.

   c. Provisions for the annual measurement of the erodibility of the proposed erodible concrete infill. The program shall describe the method by which such measurements shall be taken.

   d. Provisions for submittal of a report to the Executive Director of the Coastal Commission on June 1st every two years for a six year period beginning after completion of construction. Each report shall be prepared by a licensed geologist or geotechnical engineer. The report shall contain the measurements and evaluation required in sections a, b, and c above. The report shall also summarize all measurements and provide analysis of trends, annual retreat or rate of retreat, and the stability of the overall bluff face, including the upper bluff area, and the impact of the seacave/notch infills on the natural bluff, and shall include suggestions that do not involve the construction of structures on the face of the bluff for correcting any problems. In addition, each report shall contain recommendations, if any, for necessary maintenance, repair, changes or modifications to the project. If any portion of the existing or proposed seacave/notch infills is found to extend seaward of the 'drip line' of the natural bluff by more than six (6) inches in any location, the report shall include alternatives and recommendations to remove or otherwise remedy this condition such that no seaward extension of the infill will remain. If it is feasible in the future to remove all or a portion of the existing Infill "C" that is located seaward of a 'stringline' between the adjacent natural bluff on either end of the infill, the

report shall include alternatives and recommendations to remove or otherwise remedy this condition such that no seaward extension of the infill will remain.

e. Provisions for submission of a report containing the information identified in section D above at 3 year intervals following the last biannual report, for the life of the project. However, reports shall be submitted in the spring of any year in which the following event occurs:

   1. A 20-year storm event

   2. An "El Niño" storm event

   3. A major tectonic event magnitude 5.5 or greater affecting San Diego County

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

f. An agreement that the permittee shall apply for a coastal development permit amendment within three months of submission of the report required in subsection D and E above for any necessary maintenance, repair, changes or modifications to the project recommended by the report that require a coastal development permit.

g. An agreement that the permittee shall apply for a coastal development permit amendment within three months of submission of the report required in subsection D and E above to address any impacts of the infill that have not been previously addressed if the monitoring report finds that the back of the beach has been effectively fixed by the infills.

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

3. **Future Maintenance/Debris Removal.** The permittee shall remove all debris deposited on the beach or in the water as a result of construction of the seacave/notch infill. The permittee shall also remove all debris deposited on the beach or in the water as a result of failure or damage of the shoreline protective device in the future. In addition, the permittee shall maintain the permitted seacave/notch infill in its approved state except to the extent necessary to comply with the requirements set forth below. Maintenance of the seacave/notch infills shall include maintaining its color, texture and integrity. Any change in the design of the project or future additions/reinforcement of the seacave/notch infill beyond minor re-grouting or other exempt maintenance as defined in Section 13252 of the California Code of Regulations, will require a coastal development permit. However, in all

cases, if, after inspection, it is apparent that repair and maintenance is necessary, the permittee shall contact the Commission's San Diego office to determine whether permits are necessary, and shall subsequently apply for a coastal development permit for the required maintenance. If at any time after project completion, any portion of the existing or proposed seacave/notch infills is found to extend seaward of the face of the natural bluff by more than six (6) inches in any location or it is feasible to remove all or a portion of Infill "C" that is located seaward of a 'stringline' between the adjacent natural bluff on either end of the infill, the permittee shall obtain and implement a coastal development permit to remove and/or remedy this condition such that no portion of the infill remains seaward of a 'stringline' between the adjacent natural bluff on either end of the infill.

4. **Storage and Staging Areas/Access Corridors.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final plans indicating the location of access corridors to the construction site and staging areas. The final plans shall indicate that:

   a. No overnight storage of equipment or materials shall occur on sandy beach or at the Fletcher Cove Parking Lot, and the use of other public parking spaces shall be minimized. During the construction stages of the project, the permittee shall not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no machinery shall be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seacave/notch infills. Construction equipment shall not be washed on the beach or in the Fletcher Cove parking lot.

   b. Access corridors shall be located in a manner that has the least impact on public access to and along the shoreline.

   c. No work shall occur on the beach on weekends, holidays or between Memorial Day weekend and Labor Day of any year.

   d. The applicant shall submit evidence that the approved plans and plan notes have been incorporated into construction bid documents. The applicant shall remove all construction materials/equipment from the staging site and restore the staging site to its prior-to-construction condition immediately following completion of the development.

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

5. **Assumption of Risk.** By acceptance of this permit, the applicant acknowledges and agrees (a) that the site may be subject to extraordinary hazards from bluff collapse and erosion; (b) to assume the risks to the applicant 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; and (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.

6. **Deed Restriction**. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

7. **State Lands Commission Review.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall obtain a written determination from the State Lands Commission that:

   a. No state lands are involved in the development; or

   b. State lands are involved in the development, and all permits required by the State Lands Commission have been obtained; or

   c. State lands may be involved in the development, but pending a final determination of state lands involvement, an agreement has been made by the applicant with the State Lands Commission for the project to proceed without prejudice to the determination.

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

9. **As-Built Plans.** Within 60 days following completion of the project, the permittee shall submit as-built plans of the approved seacave/notch infill. In addition, within 60 days following completion of the project, the permittee shall submit certification by a registered civil engineer, acceptable to the Executive Director, verifying the seacave/notch infill has been constructed in conformance with the approved plans for the project.

10. **Removal of Permanent Irrigation.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, a landscape irrigation removal plan for the subject properties at 523 and 525 Pacific Avenue. The plan shall detail the location of all existing permanent irrigation and fully describe the method of removal or capping such that no permanent irrigation features remain in service within 100 feet of the bluff edge. WITHIN 30 DAYS FOLLOWING ISSUANCE OF THE PERMIT, the applicant shall remove or cap all permanent irrigation features from each of the upper blufftop lots, consistent with the approved plans.

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

11. **Condition Compliance**. WITHIN 90 DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions of the subject permit that the applicant is required to satisfy prior to issuance of this permit. WITHIN 60 DAYS OF ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, or within such additional time as the Executive Director may grant for good cause, the applicant shall have completed removal of existing Infill "B" and the portion of existing Infill "C" that is located seaward of the natural bluff (to the maximum extent possible without cutting into terrace deposits/clean sands) in conformance with the approved Final Plans. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

12. **Mitigation for Impacts to Public Access and Recreation and Sand Supply**.

    a. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall provide evidence, in a form and content acceptable to the Executive Director, that the full interim mitigation fee deposit of $31,000, required to address adverse impacts to public access and recreational use, has been deposited in a Shoreline Account established by the City of Solana Beach.

    Within 180 days of the Commission's certification of a final Public Access and Recreation Mitigation Fee Program as part of the City's LCP, the applicant shall

submit to the Executive Director for review and written approval, documentation of the final mitigation fee amount required by the City to address impacts on public access and recreation for the portion of Infill "C" located seaward of the adjacent natural bluff. If the amount differs from the interim amount required above, then the applicant shall submit an application for an amendment to this permit to adjust the mitigation fee to be paid to the City to address adverse impacts to public access and recreational use resulting from Infill "C."

b. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of $4,325 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing the total amount of sand to replace the sand that will be lost due to the impacts of Infill "C" for the initial 20 year period beginning on the building permit completion certification date. All interest earned by the account shall be payable to the account for the purposes stated below.

   The purpose of the account shall be to establish a beach sand replenishment fund to aid SANDAG, or an alternate entity approved by the Executive Director, in the restoration of the beaches within San Diego County. The funds shall be used solely to implement projects which provide sand to the region's beaches, not to fund operations, maintenance or planning studies. The funds shall be released only upon approval of an appropriate project by the Executive Director of the Coastal Commission. The funds shall be released as provided for in a MOA between SANDAG, or an alternate entity approved by the Executive Director, and the Commission, setting forth terms and conditions to assure that the in-lieu fee will be expended in the manner intended by the Commission. If the MOA is terminated, the Executive Director may appoint an alternate entity to administer the fund for the purpose of restoring beaches within San Diego County.

c. Amendment**.** If the Permittee intends to keep the portion of Infill "C" located seaward of a 'stringline' between the adjacent natural bluff in place beyond the initial 20 year period (beginning on the building permit completion certification date), the Permittee must submit a complete CDP amendment prior to the expiration of the 20 year mitigation term proposing mitigation for the coastal resource impacts associated with the retention of the encroachment beyond 20 years and shall include consideration of alternative feasible measures in which the permittee can modify Infill "C" to lessen its impacts on coastal resources. As detailed in Special Condition 2, periodic monitoring reports are required to determine if it is ever feasible in the future to remove all or a portion of Infill "C" that is located seaward of a 'stringline' between the adjacent natural bluff on either end of the infill.

d. Additional Mitigation. If, as a result of the design of the erodible concrete seacave/notch infills or proposed maintenance in the future, monitoring of the infills, as detailed in Special Condition 2, finds that the back of the beach has been effectively fixed and the infills result in impacts similar to those of a

seawall, the Permittee must submit a complete CDP amendment application to address these impacts within 3 months of submission of the monitoring report. At such time, additional sand supply mitigation, additional public access and recreation mitigation, an encroachment agreement with the City, and/or application of LUP policies related to the imposition of an authorization period for the shoreline armoring only so long as it is required to protect the existing bluff top structure may apply.

13. **Reliance on Permitted Armoring.** No future development, (which is not otherwise exempt from coastal development permit requirements), or redevelopment of the existing structure on the bluff top property, shall rely on the permitted bluff retention devices (existing and proposed seacave/notch infills) to establish geologic stability or protection from hazards. Such future development and redevelopment on the site shall be sited and designed to be safe without reliance on shoreline armoring. As used in these conditions, "redeveloped" or "redevelopment" consists of alterations including: (1) additions to an existing structure, (2) exterior and/or interior renovations, (3) and/or demolition of an existing bluff home or other principal structure, or portions thereof, which results in: alteration of 50 percent or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50 percent increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP, as further defined in the Solana Beach LUP, as approved by the Commission.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION/HISTORY

Project Description:

The proposed project involves the repair and expansion of five existing seacave/notch infills. The subject site is located on the bluff top and on the beach approximately 350 feet north of Tide Beach Park in the northern portion of the City of Solana Beach. The seacaves/notches are located at the base of an approximately 65 foot high coastal bluff below one existing bluff top single-family residence and one vacant bluff top lot (Exhibit 1). The proposed infills will have a cumulative length of approximately 92 feet and depths ranging from 3 to 19 feet and will range from 7.8 to 17.5 feet high. The proposed approximately 92 ft. of seacave/notch infill expansion is in addition to the existing approximately 60 ft. of the bluff already covered by seacave infills which were previously approved by the Commission. Thus, a total of approximately 152 ft. of the approximate 215 ft.-long bluff fronting the subject site would be covered by seacave/notch infills. In addition, an existing seacave infill that encroaches on approximately 24 sq. ft. of beach area is proposed to be removed (Exhibit 3) and

approximately 25 sq. ft. of a separate existing seacave infill that encroaches on the public beach is proposed to be removed (Exhibit 6). Exhibit 2 shows the 5 existing seacave infills that were constructed pursuant to CDP Nos. 6-87-391 and 6-91-081 and also shows the proposed seacave/notch infill expansion and maintenance. In addition, the applicant is proposing to resurface two of the existing seacave infills (Infill "A" and Infill "D") with an application of a sculpted and colored aesthetic erodible concrete face (Exhibit 10).

The proposed seacave and notch infill expansions consist of erodible concrete that will be aesthetically colored and sculpted. The infill expansions will be keyed into formational bedrock and will extend vertically up to the dripline of the Torrey Sandstone (Exhibit 11). The proposed seacave/notch infills are designed to match the natural appearance of the surrounding bluffs and to erode at the same rate as the bluffs. The applicant also proposes to remove all permanent irrigation on the bluff top lot and to replace the existing lawn area with artificial turf.

The subject seacave/notch infill maintenance and expansion project has been substantially modified from the project that was approved by the City on October 12, 2011 (ref: City of Solana Beach CUP 17-11-13), prior to applying to the Commission for a CDP. In the project approved by the City, the applicant proposed to construct full strength concrete infills and to anchor the concrete to the bluff with soil nails. The project would have resulted in the de facto creation of a seawall and would not have eroded at the same rate as the adjacent bluff as required by the City's certified Land Use Plan (LUP). In addition, shoreline armoring (aside from seacave/notch infills) is not permitted to protect the blufftop home subject to Special Condition 2a of CDP #6-91-81 which required that the applicant record a deed restriction stating the following:

> *That the landowner not construct any upper or lower bluff stabilization devices, other than the necessary filling of seacaves in the future and the seacave filling approved pursuant to CDP #6-91-81 and any maintenance that may be necessary for these infilled seacaves in the future, to protect the subject single-family residence and/or accessory structures in the event that these structures are subject to damage from erosion, storm wave damage, or other natural hazards in the future.* (Exhibit 12)

The applicant has worked with Coastal Commission staff to modify the proposed project to be consistent with the certified LUP. The applicant now proposes to use only erodible concrete and has provided parameters such that the erodible concrete used will have erosion characteristics similar to that of the existing bluff. The Commission's Coastal Engineer has reviewed the proposed material specifications and concurs with the design parameters.

Site History:

In August of 1987, the Commission approved CDP #6-87-391 for the filling of five seacaves located on the beach below the subject site. The 5 seacaves extended to a depth of up to 75 ft. into the bluff. At that time, a 3,332 sq. ft. single family home, built prior to

the implementation of the Coastal Act, straddled both bluff top lots at 523 and 525 Pacific Avenue. The Commission found that the seacave infills were consistent with Coastal Act Section 30235 and were necessary to provide protection for the existing bluff top structure. However, the Commission also recognized that the seacave infill would potentially have various adverse impacts to natural shoreline processes, including temporarily stopping bluff retreat, steepening the beach profile, and increasing beach erosion adjacent to the concrete infills. Therefore, the seacave infills were proposed and required to be designed with joints which would result in segments of the seacaves breaking off as the surrounding bluff weathered and retreated. However, instead of completely filling the seacaves consistent with the Commission approval, the seacaves were only "plugged;" that is, a void was left behind the plugs. In addition, the fill did not include the required joints (Exhibit 12).

In September of 1988, the Commission approved an amendment to CDP #6-87-391 to delete a special condition of the permit that required dedication of a lateral public access easement between the mean high tide line and the toe of the bluff. The Commission had previously required the lateral public access easement because the City of Solana Beach quitclaimed all City-owned land areas landward of the mean high tide line to the applicant. At the time that the Commission approved CDP #6-87-391, no accurate survey of the bluff or beach had been accomplished to determine the exact location of the lands to be transferred. It appeared that some portion of the formerly public sandy beach area may have been quitclaimed to the applicant. However, a detailed survey was subsequently provided to the Commission that showed that no public sandy beach areas had been deeded to the applicant. The quitclaim only affected the area down to the toe of the bluff and no lands seaward of the toe of the bluff were involved in the transfer of ownership. Given the clarification of the nature of the lands transferred to the applicant and the documentation that there would be no loss of sandy beach area available to the public, the Commission approved the amendment and found that the proposed seacave infills and the land transfer was consistent with all the public access and recreation policies of the Coastal Act, even absent the lateral access dedication.

In July of 1991, the Commission approved CDP #6-91-81 for the demolition of the original home at the subject site and construction of a new 3,135 sq. ft. single family residence on one of the two lots (this home was constructed and currently exists on the subject site) and a boundary adjustment between the two lots. In addition, the Commission approval included the infilling of the seacaves that were previously only "plugged." To infill landward of the previously installed plugs, the applicant bored through the bluff from the bluff top and pumped in concrete fill material (Exhibit 13).

At the time of the Commission action in 1991, the applicant was provided an option of either locating the new home at least 40 feet from the bluff edge or locating the home closer than 40 feet from the bluff edge, subject to special conditions incorporating planned retreat from the bluff edge if the home was threatened by erosion in the future. The applicant chose to site the home 29 feet from the bluff edge and designed the home so that it could be removed if necessary. Conditions of the CDP required, in part, that a deed restriction be recorded against the property requiring, in part:

> "…that *the landowner not construct any upper or lower bluff stabilization devices, other than the necessary filling of seacaves in the future and the seacave filling approved pursuant to CDP #6-91-81 and any maintenance that may be necessary for these infilled seacaves in the future…*"

In addition, the deed restriction requires, in part:

> "*…That in the event the edge of the bluff erodes to within 10 feet of the principal residence permitted herein, the landowner shall be responsible for removal of the principal residence, unless…alternative methods are identified for stabilization…"* [that do not include seawalls or mid and upper bluff walls]

Furthermore, the deed restriction states, in part:

> "*…In no case shall erosion be allowed to proceed to a point in which the herein permitted principal residence…shall be rendered unsafe for occupancy…At that time, a coastal development permit application shall be required from the landowner for the removal of that portion of the residence which has been determined to be unsafe…*"

The area surrounding the site includes both natural bluffs and shoreline protection. Directly adjacent to the subject site to the south at 521 Pacific Avenue is a lower bluff seawall and mid and upper bluff geogrid that was approved by the Commission in 2009 to protect an existing single family home (CDP #6-08-122/Winkler).

Directly adjacent to the subject site to the north at 529 Pacific Avenue, the bluff remains in its natural state and no seacave/notch infills or other forms of shoreline armoring have been approved. Two properties to the north of the subject site at 533 Pacific, the Commission approved the filling of three seacaves at the base of the bluff to protect an existing single family residence (CDP #6-99-091/Becker).

The Commission recently certified the City's Land Use Plan; however, the City of Solana Beach does not yet have a certified Implementation Plan. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the City's LUP used as guidance.

B. GEOLOGIC STABILITY

As described above, the standard of review is Chapter 3 of the Coastal Act, with the City's LUP providing non-binding guidance. As such, applicable Coastal Act policies are cited in this report, as well as relevant LUP policies. Some of the LUP policies cited below are shown as effectively certified in the City's LUP and some of the policies are shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

Section 30235 of the Coastal Act states, in part:

> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply...*

Section 30253 of the Act states, in part:

> *New development shall do all of the following:*
>
> *(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs...*

Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 require that public access and use of the coast shall be maximized, that development shall not interfere with the public's right to access the coast and use of dry sand beaches, and that oceanfront land suitable for recreational activities shall be protected. As stated elsewhere in this report, the physical encroachment of a protective structure on the beach reduces the beach area available for public use and is therefore a significant adverse impact. Furthermore, when the back beach is fixed with a shoreline armoring device, passive erosion is halted and additional public beach area can no longer be created.

> *Section 30210*
>
> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> *Section 30211*
>
> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*
>
> *Section 30212*

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) Adequate access exists nearby, or, (3) Agriculture would be adversely affected. Dedicated accessways shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway. […]

Section 30212.5

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Section 30221

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

In addition, the following certified City of Solana Beach Land Use Plan (LUP) language provides additional guidance regarding geologic hazards and shoreline protection:

Page 13 of the Hazards and Shoreline/Bluff Development chapter states the following, in part:

- *Infill/Bluff Stabilization – Seacave/Notch Infill (See Appendix B Figure 1A) – This first solution is designed to address sea caves and undercut portions of the lower dense sandstone bluff where the clean sand lens is not yet exposed. If left uncorrected, the sea cave/undercut will eventually lead to block failures of the lower sandstone, exposure of the clean sand lens and landward bluff retreat. This failure exposes the clean sand lens of the upper bluff terrace deposits triggering rapid erosion and landward retreat of the upper bluff, which eventually endangers the structures at the top of the bluff. If treated at this stage, the Bluff Retention Device will minimize the need for a future higher seawall and future upper bluff repair. This alternative is not designed as a structural wall, is not reinforced, does not include tiebacks, and uses only erodible concrete which shall erode at the same erosion rate as the surrounding natural bluff material. The infill is required to maintain a textured and colored face mimicking the existing bluff material. Erodible concrete seacave/notch infills are designed to erode with the natural bluff and, when maintained to do so, are not subject to the sand supply mitigation, public access and recreation*

mitigation, encroachment/removal agreement, or authorization timeline policies of the LUP.[1]

Policy 4.18 of the Hazards and Shoreline/Bluff Development chapter states the following:

Policy 4.18: *A legally permitted bluff retention device shall not be factored into setback calculations. Expansion and/or alteration of a legally permitted bluff retention device shall include a reassessment of the need for the shoreline protective device and any modifications warranted to the protective device to eliminate or reduce any adverse impacts it has on coastal resources or public access, including but not limited to, a condition for a reassessment and reauthorization of the modified device pursuant to Policy 4.52.* [2]

The LUP defines Bluff Retention Devices as follows:

Bluff Retention Devices *means a structure or other device, including seacave/notch infills, dripline infill, coastal structures, upper bluff systems, and temporary emergency devices, designed to retain the bluff and protect a bluff home or other principal structure, or coastal dependent use from the effects of wave action erosion and other natural forces.*

The LUP defines Bluff Top Redevelopment as follows:

Bluff Top Redevelopment: *Shall apply to proposed development located between the sea and the first public road paralleling the sea (or lagoon) that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, (3) and/or demolition of an existing bluff home or other principal structure, or portions thereof, which results in:*

(a) Alteration of 50% or more of major structural components including exterior walls, floor and roof structure, and foundation, or a 50% increase in floor area. Alterations are not additive between individual major structural components; however, changes to individual major structural components are cumulative over time from the date of certification of the LUP.

(b) Demolition, renovation or replacement of less than 50% of a major structural component where the proposed alteration would result in cumulative alterations exceeding 50% or more of a major structural component, taking into consideration previous alterations approved on or after the date of certification of the LUP; or an alteration that constitutes less than 50% increase in floor area where the proposed alteration would result in a cumulative addition of

[1] Language shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).
[2] Language shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP. [3]

Policies 4.25, 4.26, and 4.27 of the Hazards and Shoreline/Bluff Development chapter state the following:

Policy 4.25: With respect to bluff properties only, the City will require the removal or capping of any permanent irrigation system within 100 feet of the bluff edge in connection with issuance of discretionary permits for new development, redevelopment, or shoreline protection, or bluff erosion, unless the bluff property owner demonstrates to the satisfaction of the Public Works Director, or the CCC if the project is appealed, that such irrigation has no material impact on bluff erosion (e.g., watering hanging plants over hardscape which drains to the street).

Policy 4.26: Require all bluff property landscaping for new development to consist of native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species.

Policy 4.27: All storm water drain systems that currently drain or previously drained towards the west over the bluff shall be capped. These systems should be redesigned to drain directly, or through a sump system, and then pumped to the street in compliance with SWP 2007-0001 and consistent with SUSMP requirements. This policy shall be implemented as a condition of approval for all discretionary permits issued for bluff properties or within 5 years of adoption of the LCP, whichever is sooner.

Policy 4.47 of the Hazards and Shoreline/Bluff Development chapter states the following:

Policy 4.47: A Seacave/Notch Infill shall be approved only if all the findings set forth below can be made and the stated criteria satisfied.

A. *Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below:*

   1. *The Seacave/Notch Infill is more likely than not to delay the need for a larger coastal structure or upper bluff retention structure, that would, in the foreseeable future, be necessary to protect an existing principal structure, City facility, and/or City infrastructure, from danger of erosion. Taking into consideration any applicable conditions of previous permit approvals for development at the site, a determination must be made based on a detailed alternatives analysis that none of the following alternatives to the coastal structure are currently feasible, including:*

[3] Language shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

- *Controls of surface water and site drainage;*
- *A smaller coastal structure; or*
- *Other non-beach and bluff face stabilizing measures, taking into account impacts on the near and long term integrity and appearance of the natural bluff face, and contiguous bluff properties.*

2. *The bluff property owner did not create the necessity for the Seacave/Notch Infill by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, or by otherwise unreasonably acting or failing to act with respect to the bluff property. In determining whether or not the bluff property owner's actions were "reasonable," the City shall take into account whether or not the bluff property owner acted intentionally, with or without knowledge, and shall consider all other relevant credible scientific evidence as well as relevant facts and circumstances.*

3. *The location, size, design and operational characteristics of the proposed seacave/notch infill will not create a significant adverse effect on adjacent public or private property, natural resources, or public use of, or access to, the beach, beyond the environmental impact typically associated with a similar bluff retention device and the seacave/notch infill is the minimum size necessary to protect the principal structure, and has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts as provided for in this LCP.*

B. *The Seacave/Notch Infill shall be designed and constructed:*

1. *To avoid migration of the Seacave/Notch Infill onto the beach;*

2. *To be re-contoured to the face of the bluff, as needed, on a routine basis, through a CDP or exemption, to ensure the seacave/notch infill conforms to the face of the adjoining natural bluff over time, and continues to meet all relevant aesthetic, and structural criteria established by the City;*

3. *To serve its primary purpose which is to delay the need for a larger coastal structure, and designed to be removable, to the extent feasible, provided all other requirements under the LCP are satisfied; and,*

4. *To satisfy all other relevant LCP and City Design Standards, set forth for Bluff Retention Devices.*[4]

[4] Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

The bluffs in Solana Beach are mostly approximately 80-foot high, and include a "clean sands" lens located between the Torrey Sandstone and Marine Terrace Deposits (at approximately elevation 25-35 ft.). The clean sand layer has been described as a very loose sandy material with a limited amount of capillary tension and a very minor amount of cohesion, both of which cause the sandy material to dissipate easily, making this clean sand layer, once exposed, susceptible to wind-blown erosion and continued sloughing as the sand dries out and loses the capillary tension that initially held the materials together.

When on-going wave action, often exacerbated by a lack of beach sand, results in bluff retreat and erosion, the presence of the clean sands creates a process where the clean sands rapidly undermine the upper sloping terrace deposits causing the upper bluff to collapse, thereby exposing more clean sands to wind erosion which then results in more upper bluff collapses. This cycle can occur so quickly (over months or days, rather than years) that the upper bluff never achieves a stable angle of repose.

The process of undercutting and notching of the bluffs seen along the Solana Beach shoreline represents the natural process of bluff retreat and erosion in this portion of North San Diego County. The process has clearly accelerated in Solana Beach over the last decade as the amount of sand on the beaches has decreased and the bluffs are subject to more frequent wave action. Because all of the bluff top lots in Solana Beach (aside from the vacant lot at 523 Pacific Avenue) are currently developed with single and multi-family structures, there is very little opportunity for the bluffs to retreat without adversely affecting the safety and stability of existing principal structures. Thus, some amount of shoreline protection along much of Solana Beach may be unavoidable. However, the cycle of collapse and retreat can be slowed through the construction of seacave/notch infills.

The geotechnical report submitted by the applicant on April 17, 2012 identifies the following instability concerns to the bluff and the bluff top property at the subject site:

> *"Cave plug-to-bluff contact deterioration has exposed and formed cave voids extending into the bluff face. The potential for collapse of the Torrey Sandstone roof materials followed by undermining and progressive failure of very low cohesion overlying terrace sands exposes the existing home to structural settlement-related damage." (Page 2)*
>
> *"…due to cave formation and collapse processes, bluff face recession is rapid and on the order of 1 foot per year below the subject property. Due to the current degree of overhang and cave re-opening along existing cave plug lateral margins, significant failure events and accelerated upper bluff recession is imminent. Furthermore, due to the re-opening of caves, Torrey Sandstone "roof" collapse and subsequent failure of the overlying low cohesion sands of the Bay Point Formation into the cave void poses a significant threat to the top of bluff top property and home…Should the upper bluff terrace sands fail into the cave void following roof collapse and recede to their natural angle of repose of 45 degrees, the home would be adversely impacted…" (Pages 19-20)*

A subsequent geotechnical memo submitted on April 9, 2013 by the applicant's engineer in response to a Commission staff request for information identifies the following:

> *"The collapse of the outer approximately 10 feet of the sea cave causes an immediate 12 percent reduction in bluff stability, suggesting an immediate failure propagating up to the top of the bluff, and with the likely immediate failure scarp located about 10 feet from the residence, with likely additional failure scarps quickly propagating to within possibly 5 feet of the residence…"*

The submitted geotechnical information attributes the formation of the notch overhangs along this portion of the Solana Beach shoreline to increasing amounts of wave action. The lower bluff along this section of shoreline consists of Torrey Sandstone which is identified as one of the least resistant bedrock formations along the North County coast. As waves impact the Torrey Sandstone, notches are formed creating an overhanging layer of Torrey Sandstone. As the overhang loses support from beneath, its weight along with any structural weakness in the Torrey Sandstone formation eventually leads to a block-like failure. The submitted geotechnical information indicates that these existing overhangs will eventually collapse, undermining the upper bluff and triggering progressive upper-bluff failures.

Since the El Niño Storms of 1997-98, much of this northern portion of the Solana Beach shoreline has experienced the collapse of seacave roof rock and overhang notches. There is currently relatively little sand on the beach, and the bluffs receive near constant wave action. Prior to El Niño, the undercutting that had occurred was slower because the presence of more sand meant the bluffs received less wave action. Collapse of the seacaves or the adjacent overhangs undermine the upper sloping terrace deposits which, in this case, probably include a layer of "clean sands". The predicted collapse of the seacaves has been identified by the applicant's geotechnical report as posing a threat to the existing residential structure. The applicant also contends that the existing notch overhang and eventual resulting block failure, combined with the added factor of a clean sands layer, could result in a threat to the primary structure at the top of the bluff.

The Commission's staff engineer and geologist have reviewed the applicant's geotechnical information and concluded that the seacaves and notches at the subject site pose a significant risk to the stability of the bluff. However, as confirmed by the applicant's geotechnical letter dated April 9, 2013, the failure scarp does not extend as far back as the building footprint and thus the next immediate failure will not threaten the primary structure at 525 Pacific Avenue. Thus, the primary bluff top structure is not in immediate danger from bluff collapse.

In reviewing requests for shoreline protection, the Commission must assess the need to protect private residential development and the potential adverse impacts to public resources associated with construction of shoreline protection. In numerous past actions, the Commission has found that the filling of seacaves or notch overhangs as a preemptive measure has fewer impacts upon coastal resources and public access than the construction

of seawalls and upper bluff structures, which are frequently required to protect existing structures after the collapse of seacaves or other bluff features (6-87-391/Childs; 6-92-82/Victor; 6-96-102/Solana Beach & Tennis Club; 6-97-1646/Lingenfelder; 6-98-25/Stroben; 6-98-29/Bennett; 6-99-091/Beacker; 6-99-103/Coastal Preservation Association; 6-00-066/Pierce & Monroe). Similarly, Policy 4.49 of the City's LUP allows seacave/notch infill projects to be approved, even when an existing principal structure is *not* in imminent danger or meeting the standard for construction of a seawall.

In the case of the proposed project, the filling of the subject seacaves and notches is a preventive measure to stop or reduce the potential for collapses of the overhanging area and to stabilize the bluff in an area where there is evidence of the presence of a "clean sands" lens. Based on information submitted by the applicant, if erosion at the site is not slowed, the existing blufftop structure would be threatened sometime in the future. The proposed project is a relatively minimal type of protection that can be expected to delay the need for a much larger seawall-type of shoreline protection that is far more visually obtrusive, and requires more alteration of the natural landform.

The City's certified LUP allows for the filling of seacaves/notches as a preventative measure. However, although a relatively minimal form of shoreline protection, seacave and notch infills do alter the natural coastline. Therefore, it is important to analyze whether there are alternatives to a seacave/notch fill that would delay the need for a seawall with fewer adverse impacts. The City's certified LUP requires that alternatives such as controls of surface water and site drainage, a smaller coastal structure, and other non-beach and bluff face stabilizing measures be examined.

As detailed above, groundwater controls, irrigation restrictions, and installation of drought-tolerant plantings is required by the City's certified LUP. The applicant has submitted documentation that the subject site already drains towards the street, so that there is currently very little over-bluff discharge. The applicant contends that the upper bluff has only eroded about 2 feet since construction of the home approximately 20 years ago, while the lower bluff has receded as much as 12 feet. Thus, the applicant argues that upper bluff runoff is not the cause of erosion and that stricter irrigation/landscaping controls will not mitigate ongoing enlargement of seacaves/notches. However, the applicant has proposed to remove all permanent irrigation from the two bluff top lots and to replace the existing lawn area with artificial turf, which is consistent with the City's certified Land Use Plan and will reduce the risk of an irrigation pipe bursting and additional bluff failure (Special Condition 10).

Removing the existing bluff top home is another possible alternative. As stated previously, in exchange for allowing the home to be constructed closer to the bluff than 40 feet, the permit for construction of the subject home required the applicant to record a deed restriction mandating that if the bluff eroded to within 10 feet of the home, the applicant would be required to remove the home or identify alternative measures to stabilize the residence that do not include seawalls or mid or upper bluff retaining walls. It further required that if the residence is ever found unsafe for occupancy due to bluff erosion, the portion of the home deemed unsafe would be removed.

However, the applicant was not required to analyze the alternative of removing the home with this application for three reasons. First, the bluff has not eroded to a point within 10 feet of the bluff top home (the current distance between the bluff edge and the home is ~27 ft.) and the home has not been deemed unsafe for occupancy. Therefore, the permit condition requiring removal of the home has not been triggered. Second, a previous Commission permit condition allows "*…necessary filling of seacaves in the future and the seacave filling approved pursuant to CDP #6-91-81 and any maintenance that may be necessary for these infilled seacaves in the future…*" Third, the City's certified Land Use Plan, as recently amended by the Commission, allows for pre-emptive filling of seacaves and notches with erodible concrete. Thus, filling the seacaves on the site is consistent with the previous Commission action and the existing LUP.

Underpinning of the existing home could potentially be considered as an alternative to the proposed project; however, this would not stop the seacaves/notches from collapsing and eventually undermining the home. In addition, when the seacaves and upper bluff eventually collapse, the underpinning system would soon be exposed to view, which is a less-desirable visual condition than the relatively low-scale proposed seacave/notch infill. The eventual exposure of the underpinning in this case would be inconsistent with Coastal Act section 30253 as it would alter the natural landform of the bluff and would essentially create an upper bluff wall.

In this case, given the above-described geological conditions on the subject site, these alternatives would not prevent collapse of the seacaves and notches on the subject site, and thus, would not be feasible alternatives. Thus, there are no less environmentally-damaging feasible alternatives that would delay the need for more substantial shoreline protection. The Commission engineer and geologist concur that the proposed project is the minimal amount of development needed to allow the previously approved seacave infills to function as designed.

In order to minimize and avoid impacts to sand supply, the proposed seacave/notch fills have been designed to erode at a rate similar to the natural bluff face. The applicant's engineer has provided the proposed erodible concrete mix ratio for Commission review (Ref: Page 2 of Project Plans received January 31, 2014). The mix proposed for the erodible concrete is 200 pounds of Type II Portland Cement, along with 180 pounds of Type F fly ash. The applicant's engineer has stated that the mix will have an approximate strength of 500 pounds per square inch (PSI). PSI standards are used to determine minimum strengths and for safety issues. As a reference, standard shotcrete seawalls (such as those seen elsewhere in Solana Beach) typically have a rating of about 3,000 PSI. With erodible concrete infills, the intent is to set a maximum strength ceiling, which is the opposite of what most engineering tries to do. However, the erodible concrete standard, in this case, is an attempt to use a constructible concrete mix that will match, as closely as possible, with the strength and erodibility of the native bluff material and 500 PSI concrete has been identified as a concrete that will be comparable to the native sandstone in the adjacent bluff. This concrete mix will have a higher unconfined compressive

strength than the native material (which has been found to have an unconfined compressive strength between 170 and 300 psi[5]). But, from experience with this mix in other cave fills, it is expected to be suitable for forming into the caves and to provide an acceptable erosive potential.

The Commission's engineer has reviewed the applicant's contentions and concurs that the proposed erodible concrete seacave/notch infills should erode at a comparable rate as the adjacent natural bluff. The four most recent seacave/notch infills in Solana Beach, which used a similar erodible concrete mix as currently proposed appear to be functioning as designed and are not currently encroaching seaward of the adjacent natural bluff (Ref: 6-99-095/City of Solana Beach; 6-00-066/Pierce et. al.; 6-99-103/Coastal Preservation; Association 6-99-091/Becker). Each of the four seacave infill CDPs referenced above required removal of any portion of the seacave infill that encroached more than 6 inches seaward of the bluff as a result of erosion, but no removal has been required thus far. However, in case the mixture proposed herein does not perform as expected, Special Condition 2 of this permit also requires regular monitoring and maintenance of the seacave/notch infills. If monitoring determines that any portion of the infill encroaches seaward of the adjacent bluff, the applicant is responsible to obtain the necessary permits to remove those portions (Special Condition 3). Thus, even if the erodible concrete does not erode at a comparable rate as the adjacent bluff, the encroaching portions of the infill must be removed so that the infill maintains the same stringline as the surrounding bluff material. The performance of these past seacave/notch infills, the opinion of the applicant's professional geotechnical engineer and the Commission's engineer that the infills should erode at the desired rate, and the maintenance conditions of this CDP, provide substantial evidence to support the subject application.

Special Condition 3 also requires the permittee to maintain the seacave/notch infills in their approved state. Minor re-grouting or exempt maintenance as defined by Section 13252 of the California Code of Regulations (i.e., color, texture, etc.) shall not require an additional coastal development permit or amendment. However, whenever changes or maintenance on the seacave/notch are proposed, the applicant must contact the Commission office to determine whether permits are necessary. Thus, the Commission can be assured that, as conditioned, the infill will be properly maintained and will erode or be physically removed at the same rate as the adjacent bluff and that any adverse impacts to shoreline processes have been or will be mitigated.

While the submitted geotechnical report indicates that surface groundwater on the face of the bluff is not a problem in this area of Solana Beach, the failures of irrigation lines or excess watering of the blufftop can trigger collapses of bluff-top sediments. The City's certified LUP recognizes this danger and requires that with the approval of any shoreline

[5] Group Delta Consultants, 1998, "Coastal Development Permit No. 6-97-165, Sea-cave infills, 517-521 Pacific Avenue, Solana Beach, California", 6 p. letter report dated 9 October 1998 and signed by W. F. Crampton (GE 245).

protection permit, irrigation located within 100 feet of the bluff edge must be capped or removed. The City's approval of the subject seacave and notch infills was not conditioned on the removal of any existing blufftop irrigation devices. Therefore, Special Condition 10 has been attached to require the applicant to remove or cap all permanent irrigation devices on 523 or 525 Pacific Avenue to prevent over-watering or accidental breakage of irrigation lines. In terms of landscaping requirements, the certified LUP requires that bluff landscaping for new development consist of native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species. The property at 525 Pacific Avenue was previously conditioned by the CCC pursuant to CDP #6-91-081 to install drought and salt-tolerant plant materials to the maximum extent feasible, while there is currently no landscaping requirement on 523 Pacific Avenue. The property at 525 Pacific Avenue and the adjacent vacant lot at 523 Pacific Avenue are currently landscaped with a large grass lawn. The applicant has proposed to remove all irrigation from the bluff top properties and to install artificial turf covering both properties. In addition, any future applications for new development on either of the subject bluff top properties will be conditioned to require only native, non-invasive, drought-tolerant, fire-resistant, and salt-tolerant species pursuant to the certified LUP.

Although the Commission finds that the seacave/notch infills have been designed to minimize the risks associated with its implementation, the Commission also recognizes the inherent risk of shoreline development. The seacave/notch infills will be subject to wave action and will be at or landward of the drip line of the eroding bluff above the infill. Thus, there is a risk of bluff failure during and after construction of the seacave/notch infill. In addition, there is a risk of damage to the seacave/notch infill or damage to property as a result of wave action on the seacave/notch infills. Given that the applicant has chosen to construct the seacave/notch infills despite these risks, the applicant must assume the risks. Accordingly, Special Condition 5 requires that the applicant assume these risks and waive any claim of damage or liability against the Commission for approval of this application. To ensure that future property owners are properly informed regarding the terms and conditions of this approval, Special Condition 6 requires a deed restriction to be recorded against the property involved in the application. Special Conditions 7 requires the applicant to submit a copy of any required permits from the State Lands Commission, to ensure that no additional requirements are placed on the applicant that could require an amendment to this permit.

Section 30253 requires that new development be independently stable and safe and not require the construction of protective devices that alter the natural landform of the bluffs. In addition, Policy 4.18 of the City's approved LUP requires that existing legally permitted bluff retention devices not be factored into setback calculations for new development or redevelopment of bluff top properties. Such future development must be located in an area where the development is consistent with Coastal Act and/or applicable LCP requirements regarding geologic safety and protection from hazards as if the protection did not exist. Thus, Special Condition 13 prohibits future development and redevelopment of the bluff top site from relying on the existing and proposed shoreline protection for stability.

Special Condition 13 also defines "redevelopment" pursuant to the City's LUP, which defines redevelopment as alterations, including additions, exterior or interior renovations, or demolition that results in a 50 percent or greater alteration of a major structural component (including exterior walls, floor and roof structures, and foundation) or a 50 percent increase in floor area, cumulatively over time on or after certification of the City's LUP. Furthermore, changes to major structural elements are not additive between individual elements, while alterations to individual major structural elements are cumulative. Thus, if in the future, the applicant proposed to modify 40% of the exterior walls and 30% of the roof structure; this would not be considered redevelopment because it relates to two different major structural components. However, if the applicant were to come back for a subsequent CDP to modify an additional 10% of the exterior walls or an additional 20% of the roof structure, the project would be considered redevelopment because it would result in a cumulative alteration to 50% of a major structural component. Additions are also cumulative over time, such that an initial 25% addition would not be considered redevelopment; but a subsequent 25% addition would result in a cumulative 50% increase in floor area, and would thus constitute redevelopment.

In summary, given the amount of coastal erosion which has occurred in the area over the last several years, Solana Beach is currently faced with the possibility of armoring the entire shoreline north of Fletcher Cove with seawalls. The subject site is an area where preventive measures such as the subject seacave and notch infills represent a feasible alternative to a seawall. The proposed project will delay or prevent the subject seacaves/notches from collapsing, which could result in eventual damage to the existing home. In addition, as infill of the seacaves will reduce the potential for a significant bluff failure, the applicant, the City and the region as a whole will have more time to pursue other non-structural methods, such as beach replenishment and moving the line of bluff top development landward away from the bluff edge, to protect the bluffs and delay the need for more substantial shoreline protection. Mitigation measures to reduce potential impacts on sand supply, public access, public recreation, and visual quality have been incorporated into the project as conditioned. Therefore, the Commission finds that approval of the proposed seacave/notch infills is consistent with the long-term goals of Sections 30235 and 30253 of the Coastal Act regarding the protection of natural shoreline processes, natural landforms and local shoreline sand supply.

C. VISUAL RESOURCES

Sections 30240, 30250 and 30251 of the Coastal Act require that the scenic and visual qualities of coastal areas be protected, that new development adjacent to park and recreation areas be sited so as to not degrade or impact the areas and that new development not significantly adversely affect coastal resources:

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.

Section 30250 (a)

a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

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.

In addition, the following certified City of Solana Beach LUP language, although not the standard of review, can provide pertinent information and guidance regarding the protection of coastal zone visual resources:

Policy 4.29*: Limit buildings and structures on the sloped face and toe of the bluff to lifeguard towers, subsurface public utility drainage pipes or lines, bluff retention devices, public stairs and related public infrastructure which satisfy the criteria established in the LCP. No other permanent structures shall be permitted on a bluff face. Such structures shall be maintained so that they do not contribute to further erosion of the bluff face and are to be visually compatible with the surrounding area to the maximum extent feasible.*

Policy 4.37*: Maximize the natural, aesthetic appeal and scenic beauty of the beaches and bluffs by avoiding and minimizing the size of bluff retention devices, preserving the maximum amount of unaltered or natural bluff face, and minimizing encroachment of the bluff retention device on the beach, to the extent feasible, while ensuring that any such bluff retention device accomplishes its intended purpose of protecting existing principal structures in danger from erosion.*

The proposed development is located on the face of a coastal bluff at or landward of the drip line and at the same level as the existing sandy beach. Seacaves and notch infills have been a fairly prominent feature of the shoreline in this area, and filling the cave and notch overhangs will alter the natural appearance of the bluffs. Matching infill material to the appearance of natural bluffs can be a challenging process and it can be difficult to tell at the time of application how well the infill material will blend into the surrounding natural bluffs. Another difficulty is that weathering can change the appearance of the seacave/notch infills. Thus, even if the infills match the natural bluffs closely one year, several years later there may be a distinct difference in appearances. Furthermore, the erodible concrete mix proposed by the applicant can be more difficult to treat aesthetically than full strength concrete, due to the nature of erodible concrete. However, erodible concrete infills constructed in Solana Beach have been asthetically treated to reasonably match the appearance of the adjacent bluffs. To address the difficulties of aesthetically treating erodible concrete, the applicant proposes to use a pre-constructed form for the face of the infills and, to the extent possible, add some irregularities in the forms to avoid a perfectly planar surface. Once the concrete takes its initial set, the time of which will be determined by the contractor, the forms would be stripped and the surface then texturized and ultimately colored to create a naturalized face to blend in with the adjacent coastal bluff.

Special Condition 1 requires the applicant to submit final plans of the method chosen to color and texturize the infill material, with a color board indicating the color of the infill material. Special Condition Nos. 2 & 3 require the applicant to monitor and maintain the color of the infill to ensure the material continues to blend in with the surrounding bluffs in the future. Special Condition 9 also addresses this concern and requires the applicant to submit as-built plans within 60 days of construction of the proposed development to assure the infill has been constructed according to the approved plans.

There are numerous seacave and notch infills along the bluffs in Solana Beach. These infills, while mostly visible, are relatively inconspicuous and do not represent a significant visual blight. In addition, at times when the sand levels are high, these infills may not be visible. The appearance of the proposed project would be consistent with the various existing infills located in the bluffs along the Solana Beach coast. Seacave and notch infills are considerably less visually prominent than traditional seawall projects or riprap revetments. Thus, although the project will have an adverse impact on the appearance of the bluffs, the project has been designed and conditioned to match the surrounding natural bluffs to the maximum extent feasible, thereby reducing potential negative visual impacts to the maximum extent feasible. Therefore, the Commission finds that the subject development is consistent with the visual resource policies of the Coastal Act.

D. PUBLIC ACCESS

Pursuant to Section 30604 (c), the Coastal Act emphasizes the need to protect public recreational opportunities and to provide public access to and along the coast. As previously referenced in the Geologic Conditions and Hazards section of this staff report,

Coastal Act Sections 30210, 30211, 30212, 30212.5, and 30221 are also applicable to the proposed development and the protection of public access to the coast.

The City's LUP polices, as approved by the Commission, related to public access state:

> ***Policy 4.49:*** *The bluff property owner shall pay for the cost of the coastal structure or Infill and pay a Sand Mitigation Fee and a Public Recreation Fee per LUP Policy 4.38. These mitigation fees are not intended to be duplicative with fees assessed by other agencies. It is anticipated the fees assessed as required by this LCP will be in conjunction with, and not duplicative of, the mitigation fees typically assessed by the CCC and the CSLC for impacts to coastal resources from shoreline protective devices.*
>
> *Sand Mitigation Fee - to mitigate for actual loss of beach quality sand which would otherwise have been deposited on the beach. For all development involving the construction of a bluff retention device, a Sand Mitigation Fee shall be collected by the City which shall be used for beach sand replenishment and/or retention purposes. The mitigation fee shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing sand to replace the sand that would be lost due to the impacts of any proposed protective structure. The methodology used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix A. The funds shall solely be used to implement projects which provide sand to the City's beaches, not to fund other public operations, maintenance, or planning studies.*
>
> *Sand Mitigation Fees must be expended for sand replenishment and potentially for retention projects as a first priority and may be expended for public access and public recreation improvements as secondary priorities where an analysis done by the City determines that there are no near-term, priority sand replenishment Capital Improvement Projects (CIP) identified by the City where the money could be allocated. The Sand Mitigation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.*
>
> *Public Recreation Fee – Similar to the methodology established by the CCC for the sand mitigation fee, the City and the CCC are jointly developing a methodology for calculating a statewide public recreation fee. To assist in the effort, the City has shared the results of their draft study with the CCC to support their development of a uniform statewide Public Recreation / Land Lease Fee. Until such time as an approved methodology for determining this fee has been established, and the methodology and payment program has been incorporated into the LCP through an LCP amendment, the City will collect a $1,000 per linear foot interim fee deposit. In the interim period, CCC will evaluate each project on a site-specific basis to determine impacts to public access and recreation, and additional mitigation may be required. The City shall complete its public recreation/land lease fee study within 18 months of effective certification of the LUP.*

Project applicants have the option of proposing a public recreation/access project in lieu of payment of Public Recreation Fees (or interim deposits) to the City. At the City's discretion, these projects may be accepted if it can be demonstrated that they would provide a directly-related recreation and/or access benefit to the general public.

Public Recreation Fees must be expended for public access and public recreation improvements as a first priority and for sand replenishment and retention as secondary priorities where an analysis done by the City determines that there are no near-term, priority public recreation or public access CIP identified by the City where the money could be allocated. The Public Recreation funds shall be released for secondary priorities only upon written approval of an appropriate project by the City Council and the Executive Director of the Coastal Commission.[6]

Policy 4.38: *Provide for reasonable and feasible mitigation for the impacts of all bluff retention devices which consists of the payment of Sand Mitigation Fees and Public Recreation Fees to the City or other assessing agency.*

The subject project is located on the bluff formation directly adjacent to a public beach. Although public lateral access is available along the entire stretch of coastline in this area, mostly at low tides, vertical access is available only at a limited number of public accessways. Because of the nature of the topography of the area, with steep, fragile coastal bluffs between the first public roadway and the coastline, and the existing, highly developed pattern of development, the provision of additional vertical public access is not practical at this time. In addition, there is an existing public beach access approximately 350 feet south of the subject site at the Tide Beach Park. The proposed seacave and notch fills will not impact this vertical accessway.

Shoreline protection projects do have the potential to impact existing lateral access along the beach. Structures which fix the back of the beach stop the landward migration of the beach profile while the seaward edge continues to erode, thereby reducing the amount of dry sandy beach available to the public. However, the proposed seacave/notch infill maintenance and expansion project has been designed to erode at a comparable rate as to natural bluff and is not predicted to impact available beach area in the future. The Commission has not typically require the payment of funds to mitigate for the public access and recreation impacts of erodible concrete seacaves in Solana Beach because they do not have the same type of adverse impacts that other types of shoreline armoring do. Specifically, because seacave and notch overhang infills are set within the bluff face, unlike seawalls, the infills do not result in an immediate loss of usable beach area through encroachment. In addition, there is no passive erosion loss because the back of the beach is not permanently fixed as a result of the erodible mixture used in seacave/notch infill construction. However, if not properly constructed and maintained, seacave infills can have an adverse impact on coastal resources if they do fix the back of the beach. As described above, special conditions require monitoring of the infills to make sure they are

[6] Policy shown as modified by a Land Use Plan amendment approved by the Commission on January 9, 2014 (but not yet formally accepted by the City).

eroding as designed, and removal of any portion of the fill that does not erode. Furthermore, if monitoring reveals that the seacave/notch infills have fixed the back of the beach (either through design or through maintenance) and thus resulted in similar impacts to sand supply and public access as a seawall, Special Condition 12 requires that within 3 months of submission of the monitoring report, the applicant must submit a complete CDP application to the Commission to mitigate for any unmitigated impacts. Mitigation may include additional sand supply mitigation, additional public access and recreation mitigation, an encroachment agreement with the City, and/or enactment of the authorization timeline policies of the LUP that would require the proposed seacave/notch infills only be authorized so long as they are required to protect the existing bluff top structure.

The applicant is proposing to remove existing seacave Infill "B," which is no longer connected to the bluff (Exhibit 3). Infill "B" currently covers approximately 24 sq. ft. of beach area. Removal of this infill will result in additional beach area for the public, although removal should have been undertaken many years ago, as required by the permit for initial construction of the seacave infills at the subject site.

A portion of existing seacave Infill "C" is protruding approximately 7 ft. seaward of the adjacent bluff on either side (Exhibit 4-5). At medium and high tides, this protrusion has the potential to adversely impact lateral access along the shoreline, which will be exacerbated as the adjacent bluff continues to erode landward, if the protrusion is not removed. The applicant has proposed to remove approximately 25 sq. ft. of the portion of Infill "C" that encroaches on the public beach (Exhibit 6).

The project proposed by the applicant and approved in CDP #6-87-391 required that the seacave infills were to be constructed with joints that would allow the infill to break off as the adjacent natural bluff eroded landward. As detailed in the project history section of this staff report, the permittee did not construct the seacave infills consistent with the Commission's approval and instead only plugged the openings to the seacaves. Had the permittee constructed the seacave infills with joints in the concrete, as originally proposed, the seacave infill would break apart as the bluff eroded landward, and the debris could be easily removed from the beach. Thus, had the applicant constructed the seacave infill as originally proposed and permitted, it is likely that Infill "C" would not be encroaching on the public beach at this time.

Special Condition #3 of CDP #6-87-391 states:

> *3. Storm Design and Debris Removal. Prior to the transmittal of the coastal development permit, the applicant shall submit certification by a registered civil engineer that the proposed seacave filling is designed to withstand storms comparable to the winter storms of 1982-83. The applicant shall be responsible for the removal of debris that is deposited on the beach or in the water during construction of the shoreline protective device or as a result of the failure of the shoreline protective device.*

Page 9 of the findings for CDP #6-87-391 state, in part:

> *…The attached special condition #3 requires the applicants to accept maintenance responsibility for the permitted seacave filling in the event that improper construction or normal weathering causes debris to become dislodged onto the beach or erosion around the cave results is [sic] a segment of the concrete plug to be dislodged onto the beach, thus impeding public access. The seacave fill material is designed with joints which will result in segments of the concrete fill breaking off as the surrounding bluff weathers and retreats, resulting in inevitable rubble deposited on the beach…*

Ideally, the entire portion of Infill "C" located seaward of the natural bluff would be removed. The intent of allowing the infill originally was to prevent large seacave collapses, while still allowing the bluff to retreat landward through the natural weathering process (Exhibit 12). Special conditions on the project specifically require that the applicant remove debris deposited on the beach as a result of the failure of the seacave infills or materials that become dislodged from the seacave infills through weathering and impair public access. Thus, it was clearly the understanding of the Commission when the CDP was approved that the seacave infills would result in portions of the seacave infills segmenting off the existing infill as they extended past the face of the bluff and the resulting debris would then need to be removed from the beach.

However, the applicant has demonstrated that the portion of Infill "C" which encroaches seaward of the adjacent bluffs cannot be completely removed without cutting into the terrace deposits/clean sands. The Commission geologist has recently visited the subject site and concurs that complete removal of Infill "C" would result in the removal of some amount of terrace deposits/clean sands and could result in the destabilization of the coastal bluff. Therefore, Special Condition 1 requires that Infill "C" be removed to the maximum extent possible without cutting into terrace deposits/clean sands. Exhibit 6 has been prepared by the applicant to show the portion of Infill "C" that can be removed at this time.

There is a possibility that changes to the coastal bluff at the subject site may occur between Commission action on the subject CDP and final issuance of the subject CDP. Therefore, Special Condition 1 requires the applicant to submit final project plans prior to issuance of the CDP, prepared by an appropriately licensed professional and subject to the review and approval of the Executive Director, demonstrating the maximum portion of Infill "C" that can be removed without cutting into terrace deposits/clean sands.

As proposed by the applicant, a relatively small quantity of natural Torrey sandstone bluff material located above the concrete infill "C" proposed for removal will be removed in order to allow the maximum amount of existing concrete to be removed from the beach. Allowing removal of natural bluff material is atypical; policies of the City's certified LUP require that alteration of the natural bluffs be minimized. However, the Commission's geologist and engineer have reviewed the site plans and current site photographs and they concur that the minor amount of natural material being removed will not destabilize the coastal bluff. In this particular situation, the removal of natural

bluff material is not prohibited by the LUP or the Chapter 3 policies of the Coastal Act because it is being done in connection with removal of development that was not properly constructed and is currently encroaching on public beach.

The proposed project also involves expanding the existing Infill "C" with erodible concrete infill on either side of the encroachment. As with the rest of the proposed seacave infill, additional infill is necessary in this location to prevent or delay a more catastrophic bluff collapse in the future. However, the proposed expansion will extend the life of the existing non-erodible seacave infill, thus resulting in greater and continued impacts to coastal resources. The City's certified LUP typically requires that applicants execute an Encroachment Agreement approved by the City when coastal structures are proposed to be built on the public beach. An Encroachment Agreement would recognize that the coastal structure is located on public property and that the City may require that the structure be removed at any time. However, as detailed above, Infill "C" was not constructed as previously approved by the Commission and the portion seaward of the adjacent natural bluff is required to be removed when feasible to do so. Thus, an encroachment agreement with the City is not necessary in this case.

There are three major components that the Commission has historically analyzed when determining impacts on public access.

- ***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, etc. 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 in Solana Beach where average annualized bluff erosion rates are best estimated at 0.15 to 0.47 feet per year (Benumof and Griggs, 1999). However, as previously indicated, this is an average annualized rate; actual erosion is more episodic, and can increase dramatically as a result of winter storm events and sections of bluff material can slough several feet at a time. This erosion rate may be re-evaluated at a future date. This sandy beach material is carried off and redistributed through wave action along the shoreline and serves to nourish the beaches.

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; (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 bluff material that would have been supplied to the littoral system if the back-beach or bluff were to erode naturally to renourish beach areas nearby with eroded bluff material.[7]

- **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 the privatization of the public beach and a loss of space in the public domain such that the public can no longer access that public space. The encroachment also results in 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. 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, Infill "C" and the additional concrete infill adjacent to Infill "C" result in the coverage of approximately 85 sq. ft. of sandy beach area.

- **Fixing the back beach**

Coastal shoreline experts generally agree that where the shoreline is eroding and armoring is installed, the armoring will eventually define the boundary between the sea and the upland. 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

[7] 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.

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 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 by as much as 5.5 feet by the year 2100)[8]. Mean sea level affects shoreline erosion in 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, leading to a faster loss of the beach 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 passive erosion impacts of the seawall, or the long-term loss of beach due to fixing the back beach, 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.[9] In this case, Infill "C" and the proposed new infill adjacent to Infill "C" result in 26 linear feet of bluff fronted by the shoreline armoring[10]. 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 area affected by passive erosion can be approximated by multiplying the 26 linear feet of bluff, by the annual expected erosion rate. The applicant's geotechnical consultant estimated the average bluff recession for this site at 0.3 feet per year. Assuming an erosion rate of 0.3 feet per year, every year that the seawall extension is in place would, on average, result in a loss of 7.8 sq. ft. of beach that would have been created if the back beach had not been fixed by the seawall.

[8] The 2012 National Research Council's Report, Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future, is currently considered the best available science on sea-level rise for California. The NRC report predicts that for areas south of Cape Mendocino, sea level may increase between 16.56 and 65.76 inches between 2000 and 2100 (NRC, 2012).

[9] 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.

[10] The distance used in this case (26 ft.) is a straight line between the northern and southern edges of the infill and is thus smaller than the distance used to determine the deposit (31 ft.).

- **Retention of Potential Beach Material**

If natural erosion were allowed to continue (absent shoreline armoring structures), 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 Infill "C" had been constructed as approved.

Mitigation Measures

When shoreline protection cannot be avoided and have been reduced to the maximum extent feasible, mitigation for any remaining adverse impacts of the development on access and public resources is required. When physical impediments adversely impact public access and create a private benefit for the property owners, the Commission has found in numerous cases that a public benefit must arise through mitigation conditions in order for the development to be consistent with the access policies of the Coastal Act, as stated in Sections 30210, 30211, and 30212 (see 4-87-161/Pierce Family Trust & Morgan, 6-87-371/Van Buskirk, 5-87-576/Miser and Cooper, 3-02-024/Ocean Harbor House, 6-05-72/Las Brisas, 6-07-133/Li, 6-07-134/Caccavo, 6-03-33-A5/Surfsong, 6-08-73/DiNoto, et.al, 6-08-122/Winkler, 6-09-033/Garber et. al., 6-13-025/Koman et. al.).

Using the Commission sand supply mitigation formula, over the course of the 20 year sand supply mitigation period, Infill "C" results in the retention of about 265.5 cubic yards of beach quality sand. At estimated sand cost of $16.29 per cubic yard (provided by the applicant, and based on three estimates from local contractors); this sand would have a value of $4,325 (Exhibit 8)[11].

However, in addition to the quantitative impacts from seawalls, there are qualitative social benefits of beaches (recreational, aesthetic, habitat values, etc.). Beaches also provide significant direct and indirect revenues to local economies, the state, and the nation. The loss of sandy beach area in an urban area such as Solana Beach represents a significant impact to public access and recreation, including a loss of the social and economic value of this recreational opportunity. The question becomes how to adequately mitigate for these qualitative impacts on public recreational beach use and in particular, how to determine a reasonable value of this impact to serve as a basis for mitigation, when the impacts are on-going over time.

[11] The total volume of sand has been reduced by 16.2 cu. yds. to account for sand that had previously reached the public beach when the seacave was originally formed (Exhibit 9).

Appropriate mitigation for the adverse impacts of Infill "C" would be creation of additional public beach area in close proximity to the impacted beach area. However, all of the beach areas in Solana Beach are already in public ownership, and there is no private beach area available for purchase. Nor is there a source of extra beach land that could be used to add new land area to the littoral cell. In recent years, the Commission has sought additional ways to quantify the adverse impacts to public access and recreation that result from shoreline protective devices and, thereby, develop more appropriate mitigation for those impacts. In June of 2007, the City of Solana Beach adopted an interim in-lieu fee program to mitigate the adverse impacts associated with shoreline devices (Ref. Resolution 2007-042, City of Solana Beach). The program has been designed as "interim" until the City completes, and the Commission certifies as part of an LCP, a more precise way to determine impacts to public access and recreation from shoreline armoring. As such, the City's program requires a $1,000.00 per linear foot fee be assessed in the interim and requires an applicant to agree to modifications to the fee once the economic study is complete and certified and a more site specific fee is assessed. The monies collected through the mitigation program will be directed for City use for public access and recreational projects.

The Commission recently certified the City's Land Use Plan. The City's mitigation program to address impacts to public access/recreation will be reflected as part of a future LCP amendment, which will be reviewed by the Commission. The City's mitigation program will address appropriate mitigation for both new applications for shoreline armoring and for existing shoreline armoring that has not fully mitigated for its impacts to coastal resources (while taking into consideration previous mitigation payments).

Special Condition 12 requires that the applicant make a deposit into the interim public access and recreation fee program adopted by the City of Solana Beach that addresses impacts of shoreline devices on public access and recreation. As depicted in Exhibit 7, Infill "C" results in 31 linear feet of encroachment and therefore will be required to make a deposit of $31,000. In addition, Special Condition 12 requires the applicant to submit an application for an amendment to this permit to the Commission if the final mitigation fee certified as part of the LCP is different than the interim deposit. The Commission's acceptance, in this case, of the applicant's proposed mitigation for the loss of public access and recreational opportunities associated with the subject seawall should not be seen as Commission approval of a final mitigation plan. The appropriateness of any reduction or increase in the fee amount will be addressed by the Commission at that time to assure compliance with the Coastal Act and the City's LCP.

Conclusion

In summary, direct encroachment of Infill "C" results in an immediate loss 85 square feet of beach area, 7.8 sq. ft. per year of beach area will be "lost" annually through passive erosion due to fixing the back beach, and 265.5 cubic yards of sand will be retained behind the infill over a 20-year period.

The project's direct encroachment and passive erosion sand retention impacts translate directly into a loss of sand on the public beach. The sand mitigation fee required in this case serves as mitigation of the proposed project's adverse impacts on shoreline sand supply. As discussed above, the beach area itself and degradation of public access to and along the beach that would be impacted due to encroachment (85 sq. ft.) and passive erosion (7.8 sq. ft. per year) is mitigated through the City's interim in-lieu deposit fee, which requires the applicant to pay an interim deposit fee of $31,000 pursuant to Special Condition 12. Although the applicant did not include payment of the mitigation fees for Infill "C" in the proposed project description, the applicant has indicated he is in agreement with the required fees and provided the mitigation calculations used in this analysis.

To assure that Infill "B" and the portion of Infill "C" proposed to be removed are in fact removed in a timely manner, Special Condition 11 has been attached to require the applicant to comply with all Special Conditions of approval within 90 days of Commission action or within such additional time granted by the Executive Director for good cause and to require that the applicant remove the infills encroaching seaward of the natural bluff within 60 days of issuance of this CDP or within such additional time granted by the Executive Director for good cause.

Special Conditions 2 and 3 ensure that regular monitoring will be conducted and that if any portion of an existing infill or the proposed infill expansions do not erode landward, as designed, and encroach onto the public beach, that the encroaching portions will be removed. These conditions are necessary to ensure that the seacave fills do not encroach onto the public beach in the future.

The beach area fronting the subject site is a public resource. Much of the beach is accessible in this area only at lower tides, and thus, the protection of beach along the toe of the bluff is still important. This stretch of beach has historically been used by the public for access and recreation purposes. Special Condition 8 acknowledges that the issuance of this permit does not waive the public rights that exist on the property. The use of the beach or public parking areas for staging of construction materials and equipment also adversely impacts the public's ability to gain access to the beach. Special Condition 4 prohibits the applicant from storing vehicles on the beach overnight, using any public parking spaces within the Fletcher Cove Parking Lot for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in the parking lot.

Special Condition 4 also prohibits construction on the sandy beach during weekends and holidays and between Memorial Day to Labor Day of any year. Except for minor exempt maintenance as defined by Section 13252 of the California Code of Regulations, any other work will require an amendment to this permit or a new coastal development permit (Special Condition 3).

Therefore, as conditioned, the Commission finds that the subject proposal will not result in any significant adverse impacts on beach access or public recreation consistent with

Sections 30210, 30211, 30212.5, 30221, 30223 and 30252, pursuant to Section 30604(c) of the Coastal Act.

E. LOCAL COASTAL PLANNING

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

The Commission has recently approved the City's Local Coastal Program Land Use Plan. In addition, the Commission recently approved an amendment to the LUP to modify some of the key provisions relating primarily to bluff top development and shoreline protection, including policies related to erodible concrete seacave/notch infills. The recently approved LUP amendment found, in part, that erodible concrete seacave/notch infills are not subject to the sand supply mitigation, public access and recreation mitigation, encroachment removal agreement, or authorization timeline policies of the LUP. The construction of a seacave/notch infill will help to prevent catastrophic bluff failure, but will still allow the bluff to erode landward. Seacave/notch infills are designed to erode at the same rate as the adjacent natural bluff, thus there are no anticipated impacts to sand supply or to public access and recreation. Furthermore, since seacave/notch infills are designed to erode at the same rate as the natural bluff, if they function as designed, there will not be a need to physically remove the entire fill, and thus encroachment removal agreements and time limits for authorization are not needed. The City has not yet accepted the Commission's modifications to the LUP amendment. In addition, the City has not yet completed, nor has the Commission reviewed any implementing ordinances. Thus, the City's LCP is not certified.

The location of the proposed bluff retention device is designated for Open Space Recreation in the City of Solana Beach LUP. As conditioned, the subject development is consistent with these requirements. Based on the above findings, the proposed development is consistent with the Chapter 3 policies of the Coastal Act in that the need for the shoreline protective devices has been documented and its adverse impacts on beach sand supply and on adjacent unprotected properties will be mitigated.

Therefore, the Commission finds the proposed development, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act, and will not prejudice the ability of the City of Solana Beach to complete a certifiable local coastal program.

F. CONSISTENCY WITH THE 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 that the activity may have on the environment.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The preceding coastal development permit findings in this staff report have discussed the relevant coastal resource issues with the proposal, and the permit conditions identify appropriate mitigations to avoid and/or lessen any potential for adverse impacts to said resources. The Commission incorporates these findings as if set forth here in full.

As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as conditioned, would have on the environment within the meaning of CEQA. Thus, if so conditioned, 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).

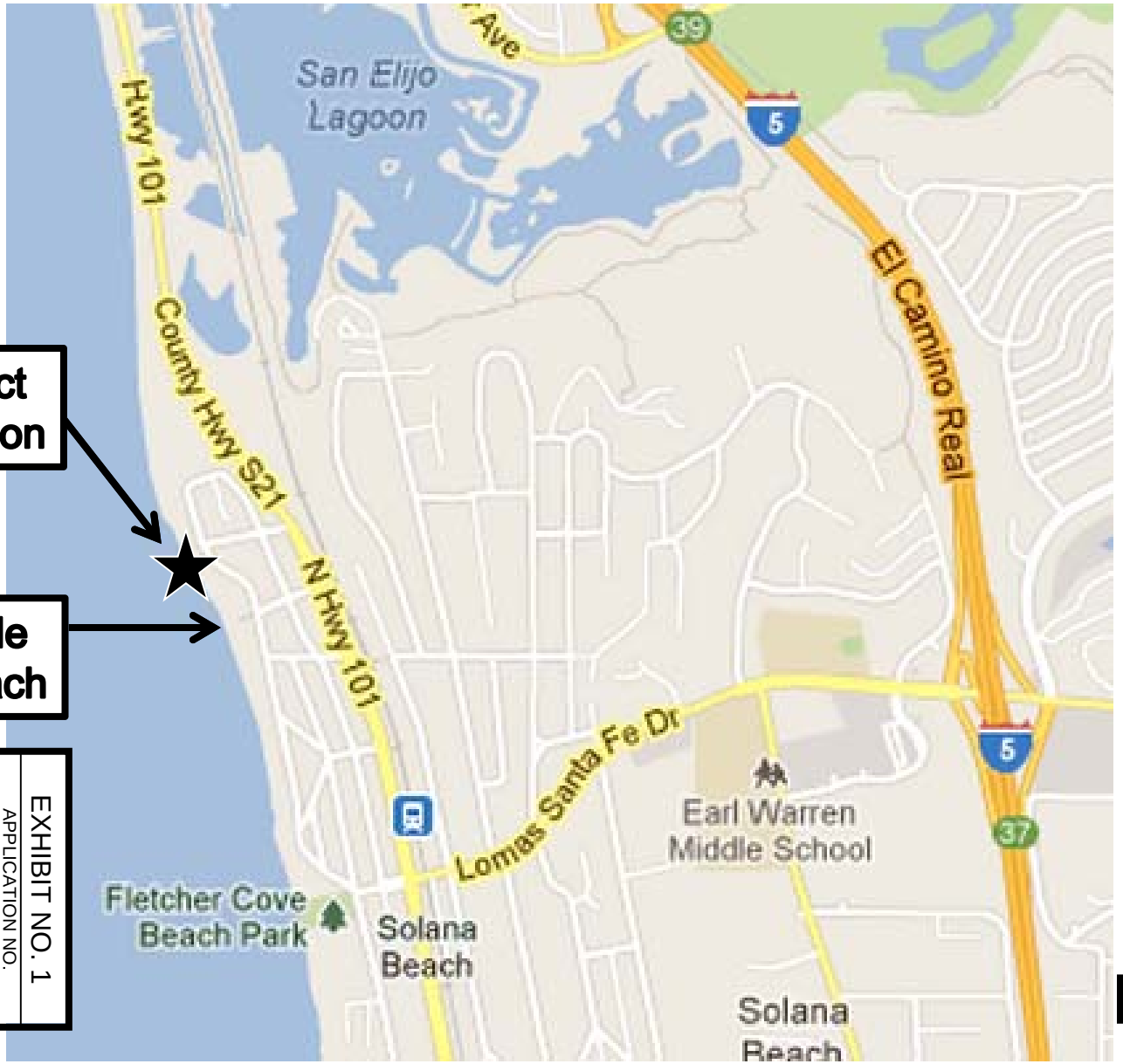
(Z:\MSWord\Th14a-6-2014.docx)

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

- City of Solana Beach certified LUP
- City of Solana Beach General Plan and Zoning Ordinance
- City of Solana Beach Resolution 2011-139 approved October 12, 2011
- Landscaping plans by David Reed Landscape Architects, dated January 10, 2014
- Project plans by Soil Engineering Construction, Inc., received January 31, 2014
- Project plans by Soil Engineering Construction, Inc., received April 9, 2014
- Bluff Face Stability and Cave Maintenance Investigation and Geologic Reconnaissance by Geotechnical Exploration, Inc., dated March 24, 2011 and revised July 26, 2011
- Coastal Erosion Study Sea-Cave/Notch Infill Geotechnical Report by TerraCosta Consulting Group, dated April 10, 2013
- CDP Nos.: 6-87-391/Childs, 6-91-081/Bannasch, 6-97-165-G/Lucker and Wood, 6-97-165/Lucker and Wood, 6-92-82/Victor; 6-96-102/Solana Beach & Tennis Club; 6-97-1646/Lingenfelder; 6-98-25/Stroben; 6-98-29/Bennett; 6-99-091/Beacker; 6-99-103/Coastal Preservation Association; 6-00-066/Pierce & Monroe
- LCPA #SOL-MAJ-1-13

PROJECT LOCATION



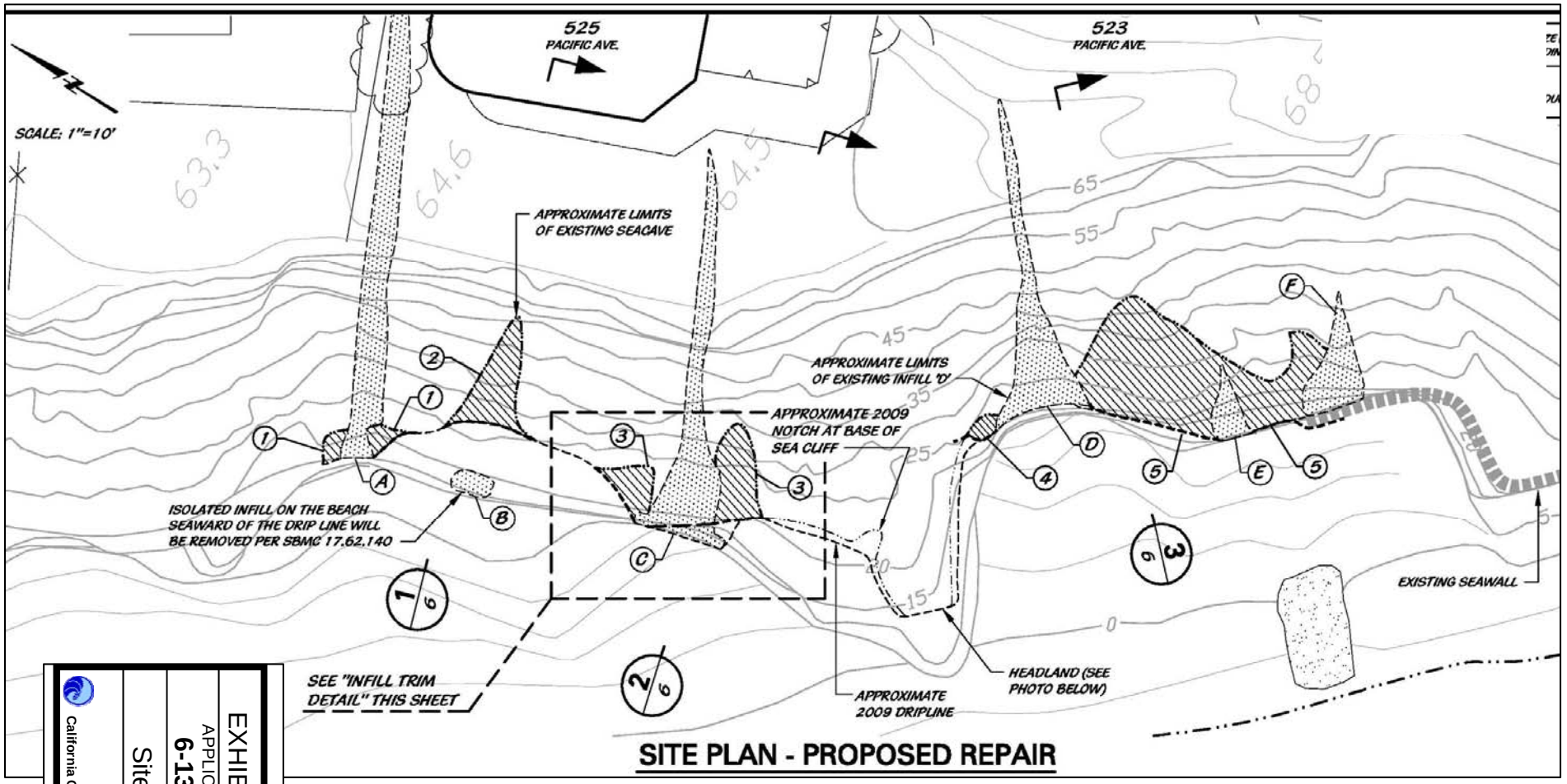
California Coastal Commission

EXHIBIT NO. 1

APPLICATION NO. **6-13-0948**

Project Location

PROPOSED SITE PLAN



California Coastal Commission

EXHIBIT NO. 2

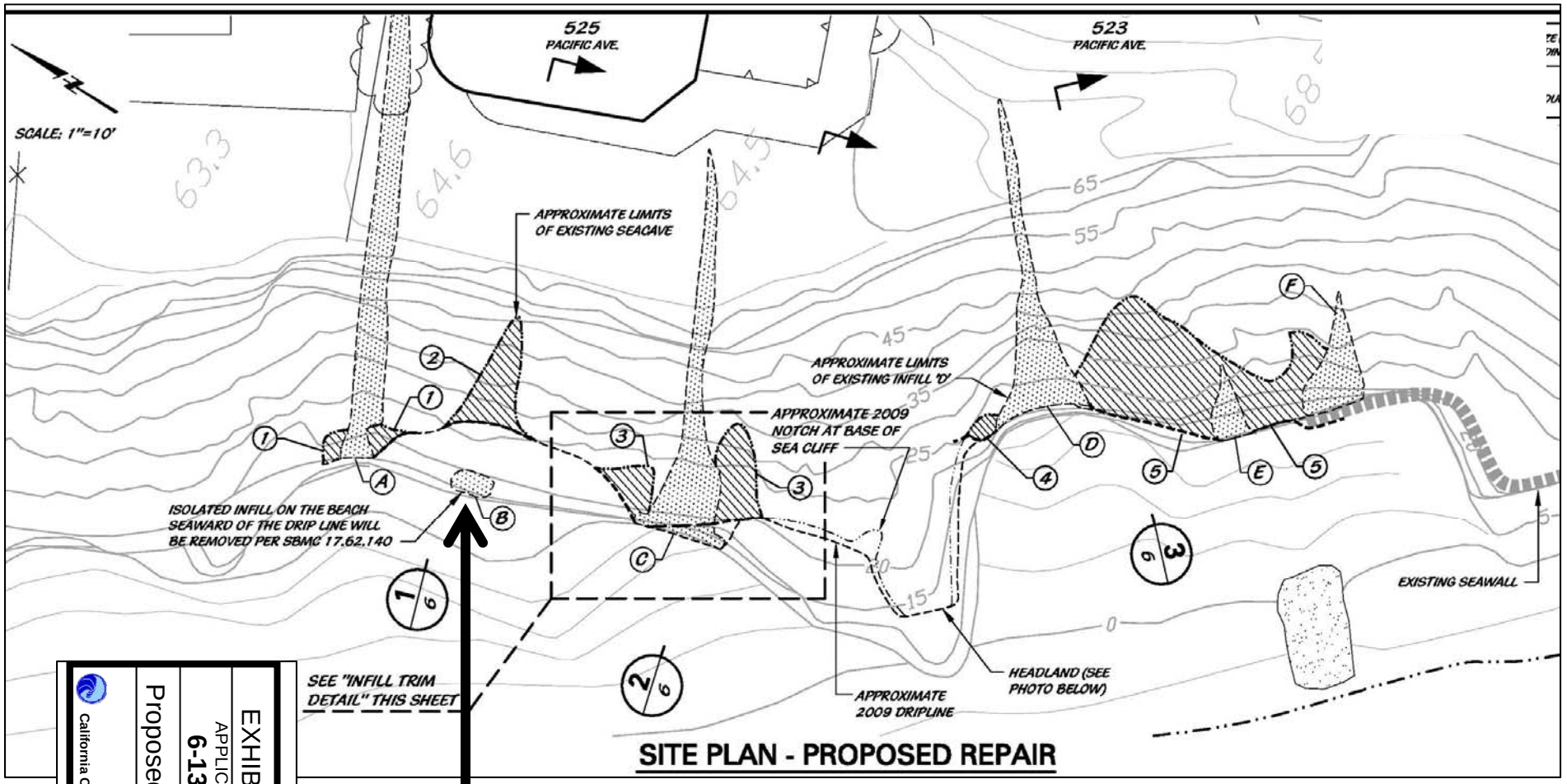
APPLICATION NO.

6-13-0948

Site Plan

Dotted Areas = Existing Infills
Hashed Areas = Proposed Infill Expansion

PROPOSED REMOVAL OF EXISTING INFILL “B”



Existing Infill Proposed for Removal

California Coastal Commission

EXHIBIT NO. 3

APPLICATION NO.
6-13-0948

Proposed Removal

INFILL “C” PHOTO SHOWING TERRACE DEPOSITS (LOOKING NORTH)

EXHIBIT NO. 4
APPLICATION NO.
6-13-0948
Infill “C”
California Coastal Commission

INFILL “C” PHOTO SHOWING TERRACE DEPOSITS (LOOKING SOUTH)

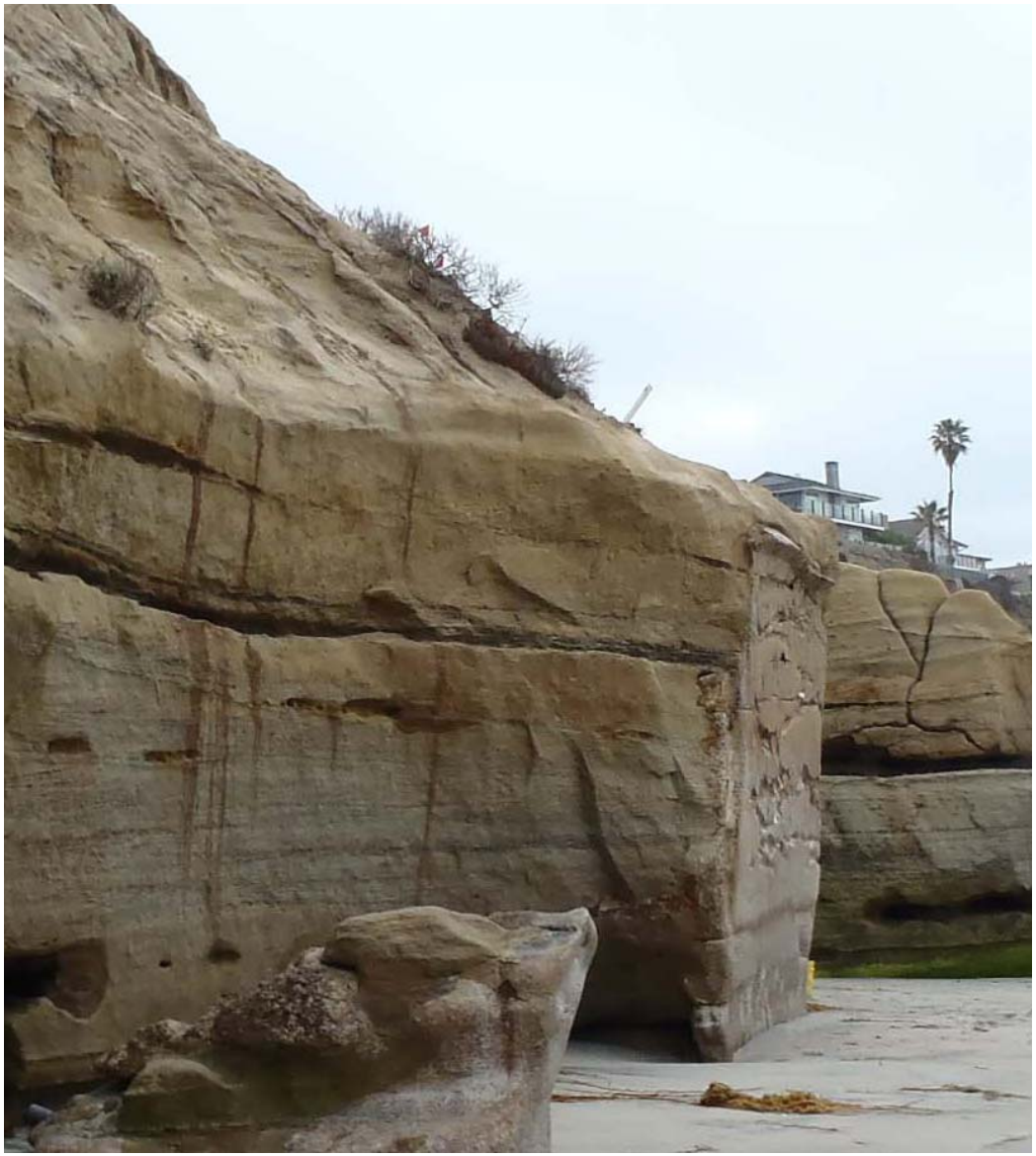


EXHIBIT NO. 5

APPLICATION NO.

6-13-0948

Infill “C”

California Coastal Commission

PROPOSED REMOVAL OF PORTION OF EXISTING INFILL "C"

Dotted Areas = Existing Infill
Hashed Areas = Proposed Infill Expansion

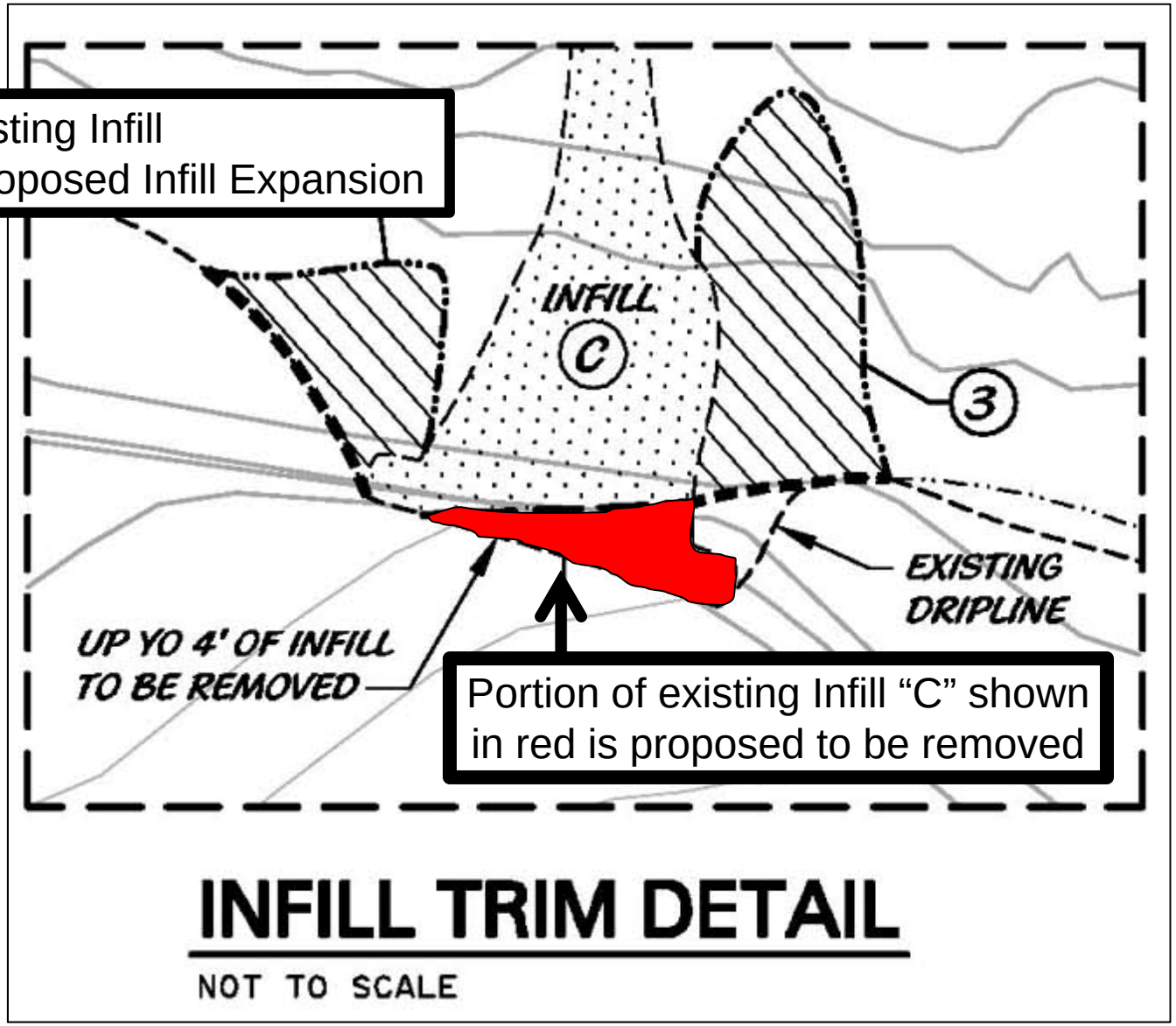


EXHIBIT NO. 6
APPLICATION NO.
6-13-0948
Proposed Removal
California Coastal Commission

REQUIRED PUBLIC ACCESS/RECREATION/AND MITIGATION FOR INFILL "C"

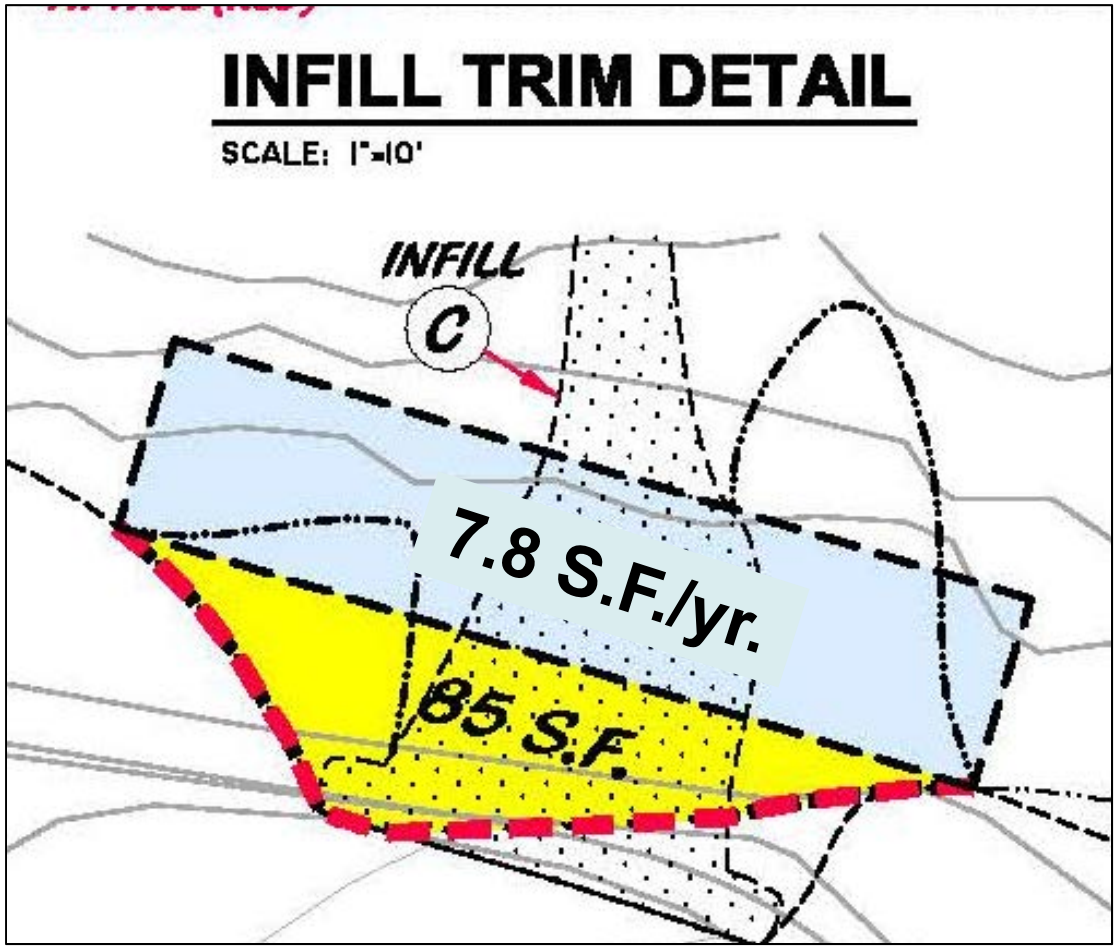


EXHIBIT NO. 7
APPLICATION NO.
6-13-0948
Required Mitigation
California Coastal Commission

- **Dashed Red Line Shows Linear Ft. of Encroachment Used to Calculate Interim Deposit:** 31 Ft.
- **Solid Yellow Shape Shows Area of Encroachment:** 85 Sq. Ft.
- **Solid Light Blue Shape Shows Area of Passive Erosion per Year:** 7.8 Sq. Ft.
- **Sand Supply Mitigation Fee:** $4,325
- **Interim Public Access and Recreation Deposit:** $31,000

PUBLIC ACCESS/RECREATION/SAND SUPPLY MITIGATION FEE CALCULATIONS

Site-specific values for equation variables:

S = 0.75

W = 26 ft (see attached Site Plan, Figure 2)

L = 20 years

R = 0.3 ft/yr

H = $h_s + h_u$ = 65 ft

$\mathbf{R_{cu}}$ = 0.3 ft/yr

$\mathbf{R_{cs}}$ = 0

Sand Cost = $16.29/cy

In 2009, bids were obtained from three contractors to provide approximately 3,000 cy of sand for a nearby project. Copies of those bids are attached. The average sand cost of the three bids is $16.29/cy, which we have used for this project.

Assuming $R_{cu} = R$ and $R_{cs} = 0$, V_b can be simplified as follows:

$$(S \times W \times L \times R \times (h_s + h_u))/27$$

Thus,

$$V_b = 0.75 \times 26 \times 20 \times 0.3 \times 65/27$$

$$V_b = 281.7\ yd^3$$

Less volume of sea cave that would not have contributed to V_b:

$$\text{Sea Cave Volume for 6 ft of erosion} = \frac{74+120}{2} x \frac{6}{27} x 0.75 = 16.2cy$$

(see attached Sea Cave Volume Calculation, Figure 1)

Net V_b = 281.7 – 16.2 = 265.5 cy

Sand Mitigation Fee = 265.5 x $16.29/yd = $4,325

Recreational Use Fee Deposit for Infill C at $1,000 per lf:

For 31 ft, Recreational Use Fee Deposit = $31,000

Total Mitigation & Deposit = $35,325

EXHIBIT NO. 8
APPLICATION NO.
6-13-0948
Required Mitigation
California Coastal Commission

SAND SUPPLY MITIGATION FEE EXCLUDED VOLUME

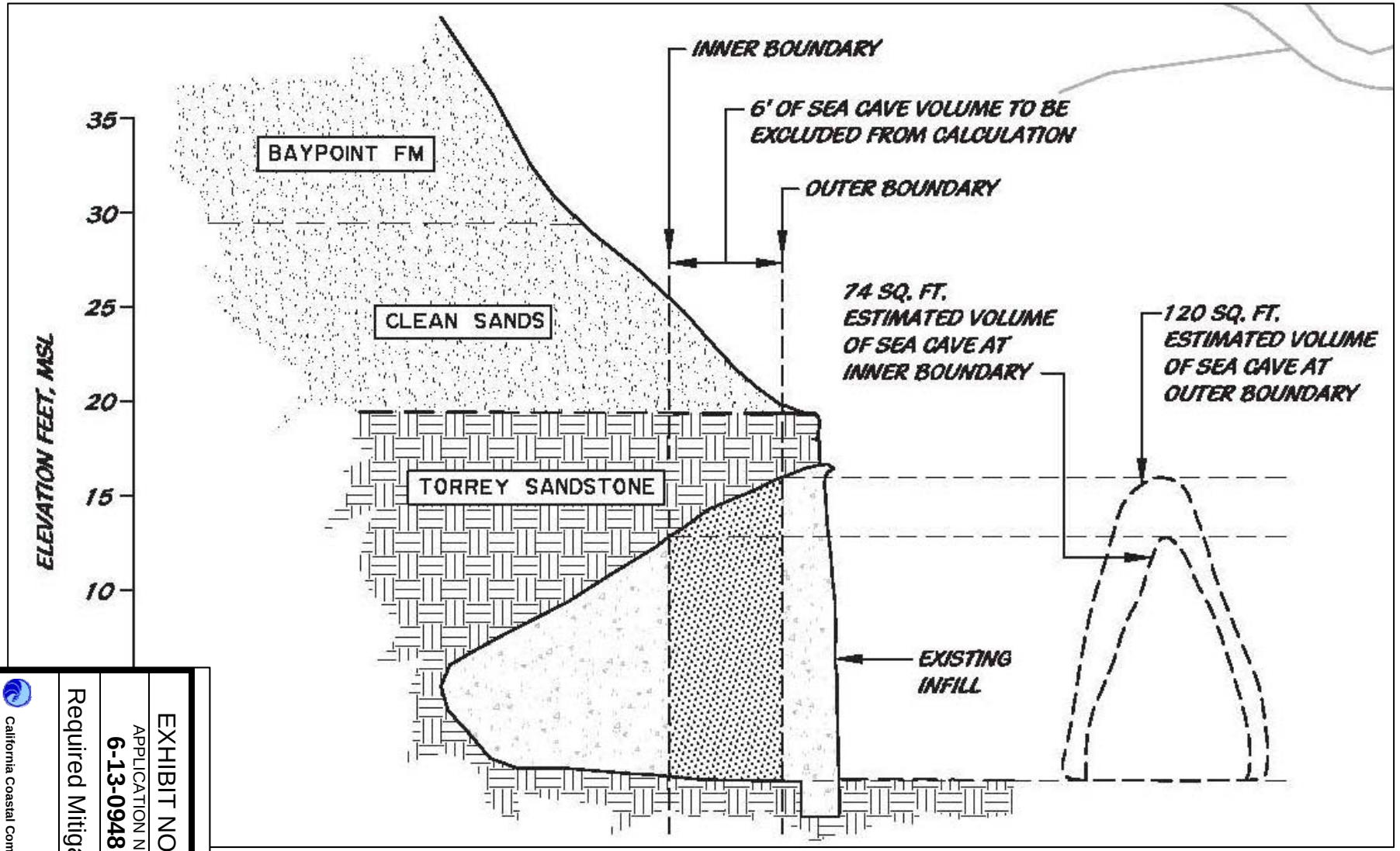


EXHIBIT NO. 9
APPLICATION NO.
6-13-0948
Required Mitigation
California Coastal Commission

EXISTING INFILL RESURFACING (Only for Existing Infills “A” and “D”)

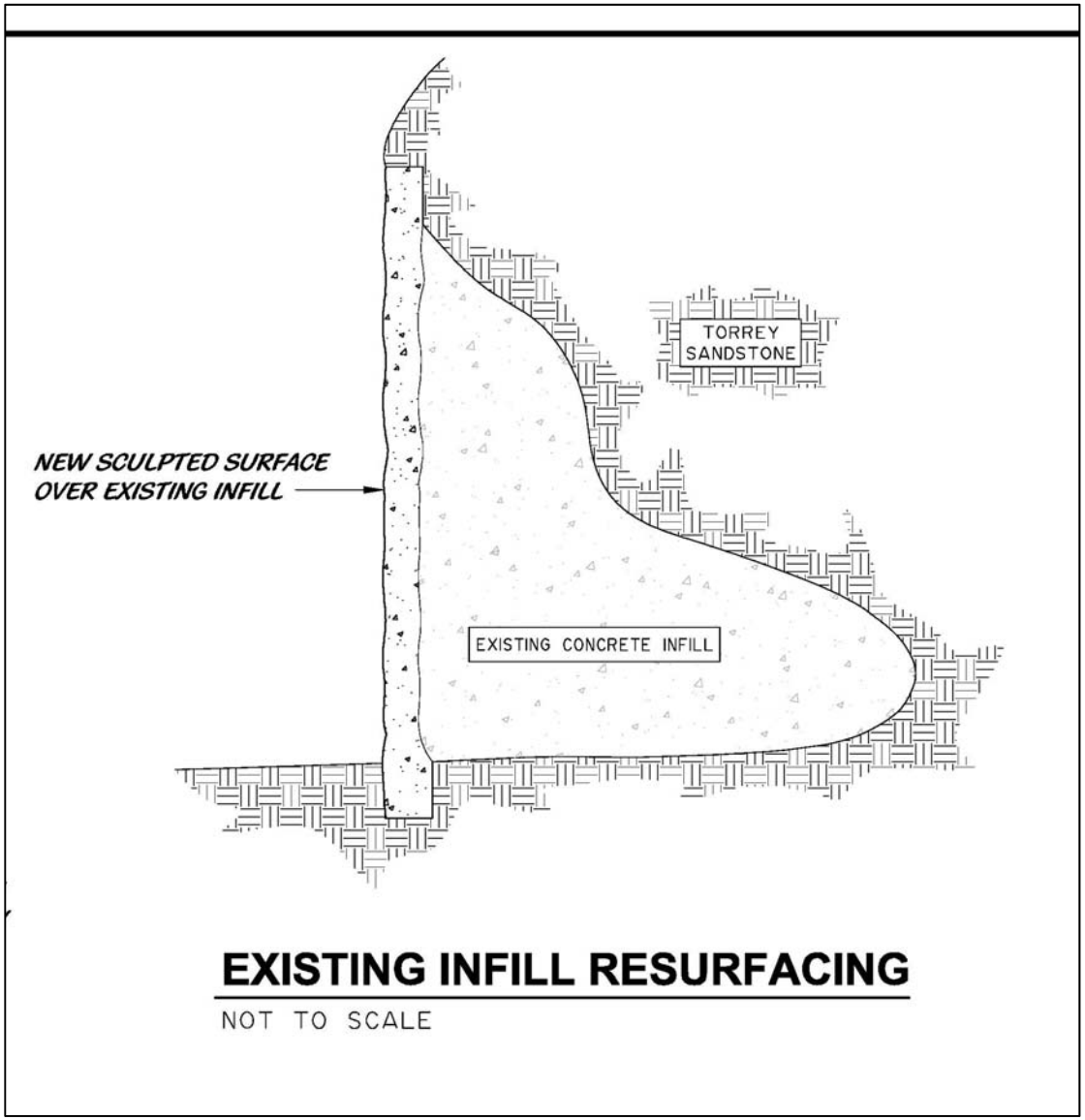
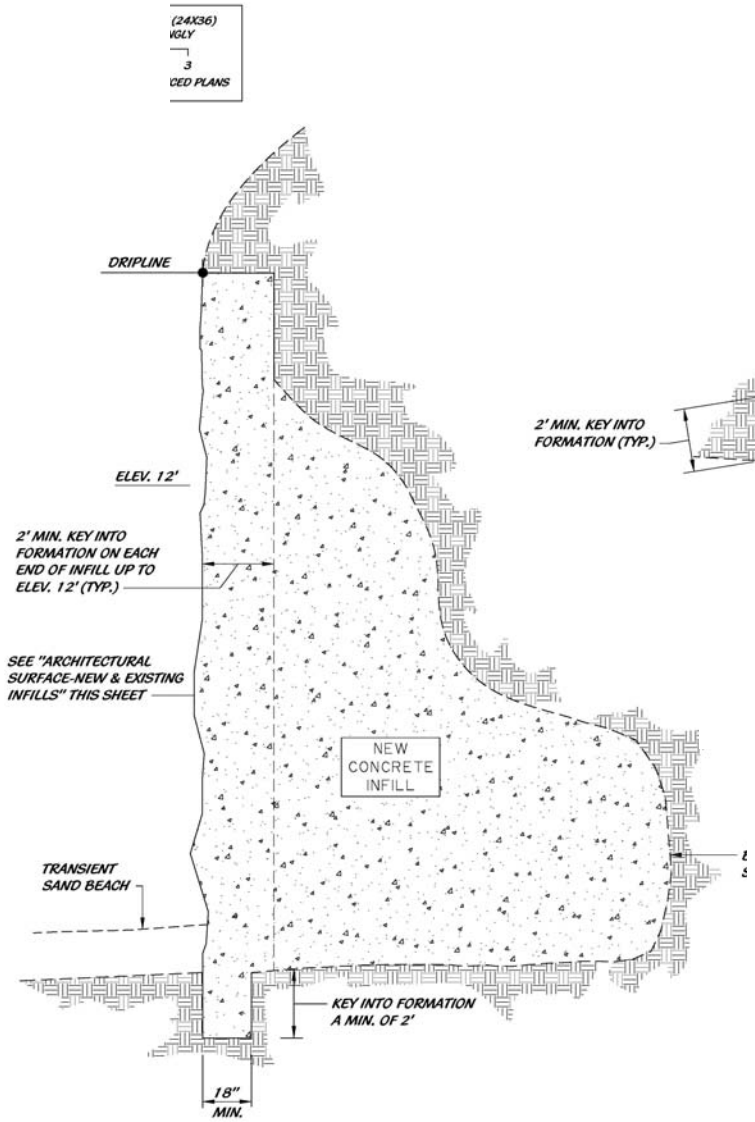
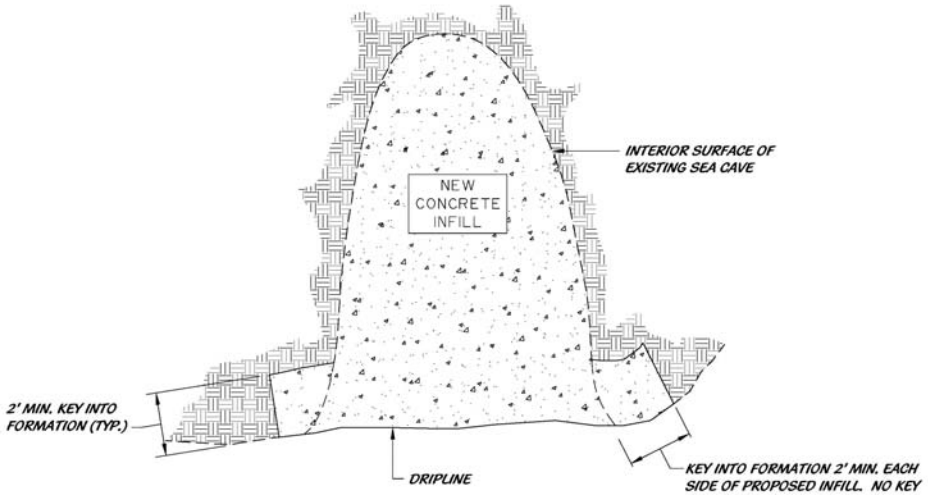


EXHIBIT NO. 10
APPLICATION NO.
6-13-0948
Resurfacing
California Coastal Commission

INFILL EXPANSION SECTION



TYPICAL VERTICAL SECTION THRU NEW INFILL



TYPICAL HORIZONTAL SECTION THRU INFILL

EXHIBIT NO. 11
APPLICATION NO.
6-13-0948
Infill Expansion
California Coastal Commission

CDP #6-87-391

E OF CALIFORNIA—THE RESOURCES AGENCY GEORGE DEUKMEJIAN, Governor

LIFORNIA COASTAL COMMISSION
DIEGO COAST DISTRICT
CAMINO DEL RIO SOUTH, SUITE 125
DIEGO, CA 92108-3520
297-9740

COASTAL DEVELOPMENT PERMIT NO. 6-87-391
Page 1 of 4

Permit is Suspended

FILE COPY

On August 28, 1987, the California Coastal Commission granted to Stephen A. Childs this permit for the development described below, subject to the attached Standard and Special Conditions.

Description: Filling of five sea caves at base of coastal bluff.

Site: 525 Pacific Avenue, Solana Beach, San Diego County. APN 263-041-03.

Issued on behalf of the California Coastal Commission by

PETER DOUGLAS
Executive Director
and

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGEMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE.

ACKNOWLEDGEMENT

The undersigned permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

Date Signature of Permittee

CDP Mailed 11/7/1988

California Coastal Commission
CDP #6-87-391
APPLICATION NO. **6-13-0948**
EXHIBIT NO. 12

STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgement. 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. Compliance. All development must occur in strict compliance with the proposal as set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

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

5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.

6. 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.

7. 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.

SPECIAL CONDITIONS:

1. Open Space Deed Restriction. Prior to the transmittal of the coastal development permit, the applicant shall record a restriction against the subject property, free of all prior liens and encumbrances, except for tax liens, and binding on the permittee's successors in interest and any subsequent purchasers of any portion of the real property. The restriction shall prohibit any alteration of landforms, removal of vegetation or the erection of structures of any type in the area shown on the attached Exhibit "3" without the written approval of the California Coastal Commission or its successor in interest. The recording document shall include legal descriptions of both the applicant's entire parcel(s) and the restricted area, and shall be in a form and content acceptable to the Executive Director. Evidence of recordation of such restriction shall be subject to the review and written approval of the Executive Director.

CDP #6-87-391 (CONT.)

SPECIAL CONDITIONS - continued:

2. Lateral Public Access. Prior to the transmittal of the coastal development permit, the landowner shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a public agency or private association approved by the Executive Director an easement for lateral public access and passive recreational use along the shoreline. The document shall provide that the offer of dedication shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use which may exist on the property. Such easement shall be located along the entire width of the property from the mean high tide line to the toe of the existing bluff.

The document shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable for a period of 21 years, such period running from the date of recording. The recording document shall include legal descriptions of both the applicant's entire parcel(s) and the easement area.

3. Storm Design and Debris Removal. Prior to the transmittal of the coastal development permit, the applicant shall submit certification by a registered civil engineer that the proposed seacave filling is designed to withstand storms comparable to the winter storms of 1982-83. The applicant shall be responsible for the removal of debris that is deposited on the beach or in the water during construction of the shoreline protective device or as a result of the failure of the shoreline protective device.

4. Construction Materials. Disturbance to sand and intertidal areas shall be minimized. Beach sand excavated shall be redeposited on the beach. Local sand, cobbles or shoreline rocks shall not be used for backfill or construction material.

5. Applicant's Assumption of Risk. Prior to the transmittal of the coastal development permit, the applicant as landowner shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from waves during storms, from bluff erosion and from landslide potential, and the applicant assumes the liability from such hazards; and (b) that the applicant unconditionally waives any claim of liability on the part of the Commission and agrees to indemnify and hold harmless the Commission and its advisors relative to the Commission's approval of the project for any damage due to natural hazards. The document

SPECIAL CONDITIONS - continued:

shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens which the Executive Director determines may affect the interest being conveyed, and free of any other encumbrances which may affect said interest.

6. Color of Construction Materials. The face of the proposed construction materials shall be colored and textured to match the adjacent bluff material.

(7391P)

CDP #6-91-081

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
SAN DIEGO COAST AREA
3111 CAMINO DEL RIO NORTH, SUITE 200
SAN DIEGO, CA 92108-1725
(619) 521-8036

COASTAL DEVELOPMENT PERMIT NO. 6-91-81
Page 1 of 6

On July 16, 1991, the California Coastal Commission granted to William S. Bannasch this permit for the development described below, subject to the attached Standard and Special Conditions.

Description: Demolition of an existing 3,332 sq. ft. two-story, single-family residence and construction of a 3,135 sq. ft. two-story, single-family residence; Boundary adjustment affecting two blufftop lots (Lot 1 = 7,913 sq. ft.; Lot 2 = 8,388 sq. ft.); Also, infilling of seacaves that have been previously plugged.

Lot Area	16,301 sq. ft.
Building Coverage	2,223 sq. ft. (14%)
Pavement Coverage	1,029 sq. ft. (6%)
Landscape Coverage	9,864 sq. ft. (60%)
Unimproved Area	3,185 sq. ft. (20%)
Parking Spaces	2
Zoning	RS-11
Plan Designation	Medium Residential 5-7 dua
Project Density	5.4 dua
Ht abv fin grade	25 feet

Site: 523 and 525 Pacific Avenue, Solana Beach, San Diego County. APN 263-041-20, 21

Issued on behalf of the California Coastal Commission by

PETER DOUGLAS
Executive Director
and

California Coastal Commission

EXHIBIT NO. 13
APPLICATION NO. 6-13-0948
CDP #6-91-081

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGEMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE.

ACKNOWLEDGEMENT

The undersigned permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

9-5-91
Date

Signature of Permittee

STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgement. 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. Compliance. All development must occur in strict compliance with the proposal as set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

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

5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.

6. 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.

7. 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.

CDP #6-91-081 (CONT.)

SPECIAL CONDITIONS:

The permit is subject to the following conditions:

1. Revised Plans. Prior to issuance of the coastal development permit, the applicant shall submit to the Executive Director for review and written approval, revised site, building foundation, drainage and grading plans, approved by the City of Solana Beach. The plans shall incorporate the following:

a. Said plans shall comply with all recommendations contained in the geotechnical report for the project, by Catlin Engineering, Inc. dated February 20, 1991 and March 29, 2991.

b. Plans shall indicate that all drainage from the roof and impervious surfaces shall be collected and directed away from the face of the bluff towards the street.

c. Said plans shall reflect compliance with one of the following two options:

1. Revised site plan indicating a minimum 40 foot setback for all portions of the principal residence from the edge of the bluff, as shown on the submitted site plan dated February 27, 1991.

or

2. Provision of a minimum 29 foot setback for the principal residence from the bluff edge, as submitted, utilizing a foundation design to be reviewed and approved in writing by the Executive Director, and recordation of a deed restriction pursuant to Special Condition #2 below.

2. The following is required only if option 1c(2) (see Special Condition #1 above) is chosen by the applicant. Prior to the issuance of the coastal development permit, the applicant shall record a deed restriction in a form and content acceptable to the Executive Director, which shall provide the following:

a. That the landowner not construct any upper or lower bluff stabilization devices, other than the necessary filling of seacaves in the future and the seacave filling approved pursuant to CDP #6-91-81 and any maintenance that may be necessary for these infilled seacaves in the future, to protect the subject single-family residence and/or accessory structures in the event that these structures are subject to damage from erosion, storm wave damage, or other natural hazards in the future.

b. That in the event the edge of the bluff erodes to within 10 feet of the principal residence permitted herein, the landowner shall be responsible for the removal of the principal residence, unless, based on a geotechnical investigation prepared by a licensed coastal engineer and

SPECIAL CONDITIONS, continued:

geologist, alternative methods are identified for the stabilization of the principal residence, which would obviate the need for complete removal of the residence at that time. The report shall make recommendations for any immediate or potential future alternative measures necessary or desired to stabilize the principal residence, including removal of a portion of the residence or relocation of the residence on-site.

c. Upon completion of the geotechnical investigation, the landowner shall submit a coastal development permit application for any measures identified through the report as necessary to achieve stabilization at that time. If no remedial measures are identified as being required and the landowner does not wish to pursue removal or relocation of the principal residence at that time, the landowner shall be responsible for remedial measures in a timely manner in the future, based upon projections in the submitted report.

d. In no case shall erosion be allowed to proceed to a point in which the herein permitted principal residence, or the residence as modified pursuant to any subsequent coastal development permits, shall be rendered unsafe for occupancy as determined by a geotechnical report and/or the City of Solana Beach. At that time, a coastal development permit application shall be required from the landowner for the removal of that portion of the residence which has been determined to be unsafe. Should, at any time in the future, further bluff erosion render the residence unsafe for occupancy, as determined by a geotechnical report, the City of Solana Beach and the Commission, then a coastal development permit application shall be submitted by the landowner for the removal of the residence in its entirety.

The document shall only apply to the northern most lot (lot 1) as adjusted in the herein approved boundary adjustment and shall run with the land, bind all successors and assigns, and shall be recorded free of all prior liens and encumbrances, except for tax liens.

3. Assumption Of Risk. Prior to the issuance of the coastal development permit, the applicant [and landowner] shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, which shall provide: (a) that the applicant understands that the site may be subject to extraordinary hazard from bluff retreat and erosion, and the (b) applicant hereby waives any future claims of liability against the Commission or its successors in interest for damage from such hazards. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens and any other encumbrances which the Executive Director determines may affect the interest being conveyed.

4. Future Development. Prior to the issuance of the coastal development permit, the applicant shall execute and record a document, in a form and content acceptable to the Executive Director, stating that the subject permit

CDP #6-91-081 (CONT.)

SPECIAL CONDITIONS, continued:

is only for the developments described in coastal development permit No. 6-91-81; and that any future additions or improvements to the exterior walls or foundation of the existing residence; or other development as defined in Public Resources Code Section 30106 will require an amendment to this permit or will require an additional coastal development permit from the California Coastal Commission or from its successor agency. The document shall be recorded as a covenant running with the land binding all successors and assigns in interest to the subject property.

5. Final Landscape Plans. Prior to the issuance of the coastal development permit, the applicant shall submit a detailed landscape plan indicating the type, size, extent and location of all plant materials, the proposed irrigation system and other landscape features. Drought and salt tolerant plant materials shall be utilized to the maximum extent feasible. No permanent irrigation systems shall be installed within 40 feet of the bluff edge. No accessory structures or landscaping shall be located within five feet of the bluff edge. Said plan shall be submitted to, reviewed and approved in writing by the Executive Director.

6. Seacave Filling. Prior to the issuance of the coastal development permit, the applicant shall submit final plans, approved by the City which incorporate the following:

a. A map of the location of the existing plugged seacaves.

b. No equipment shall be allowed within 16 feet of the edge of the bluff.

c. Prior to the commencement of construction of the seacave infilling, the applicant shall submit plans that map the location of the holes to be drilled.

d. In the event the seacave filling can not be reasonably accomplished from the top, infilling may occur from the beach. In this case, alternative plans, approved by the City, shall be submitted for review and written approval of the Executive Director.

7. Maintenance Activities. The property owner shall be responsible for the maintenance of the permitted seacave filling. Any debris or materials which become dislodged after completion through weathering and impair public access shall be removed from the beach. Any future maintenance of the infilled seacaves, including the infilling of seacaves in the future, may require a coastal development permit. If maintenance is required, the permittee shall contact the Commission office to determine whether permits are necessary.

SPECIAL CONDITIONS, continued:

8. Staging Areas/Timing. Prior to issuance of the coastal development permit, the applicant shall submit for review and written approval by the Executive Director, a plan identifying any staging areas for construction materials and equipment, as well as access routes to be used for the infilling of the seacaves. The applicant shall also identify equipment to be used and the methods to be employed. No public parking areas, including on-street parking, or any beach area may be utilized for the interim or overnight storage of construction equipment or materials. Disturbance to sand and intertidal areas shall be minimized and any beach sand excavated, shall be redeposited on the beach. Said plans shall indicate that no construction activities shall take place on the beach during the summer months (Memorial Day through Labor Day of any year).

(1081P)

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DUCKOR
SPRADLING
METZGER
WYNNE

Th14a

WRITER'S E-MAIL ADDRESS
roppo@dsmw.com
Direct: (619) 209-3059

May 9, 2014

VIA E-MAIL ONLY

Eric Stevens
California Coastal Commission
7575 Metropolitan Drive, Suite 103
San Diego, CA 92108
Email: *Eric.Stevens@coastal.ca.gov*

Re: Bannasch – 523-525 Pacific Avenue
Case No.: W16B
Application No.: 6-13-0948

Dear Mr. Stevens:

This firm represents the legal interests of the Bannasch Trust, the owner of two residential blufftop properties located at 523 and 525 Pacific Avenue in Solana Beach, California ("Applicant"). The bluff in Solana Beach has endured a significant amount of coastal erosion, primarily due to the loss of the protective sand beach caused by inland development, and mining and damming of many of San Diego County's waterways and drainages upcoast from Solana Beach. While recent beach nourishment projects have helped to slow this problem over the years, many of the residents within the Solana Beach area have had to construct seawalls in order to stabilize their bluffs. The City of Solana Beach has recognized the past problems and has made allowances for mitigation of the effects of the loss of sand and associated erosion in the City's recently approved LCP and LUP.

On October 12, 2011, the City approved a Coastal Development Permit for the properties at 523 and 525 Pacific Avenue to perform infill maintenance of the sea caves as provided for in the deed restriction imposed upon Mr. William Bannasch in 1991. Since the April 2012 Coastal Development Permit application, there has been significant correspondence with Coastal Commission Staff, City Staff, and the Applicant.

Applicant's Response to Staff Recommendation

Over the last 2 ½ years, there has been an admittedly lengthy, however constructive and collaborative process to develop a project that protects Applicant's interests while preserving the public's enjoyment and access to this coastal resource, the City's interests, and the safety of the beach going public The delicate balance envisioned by the Coastal Act of public interest and private property interest has been achieved as a consequence of the effort described. Letters of opposition to this project ignore the multiple interests that are protected by the Coastal Act and the fact that these sea cave infills were approved in 1987 (CDP 6 87 391) and the rights to continued maintenance reaffirmed in a subsequent Coastal Development Permit (CDP 6 91 081).

Opposition comments continue to cite passive erosion as an unmitigable impact, while the use of erodible concrete and the payment of mitigation fees, along with the willingness to work on a more comprehensive regional beach nourishment program, fully mitigates for the limited impact of this project.

The engineering community is now embracing new technology and a variety of engineering applications to accommodate erodible concrete, including channel linings, slope reconstruction, and coastal bluff reconstruction, when a more stable engineered fill is desired; one that could still erode with that of the adjacent topography while still allowing increased erosion protection in areas that might be subjected to increased localized scour/erosion. The Applicant respectfully requests that the Commission approve this project with the conditions proposed by r Staff with the concurrence of the City of Solana Beach.

Respectfully submitted,

DUCKOR SPRADLING METZGER & WYNNE
A Law Corporation

By: William P. Keith for
Anna F. Roppo, Esq.

AFR:cea

3043 4th Avenue, San Diego, CA 92103
(619) 209-3000 Phone (619) 209-3043 Fax
www.dsmw.com

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Stevens, Eric@Coastal Th14a

From: David Winkler <dwinkler@delmarinc.com>
Sent: Monday, May 05, 2014 4:30 PM
To: Sarb, Sherilyn@Coastal; Lee, Deborah@Coastal; Lilly, Diana@Coastal; Stevens, Eric@Coastal; zimmerccc@gmail.com; mmcclureccc@co.del-norte.ca.us; cgroom@smcgov.org; gregcoastal@sdcounty.ca.gov; 'sarahcoastalcom@yahoo.com'
Subject: Permit Number: 6-13-0948; Applicant: William S. Bannasch Trust; Location: Bluff at 523-525 Pacific Ave. Solana Beach, San Diego County

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Chair and Commissioners:

My wife and I are writing to support the sea-cave infill maintenance project at 523-525 Pacific Avenue, Solana Beach, referenced above. We own the adjacent property to the south at 521 Pacific Avenue. We have witnessed first-hand the severe, threatening coastal erosion that this section of the bluff experiences.

Just a few years ago, we received permission from both the City of Solana Beach and the California Coastal Commission to extend our bluff retention device northerly about 16 feet beyond our property line onto the Bannasch property. This was done to prevent flanking, to protect our home and to increase public safety. There is a similar threat of bluff collapse and the undermining of the applicant's property at 523-525 Pacific Avenue, which has the potential to impact our home, as well as the Bannasch home. The toe of the Bannasch bluff must be stabilized.

While the City, and other agencies and individuals are investigating ways to bring more sand to Solana Beach to buffer the bluff toe, the homes along the Solana Beach bluff (including my home and the Bannasch home) continue to be in jeopardy. Issues related to public safety are also of great concern.

The Bannasches, over two decades ago, had several small sea caves filled -- a project that was authorized by the California Coastal Commission and required the ongoing maintenance of those sea caves. Now, 20 years later, all of these sea caves have been breached with significant erosion around each one of the concrete infills. This presents a serious public nuisance. Children often play in and around the back of these deep and dangerous sea caves.

On Saturday, October 1, 2011, our then 5 year old granddaughter and her friend suddenly ran into one of the caves below the Bannasch property. The vision of the bluff collapsing on them, like the bluffs have done numerous times in San Diego County in recent years, was very frightening to us. By coincidence, on the same day, a fisherman had all of his fishing and beach gear abutting my seawall. I asked him why he placed his supplies in that location. He responded, "It looked to be safer there."

Mr. Bannasch and his estate have diligently worked to obtain permission to protect the public, as well as their existing home, and our home, by stabilizing the mid and upper bluff. The current Bannasch maintenance project, which has been approved by the City of Solana Beach, is long overdue. The public would be best served by the speedy approval of this project by the California Coastal Commission.

My wife and I strongly encourage you to approve this application as it comports with the Coastal Act and the previously issued CDP condition to maintain and repair the infills.

Thank you,

Letter of Support

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SURFRIDER FOUNDATION
SAN DIEGO COUNTY CHAPTER

Surfrider Foundation San Diego County Chapter

9883 Pacific Heights Blvd, Suite D
San Diego, CA 92121
Phone: (858) 622-9661 Fax: (858) 622-9961

May 12, 2014

Delivered via email

To: Eric Stevens
California Coastal Commission
7575 Metropolitan Drive Ste 103
San Diego, CA 92108-4402

Re: Item W16b Application 6-13-0948, William S. Bannasch Living Trust

Dear Mr. Stevens,

The Surfrider Foundation San Diego County Chapter submits this comment letter in regards to the Bannasch Living Trust. Surfrider recognizes beaches as a public resource held in the public trust. Surfrider Foundation is an organization representing 250,000 surfers and beach-goers worldwide that value the protection and enjoyment of oceans, waves and beaches. For the past decade, the San Diego Chapter has reviewed and commented on coastal construction projects and policy in San Diego County. We appreciate the opportunity to provide comments to the California Coastal Commission about these important issues.

Our Chapter was disheartened to see the Bannasch application scheduled for the May Coastal Commission meeting in Marin County; especially after we have engaged on this item extensively. We have worked with Coastal Commission staff, submitted a detailed comment letter dated March 6, 2014, and had Surfrider staff attend the March Commission meeting in Long Beach, only to have this item pulled by the applicant at the very last minute. Please continue this item until June for a more local Commission meeting. To hear this item in Marin, when the local community has expressed concerns with this project multiple times flys in the face of the public process.

Please see our previous detailed comment letter, and the extent of our previous engagement, included in the addendum.

Although there have been several changes to this project and staff's recommendations following the March 2014 version, our concerns largely remain the same.

- A project specific EIR has not been produced, as required by our previous litigation.
- There is still no data to demonstrate the erodibility of "erodible concrete". To that end, tests should be preformed on a small amount of "erodible concrete" in the Solana Beach environment before 92ft is installed.
- The potential precedent that this project sets has yet to be addressed. The project as proposed amounts to more than a maintenance project, and is functionally equivalent to a seawall, which the applicant is deed restricted from pursuing. If this project is approved, the Commission should be particularly mindful to preclude situations like this from recurring in the future, where a property has a deed restriction from having a seawall, but then "maintains " their seacave fills to be defacto seawalls.

Letter of Comment

SURFRIDER FOUNDATION
SAN DIEGO COUNTY CHAPTER

Surfrider Foundation San Diego County Chapter
9883 Pacific Heights Blvd, Suite D
San Diego, CA 92121
Phone: (858) 622-9661 Fax: (858) 622-9961

Furthermore, the City's Engineer disputed whether the "erodible" concrete will erode as per his testimony at the January LUPA Hearing. In 2002, the City submitted a monitoring report on its own erodible mix and concluded that it does not erode at the same rate as the bluff. The entire report can be found here: http://home.roadrunner.com/~jmjaffee/Completed%20Drafts/PDFs%20Submitted/ErodibleMixComments.pdf

In previous hearings the Coastal Commission has been very careful to make the distinction that certain protections are allowed for existing structures, but that those protections are not allowed for new development. If this permit is approved with the gross expansion of the seacave infills, it is allowing "armoring" for new development, despite a deed restriction stating that this will not be allowed. The homeowners knowingly created the necessity for the seacave infill expansion by rebuilding 29 ft. from the bluff's edge, despite recommendations that the development be placed 40 ft. from the bluff's edge. It's like the applicant is being allowed to have his cake and eat it too.

If this CDP is approved, the Coastal Commission will be contributing to a pattern and practice that could allow for the armoring of entire coast. This kind of armoring for NEW development should not be allowed since it is expressly not permitted in the Coastal Act.

To summarize, the applicants have not acted in good faith in the past, and are looking to the Coastal Commission to approve the construction of de facto seawalls to protect new development rather than relocating the structure further from the bluff's edge. We ask that the Commission avoid setting a poor precedent by contributing to a pattern and practice that could result in armoring of the entire coast, especially in Solana Beach. Thank you for reviewing our concerns and objections.

Sincerely,

Jim Jaffee
Co-chair of the Beach Preservation Committee
San Diego County Chapter of the Surfrider Foundation
Resident of Solana Beach

Julia Chunn-Heer
Policy Manager
San Diego County Chapter of the Surfrider Foundation

Surfrider Foundation, San Diego County Chapter
9883 Pacific Heights Blvd, Suite D
San Diego, CA 92121
Phone (858) 622-9661 Fax (858) 622-9961

March 6, 2014

Delivered via email

To: Eric Stevens
California Coastal Commission
7575 Metropolitan Drive Ste 103
San Diego, CA 92108-4402

Re: Item W21c Application 6-13-0948, William S. Bannasch Living Trust

Dear Mr. Stevens,

The Surfrider Foundation San Diego County Chapter recognizes beaches as a public resource held in the public trust. Surfrider Foundation is an organization representing 250,000 surfers and beach-goers worldwide that value the protection and enjoyment of oceans, waves and beaches. For the past decade, San Diego Chapter has reviewed and commented on coastal construction projects and policy in San Diego County. We appreciate the opportunity to provide comments to the California Coastal Commission about these important issues.

We object to the staff report concerning the expansion and repair of 5 existing seacave/notch infills for the following reasons:

1. Project alternatives outlined in the staff report do not include moving the house back from the bluff's edge, even though the house was explicitly designed to be moved if it was ever threatened by erosion.

2. Seacave and notch infills fix the back of the beach, halting the natural erosion of the bluffs. When seacaves and notches are filled, the bluff line is moved seaward relative to the natural bluffs. Infills prevent replenishing sand from reaching the beach via erosion as opposed to unprotected bluffs that continue to erode and create beach space. Because of the passive erosion impact caused by fixing the back of the beach, and the infills encroachments on City and State Lands, the CDP should also be subject to land lease and recreation fees, as well as sand replenishment fees.

3. "Erodible concrete" is a myth with no data to support the claim that it erodes at the same rate as the bluff. Erodible concrete lacks scientific evidence of erodibility. Without

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any evidence of seacave infill erodibility, the CDP should be subject to an encroachment removal agreement.

4. The proposed expansion of the seacave infills goes beyond simple maintenance, and is creating a de facto seawall, which is not permitted by the property's deed restriction

5. The CDP applicants have not demonstrated good faith in the past when working with Solana Beach and the Coastal Commission. Encroachment removal agreements should be required and specific guidelines set to ensure that if and when the seacave infills do not erode as hypothesized, the applicants will need to remedy the situation.

6. By allowing such a large expansion beyond simple maintenance of seacave infills, the Commission is setting a bad precedent that contributes to a pattern and practice of allowing for armoring of the entire coast especially in Solana Beach.

1. Project alternatives outlined in the staff report do not include moving the house back from the bluff's edge, even though the house was explicitly designed to be moved if it was ever threatened by erosion.

Potential project alternatives are all found infeasible in the staff report (page 20):

"Alternatives to the proposed seacave and notch infills could include no project, rock riprap, a much larger seacave/notch infill totaling 160 feet in length, chemical grouting, and underpinning of the existing bluff top structure. In this case, these alternatives have been determined to be infeasible"

One obvious alternative is not even discussed in the staff report: moving the house further back from the cliff's edge. This residence was explicitly designed to be moved back from the cliff's edge if threatened by erosion: (see http://www.craigawoods.com/Dtlbannasch.html)

"Bannasch Bluff Residence, Two-story plus Basement, 4,555 square feet, on the bluffs overlooking the Pacific Ocean. The site was underlain by sea caves, which required grouting and was built on caissons and grade beams at 525 Pacific Ave., Solana Beach. Because of it's [sic] location, the Coastal Commission required that it be *designed to be relocated when bluff erosion becomes intrusive on it's* [sic] *foundations*. Exterior elevations were dictated, in large part, but [sic] the regulatory process." (emphasis added)

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Back in 1991, the homeowners were given two options concerning the placement of the new development relative to the cliff's edge (page 13):

> "At the time of the Commission action, the applicant was provided an option of either locating the home at least 40 feet from the bluff edge or locating the home closer than 40 feet from the bluff edge, subject to special conditions incorporating planned retreat from the bluff edge if the home was threatened by erosion in the future. The applicant chose to site the home 29 feet from the bluff edge and designed the home so that it could be removed if necessary."

The applicant chose the riskier route by placing the new home closer to the bluff edge, and because of that decision they are now asking to greatly expand their seacave infills. Instead of being allowed to expand seacave infills, the logical alternative is to move the house back from the cliffs edge.

Additionally, Policy 4.50 of the Solana Beach LUP states the following:

> A Seacave/Notch Infill shall be approved only if all the findings set forth below can be made and the stated criteria satisfied. The permit shall be ~~valid for a period of 20 years commencing with the date of CDP approval and~~...subject to an encroachment removal agreement approved by the City.
>
> (A) Based upon the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below:
>
> (2) The bluff property owner did not create the necessity for the Seacave/Notch Infill by unreasonably failing to implement generally accepted erosion and drainage control measures, such as reasonable management of surface drainage, plantings and irrigation, *or by otherwise unreasonably acting or failing to act with respect to the bluff property* (emphasis added)

The homeowners have clearly acted unreasonably be placing their new development closer to the bluffs edge, and have therefore forfeited their right to new seacave infill. They are entitled to maintenance, but filling 92 feet of previously unarmored bluff hardly seems like a maintenance project.

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2. Seacave and notch infills fix the back of the beach, halting the natural erosion of the bluffs. When seacaves and notches are filled, the bluff line exists at a more seaward location than natural bluffs, while unprotected or filled bluffs continue to erode and create beach space. Infills also prevent replenishing sand from reaching the beach via erosion. Because of the passive erosion impact caused by fixing the back and the infills encroachments on City and State Lands, the CDP should also be subject to land lease and recreation fees, as well as sand replenishment fees.

The infilling of caves does fix the beach in a more seaward location. As discussed on pages 17-19 of the Staff Report, collapse of the caves will occur without the project. According to the material in these pages,

> "...due to cave formation and collapse processes, bluff face recession is rapid and on the order of 1 foot per year below the subject property. Due to the current degree of overhang and cave re-opening along existing cave plug lateral margins, significant failure events and accelerated upper bluff recession is imminent.
>
> "The collapse of the outer approximately 10 feet of the sea cave causes an immediate 12 percent reduction in bluff stability, suggesting an immediate failure propagating up to the top of the bluff, and with the likely immediate failure scarp located about 10 feet from the residence, with likely additional failure scarps quickly propagating to within possibly 5 feet of the residence..."

Under the predictions made by the applicants' engineers, tens of feet of public beach on publicly owned bluffs will be prevented from forming. It is the collapse of these caves and the subsequent washing away of material that creates beach space. Under the Recreation and Access Policies of Chapter 3 of the Coastal Act, an impact analysis is required and mitigation is required if an alternative impacting beach access is selected. Further, the City had originally asked the fee be assessed for the use of their land and impacts. It is appropriate to assess Land Lease and Recreation Fees and to impose an encroachment and removal agreement.

As part of Case No. GIN 020308, Surfrider Foundation (Petitioner and Plaintiff) v. Bannasch (Real Parties), the Superior Court of California decided in 2003 in relation to the same residence and a similar application for seacave and notch fills, that in addition to a lack of evidence concerning concrete erodibility, "erodible concrete" does NOT mitigate the impacts of passive erosion and that seacave infills in effect fix the back of the beach, in the same way that a seawall fixes the back of the beach:

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"[Surfrider Foundation] provided substantial evidence, through both lay persons and experts, that erodible concrete will not mitigate the impacts of passive erosion. [See e.g., AR at 728]. Comments by the public challenged the Real Parties or City to come up with any peer reviewed literature demonstrating that erodible concrete will somehow mimic the erosion characteristics of the bluff. [AR 43] In addition, CalBeach provided detailed logical comments pointing out the many reasons that erodible concreted will not mimic erosion characteristics of the existing bluffs, and is unlikely to erode as expected. [AR 44-45]

"In a responsive e-mail to one of CalBeach's experts, Real Parties consultant stated, "erodible concrete mixes are a bit difficult to design, and most engineers, and ready-mix plants for that matter, do not posses a lot of experience in its design. After all, the purpose of most concrete is to create a durable, rigid surface, i.e., one that does not erode." Id. After describing the litany of obstacles to creating and working with erodible cement, he concludes that "all of this is doable. It does however, require a bit of effort in fine-tuning the mix design to achieve the desired results." [AR 560-561]

"On the other hand, as pointed out by CalBeach's expert Dr. Benoumof, only if the proposed landfill is designed with faults and schisms, and designed to erode in blocks, will it mimic the Torrey Sandstone present at the site. [AR at 44] In addition, Dr. Benoumof, near the end of the presentation, addresses why the use of erodible cement "will not mitigate the adverse impacts of the proposed project." He states:

"While I'm not a coastal engineer and do not profess to know much about erodible cement, you all have a number of photos before you that shows that this erodible cement doesn't erode as the natural bluff erodes, it does not mimic it. And part of the reason for that from a geologic perspective is that the Solana Beach bluffs erode by via block fall. Large blocks fall onto the beach, ...Cement, as far as I know, erodes grain by grain. Unless you build structural discontinuities into the cement such that it will fail via block, it's just not going to mimic the natural erosion." [Testimony before City Council, AR at 728.]"

To reiterate the findings of this case:

"Based on the Court's review of the Administrative Record, the Court concludes that Petitioner raised substantial evidence supporting a fair argument that passive erosion may not be adequately mitigated by erodible concrete, as proposed. Therefore, the Court finds

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that Respondent City abused its discretion by certifying the Mitigated Negative Declaration. An appropriate EIR must be prepared."

Again, while the Real Parties (including Bannasch) have had over 10 years to provide an Environmental Impact Report (EIR) to document their claims concerning the erodible properties of concrete, and that such a material would mitigate passive erosion, they have not provided any documents to back up their claims. Without such a document, it must be assumed that the seacave infills will fix the back of the beach in a similar fashion to a seawall. Therefore, there will be impacts to access/recreation as well as a loss in natural sand replenishment, so land lease and recreation fees, as well as sand replenishment fees, should be assessed. Furthermore, since this large seacave maintenance and expansion project will essentially mimic a seawall, the CDP application should consider moving the house back as one of the alternatives to this project since the house was designed to accommodate a move and the homeowners assumed those risks when the house was built within the 40 ft setback.

Without any credible American Society for Testing and Materials (ASTM) or American Concrete Institute (ACI) documentation concerning the erodibility of the proposed materials, or an EIR to demonstrate the properties of erodible concrete, there is no reason to assume that the seacave infills will erode at the same rate as the natural bluffs. However, no sand mitigation fees are being required for this project since it will supposedly "erode at the same rates as the bluffs". In addition to the lack of evidence concerning the erodibility, sand mitigation and land lease and recreation fees should still be assessed as part of this CDP. What about the loss of beach that would have been gained if the seacave was allowed to collapse? These seacaves would have eroded to create more usable beach, so there will be an impact to access and recreation.

Seacave notchfills have the same impact in fixing the back beach. Some seacaves for example are up to 80 feet deep. The filling of these seacaves prevents 80 ft of beach from being created when the cave collapses. Other caves/notches proposed for filling are on the order of 4-15ft. Given that the driplines of these caves notches remain in place, the net effect is fixing the beach at the dripline. Furthermore, if a the seacave notchfill is consistently maintained, it will have the same overall impact as a seawall in terms of fixing the back beach. Hence mitigation fees should be assessed for seacave notchfills, much as they are for seawalls. Without an encroachment removal agreement, what guarantee is there that the seacave infills will be removed in the future when the impacts to access/recreation are realized?

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The staff report recommends removal of the Sand Mitigation and Encroachment Removal Agreements as stated on page 17 of the staff report:

> "...Policy 4.50 of the City's LUP requires that impacts to coastal resources be assessed and mitigated...and that infills be subject to an encroachment removal agreement. However, on January 9, 2014 the Commission approved a suggested modification to the certified LUP to remove the requirement to impose a Sand Mitigation Fee for erodible concrete seacave/notch infills. In addition, the Commission approved a suggested modification to the certified LUP to remove the requirements to authorize the permit...be subject to an encroachment removal agreement. As detailed below, the proposed erodible concrete seacave/notch infills are designed to erode landward at a rate comparable to the adjacent bluffs and will therefore not adversely impact coastal resources and will naturally deteriorate, thus making a permit authorization period or encroachment removal agreement unnecessary."

As we have demonstrated above, there is no evidence to support the claim that the infills will erode landward at a rate comparable to the adjacent bluffs. As such, Sand Mitigation and Encroachment Removal Agreements should remain in place.

3. "Erodible concrete" is a myth with no data to support the claim that it erodes at the same rate as the bluff. Erodible concrete lacks scientific evidence of erodibility. Without any evidence of seacave infill erodibility, the CDP should be subject to an encroachment removal agreement.

A fundamental and critical issue with this entire CDP is the fact that it relies on the existence of "erodible concrete". Even though there are accepted standards to demonstrate the erodibility of concrete, the applicant has never supplied any evidence to support their claims that the seacave infills will erode at the same rates as the bluffs. The applicant should produce either Journal reviewed material or in-situ data of the performance of the proposed concrete mix design in the intended application. The data must demonstrate the material mimics the erosion rate of heavily jointed and faulted Torrey Sandstone.

Concrete has not been demonstrated to erode in the manner stated by the applicants. In order for concrete to be removed without backhoes or similar equipment, it must be designed to be removed with minimal disruption. According to our review of ACI documents on Controlled Low Strength Materials (CLSM), there is no data to support that concrete will erode at the rates promised in the engineering reports supplied by Bannasch. Without any

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evidence or data to support the engineers' claims of erodibility, there is no reason to assume these claims will prove valid in the environment.

Literature from standard setting organizations (ACI 229R-99 as approved in 2005) shows that in the event that the concrete does not erode as specified, it may be difficult to remove it. http://www.azmag.gov/Documents/pdf/cms.resource/ACI229_-_CLSM46175.pdf) offers the following:

> *"2.7—Erosion control*
>
> *"Laboratory studies, as well as field performance, have shown that CLSM resists erosion better than many other fill materials. Tests comparing CLSM with various sand and clay fill materials showed that CLSM, when exposed to a water velocity of 0.52m/s (1.7ft/sec), was superior to the other materials, both in the amount of material loss and suspended solids form the material.*
>
> *"CLSM is often used in rip-rap embankment protection and in stilling basins below dam spillways, to hold rock pieces in place and resist erosion."*

Flow rates of 0.52m/s are vastly different than forces and flows expected in the harsh and unpredictable marine environment.

Additionally the fact that the testing indicates that CLSM resists erosion as compared to clay and sand fill materials seems contrary to the intended application. The bluff itself consists of sand, clay, and sandstone. So the fact that we are requesting more data on the erosion characteristics is particularly relevant and necessary to judge the performance of the proposed mitigation measure. Please require that the project engineers provide this data before approving the project.

The ACI 229R-99 goes on to discuss excavation of CLSM:

> *"4.3.7 Excavatability— The ability to excavate Controlled Low Strength Material (CLSM) is an important consideration on many projects. In general, CLSM with a compressive strength of 0.3 MPa (50 psi) or less can be excavated manually. Mechanical equipment, such as backhoes, are used for compressive strengths of 0.7 to 1.4 MPa (100 to 200 psi) (Fig. 4.1). The limits for excavatability are somewhat arbitrary, depending upon the CLSM mixture. Mixtures using high quantities of coarse aggregate can be difficult to remove by hand, even at low strengths.*

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Mixtures using fine sand or only fly ash as the aggregate filler have been excavated with a backhoe up to strengths of 2.1MPa (300 psi). When the re-excavatability of the CLSM is of concern, the type and quantity of cementitious materials is important. Acceptable long-term performance has been achieved with cement contents from 24 to 59 kg/m3 (40 to 100 lb/yd3) and Class F fly ash contents up to 208 kg/m3 (350 lb/yd3). Lime (CaO) contents of fly ash that exceed 10% by weight can be a concern where long-term strength increases are not desired. Because CLSM will typically continue to gain strength beyond the conventional 28-day testing period, it is suggested, especially for high cementitious-content CLSM, that long-term strength tests be conducted to estimate the potential for re-excavatability. In addition to limiting the cementitious content, entrained air can be used to keep compressive strengths low."

If the intended application does not perform as specified, excavation would be required. There is no data to demonstrate the PSI of the fill as specified to determine an excavation method.

It would seem appropriate to create a standard based on scientific data in the record instead of just relying on claims of engineers in saying the concrete erodes at the same rate as the bluffs. If no standard or data exists, it may be appropriate to test smaller amounts of different types of "erodible" concrete, since concrete takes 28 days to cure to its compressive strength, before large amounts are used to armor the bluffs. This material must be shown to erode in a similar fashion to the bluffs in the surrounding area.

Additionally, homogeneous fills do not mimic erosion rates in heavily faulted and geologically heterogeneous bluffs. In Solana Beach the Torrey Sandstone present at the site erodes by block fall (for example, Whale Rock). Homogenous fills like the one proposed, so-called "erodible concrete", would erode grain by grain.

The history concerning this stark lack of evidence concerning the properties of "erodible" concrete goes back to 2003. We have been waiting for an appropriate EIR to be prepared concerning the properties of erodible concrete for over 10 years. No such EIR has ever been created by the Real Parties of Interest. There is no reason to suddenly accept, in 2013, that these parties (Bannasch) have created an erodible concrete with the desired properties, without the appropriate engineering report and EIR to back up these claims.

4. The proposed expansion of the seacave infills goes beyond simple maintenance, and is creating a de facto seawall, which is not permitted by the property's deed restriction.

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As the staff report states on page 2, no seawall will ever be permitted to protect this new residence, and only maintenance of the existing seacave infills is allowed:

> "In the case of the subject property, the property owner has waived any rights to construction of a seawall or a mid or upper bluff wall to protect the subject bluff top structure. However, the prior approval of the bluff top structure allows for maintenance of the existing seacave infills fronting the subject site."

Section 30235 of the Coastal Act may permit seawall construction only for existing development (prior to passage of the Coastal Act). However, this property is new development (constructed in 1991), so does not have any rights to seawall construction.

The project outlined in this CDP proposes to cover a lot more of the bluff's face, far beyond simple maintenance of the existing seawalls. An additional 92 feet of currently unspoiled bluff will be covered by the proposed development, in addition to the existing seacave infills. Such a large expansion of the seacave infill is essentially creating a de facto seawall. Additionally, as there is no evidence to support to claim that the seacave infill will erode at the same rate as the bluffs, and this infill is being projected out on the beach, in some ways the proposed seacave infills will have an even worse visual and environmental impact than a seawall. Previous seacave infills at this location have not eroded with the bluffs, and have failed as the concrete from previous infills is currently sitting on the beach. These concrete blocks from previous infills have not been removed as they should have been.

There may be rebar or material other than CLSM in the existing seacave fills which again makes the existing fills behave as a seawall. The proposed notch fills with CLSM are to be tied to the existing notch fills (seawalls). Given these have rebar and concrete that does not erode at the same rate as the bluff, if they are to be maintained then the entire maintained project will functions as a seawall.

We wish to refer to the drawing notations from a project as proposed for the same property in 2001:

> *"Typical Seacave Infill Section 3*
>
> *"Where existing infill occurs, remove any exposed reinforcing steel and resurface infill with carved and colored concrete. Minimum 4 inches thick."*

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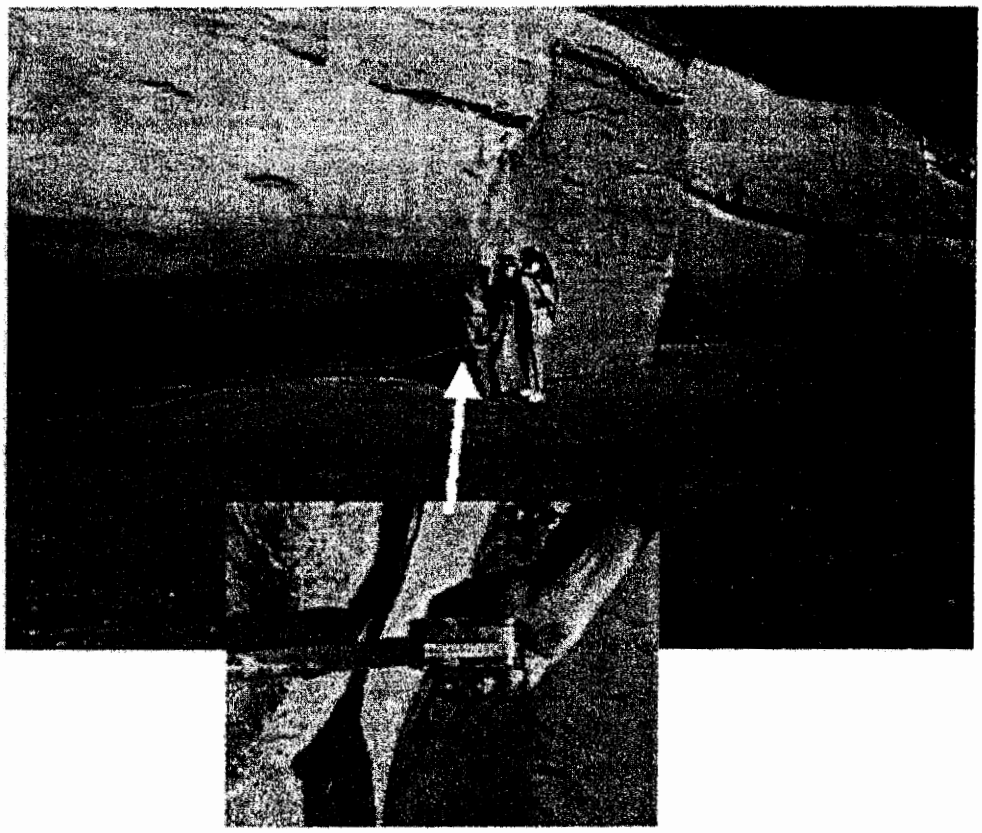
It is anticipated that to maintain the integrity of the existing seawall, adjacent fill will have to be replaced even if the erosion rate of the new fill matches that of the existing bluff, thereby negating its effectiveness as erodible mix and making the entire structure function as a seawall.

In the picture below of the existing wall from 2001, it was flanked at least 64" at the surface indicating the existing fill did not erode at the same rate as the bluff. The fill is in the same location today and erosion has persisted. In fact this means adjacent to the existing seawalls (aka seacave fill), the bluff is actually fixed at its 1991 location.



(tape measure measuring 64" in 2001)

5. The CDP applicants have not demonstrated good faith in the past when working with the Coastal Commission. Specific guidelines should be set to ensure that if and when the

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seacave infills do not erode as hypothesized, the applicants will remedy the situation immediately.

Past actions by the applicant do not demonstrate that they have acted in good faith, as outlined in the staff report on the following pages:

Page 2: "Currently, one of the existing infills (Infill "C") extends beyond the bluff on the beach and adversely impacts public access. In order to prevent such an issue, CDP #6-87-391 approved a seacave infill design that incorporated joints into the concrete, which would break off onto the beach as the adjacent bluff naturally eroded landward. Removal of the portion of the existing infill "C" is necessary because *it does not appear that the applicant constructed the existing seacave infills consistent with the seacave infill design previously approved by the Commission*" (emphasis added)

Page 12: "In August of 1987, the Commission approved CDP #6-87-391 for the filling of five seacaves located on the beach below the subject site....The Commission recognized that the seacave infill would potentially have various adverse impacts to natural shoreline processes, including temporarily stopping bluff retreat, steepening the beach profile, and increasing beach erosion adjacent to the concrete infills. However, the seacave infills were proposed to be designed with joints which would result in segments of the seacaves breaking off as the surrounding bluff weathered and retreated.....*However, instead of completely filling the seacaves consistent with the Commission approval, the seacaves were only "plugged," a void was left behind the "plugs," and the fill did not include "joints," as proposed.*" (emphasis added)

Page 28: "The project proposed by the applicant and approved in CDP #6-87-391 required that the seacave infills were to be constructed with joints that would allow the infill to break off as the adjacent natural bluff eroded landward. As detailed in the project history section of this staff report, *the permittee did not construct the seacave infills consistent with the Commission's approval and instead only plugged the openings to the seacaves. Had the permittee constructed the seacave infills with joints in the concrete, as originally proposed, the seacave fill would break apart as the bluff eroded landward, and the debris could be easily removed from the beach. Thus, had the applicant constructed the seacave fill as originally proposed and permitted, it would likely not be necessary for the Commission to require removal of infill "C" as part of this permit.*" (emphasis added)

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Page 29: "In an email dated December 11, 2013, the applicant's engineer stated that removing the portion of existing infill "C" that protrudes approximately 7 feet seaward of the adjacent bluff would not destabilize the bluff. In addition, in the December 11, 2013 email, the applicant's engineer states the following in regards to the technical feasibility of removing of the concrete encroaching on the beach:

"...To address the practicality of actually removing the protruding Infill No. C, we have also attached information on a hydraulically powered, hand- operated, rotary percussion drill that could easily drill a series of 1 1/2 inch holes through the 1991 concrete infill along any desired and possibly curvilinear line, say on 1 foot centers, that could then be relatively easily wedged off or hydraulically split with a chemical splitting compound like S- Mite, Dexpan, or RockFrac..."

"The applicant, however, opposes removal of the portion of existing infill "C" that is currently located on and interfering with public beach access."

Additionally, on page 31, staff makes the following comment:

"Requiring the maintenance of seacave/notch infills to remove material that is located greater than 6 inches seaward of the natural bluff face has been required by the Commission in previous applications. *Although actual removal of seacave/notch infill material occurs rarely..."* (emphasis added)

What will these applicants oppose next when they are not in line with the Commission's direction? If the Commission's staff fully admits that seacave infill removal rarely occurs, some guarantees are required to ensure that those who have acted in bad faith in the past will be forced to take responsibility for proper maintenance of their seacave infills.

6. By allowing such a large expansion beyond simple maintenance of seacave infills, the Commission is setting a bad precedent that contributes to a pattern and practice of allowing for armoring of the entire coast.

In previous hearings the Coastal Commission has been very careful to make the distinction that certain protections are allowed for existing structures, but that those protections are not allowed for new development. If this permit is approved with the gross expansion of the seacave infills, it is allowing "armoring" for new development, despite a deed restriction stating that this will not be allowed. The homeowners knowingly created the necessity for the

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seacave infill expansion by rebuilding 29 ft from the bluff's edge, despite recommendations that the development be placed 40 ft from the bluff's edge. It's like the applicant is being allowed to have his cake and eat it too.

If this CDP is approved, the Coastal Commission will be contributing to a pattern and practice that could allow for the armoring of entire coast. This kind of armoring for NEW development should not be allowed since it is expressly not permitted in the Coastal Act.

To summarize, the applicants have not acted in good faith in the past, and are looking to the Coastal Commission to approve the construction of de facto seawalls to protect new development rather than relocating the structure further from the bluff's edge. The applicants also propose to use a material, "erodible concrete" with absolutely no scientific or standardized data to demonstrate that the material they describe will behave in the desired manner. We ask that the Commission avoid setting a poor precedent by contributing to a pattern and practice of allowing for armoring of the entire coast, especially in Solana Beach.

Thank you for reviewing our concerns and objections.

Sincerely,

Jim Jaffee
Co-chair of the Beach Preservation Committee
San Diego County Chapter of the Surfrider Foundation
Resident of Solana Beach

Kristin Brinner
Beach Preservation Committee Member
San Diego County Chapter of the Surfrider Foundation
Resident of Solana Beach

Julia Chunn-Heer
Policy Manager
San Diego County Chapter of the Surfrider Foundation

Intentionally Blank

Stevens, Eric@Coastal

Th 14a

From: Sarb, Sherilyn@Coastal
Sent: Wednesday, March 05, 2014 5:03 PM
To: Stevens, Eric@Coastal; Lilly, Diana@Coastal; McEachern, Lee@Coastal
Subject: FW: Ex parte re W 21C Bannasch

Follow Up Flag: Follow up
Flag Status: Flagged

for the file and addendum

From: Jana Zimmer [zimmerccc@gmail.com]
Sent: Wednesday, March 05, 2014 4:40 PM
To: Jana Zimmer; Sarb, Sherilyn@Coastal; Miller, Vanessa@Coastal; Staben, Jeff@Coastal
Subject: Fwd: Ex parte re W 21C Bannasch

Please include the below correspondence as an ex parte communication.

---------- Forwarded message ----------
From: **Julia Chunn** <julia@surfridersd.org>
Date: Wed, Mar 5, 2014 at 11:10 AM
Subject: Re: Ex parte re W 21C Bannasch
To: Jana Zimmer <zimmerccc@gmail.com>

Hello Commissioner Zimmer,

Here are my main points. Please let me know if you would like to have a conversation about this.

- The house has a deed restriction from ever having a seawall (rebuilt in 1991), if a seawall is needed; the house is designed to be moved further back. There is a website that advertises this: http://www.craigawoods.com/Dtlbannasch.html

"**Bannasch Bluff Residence**, Two-story plus Basement, 4,555 square feet, on the bluffs overlooking the Pacific Ocean. The site was underlain by sea caves, which required grouting and was built on caissons and grade beams at 525 Pacific Ave., Solana Beach. Because of its location, the Coastal Commission required that it be designed to be relocated when bluff erosion becomes intrusive on its foundations. " □

- This seacave "maintenance" project will cover 92 ft. bluff surface, which was not previously part of the seacaves/unarmored. The applicant is calling it a maintenance project, but when does a maintenance project become a seawall?

- Will the erodible concrete really erode? Our previous litigation (11 years ago), successfully determined there was not enough evidence to assume it would erode like the bluff and that they needed to do an EIR. If it does not erode, will the applicant **actually** be forced to remove it? I feel sorry for the fellow who has to go in there with a jackhammer!

- No data that it will actually erode, the application only lists the "mix ratio". Need to know the psi.

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• No known installations in Solana Beach. It would seem appropriate to create a standard instead of accepting anecdotal claims of engineers in saying the concrete erodes at the same rate as the bluffs.

• Applicant chose to locate house closer than recommended 40 ft setback and move it back it if became threatened.

• With this application the CCC is contributing to a pattern and practice of allowing for armoring of the entire coast. In the previous hearings the CCC has been very careful to distinguish protections for existing structures, and that those protections are not allowed for new development. Now this is allowing "armoring" for new development, despite a deed restriction. It's like the applicant is being allowed to have his cake and eat it too.

• Pg. 19 "the house is not threatened" "if the erosion is not slowed it will be threatened in the future."

• The project alternatives do not consider moving the house back (even thought it was designed to accommodate that).

• No mitigation fees will be required for this project since it will "erode at the same rates as the bluffs". However, what about the loss of beach that would have been gained if the seacave was allowed to collapse. It is 19 ft. deep in some places.

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• When does an infill become a seawall? When does maintenance project turn into a new development?

• This CDP needs to have the encroachment and removal agreement added back in.

Best Regards,
Julia

On Wed, Mar 5, 2014 at 8:58 AM, Jana Zimmer <zimmerccc@gmail.com> wrote:
Julia, please send me your concerns by e mail and then I will decide if we need to talk. Thanks.

On Tue, Mar 4, 2014 at 12:11 PM, Julia Chunn <julia@surfridersd.org> wrote:
Dear Commissioner Zimmer,

I would like to set up a brief conference call with you to discuss our concerns re agenda item Wed 21 C Bannasch. Please let me know some times that work for you.

Best Regards,

--

Julia Chunn-Heer
San Diego County Policy Manager
Surfrider Foundation
julia@surfridersd.org
619-246-8881

--

Julia Chunn-Heer
San Diego County Policy Manager
Surfrider Foundation
julia@surfridersd.org

Help protect your oceans, waves and beaches by becoming a Surfrider Foundation member today!

Stevens, Eric@Coastal

From: sdcampaigncoordinator@gmail.com on behalf of Julia Chunn <julia@surfridersd.org>
Sent: Monday, March 10, 2014 2:14 PM
To: Stevens, Eric@Coastal
Subject: Email to Bochco re item 21 C Bannasch
Attachments: Bannasach final letter 3 6 14.pdf

Hello Eric,

Please see the email below which I sent to Commissioner Bochco.

Best,
Julia

---------- Forwarded message ----------
From: **Julia Chunn** <julia@surfridersd.org>
Date: Fri, Mar 7, 2014 at 2:28 PM
Subject: Re: Ex parte re item 21 C Bannasch
To: Phillip Arnold <phillip.arnold@bochcomedia.com>, Dayna Bochco <ccc@daynabochco.com>

Dear Commissioner Bochco,

Your assistant Phillip informed me that you will be unavailable for an ex parte call prior to the March CCC meeting. As such, he suggested I send you some information via email. Please find our comment letter attached here, which was submitted to staff early Thursday morning.

I have also included a few points below which I will be discussing with other Commissioners over the phone. Please let me know if you have any questions.

- The house has a deed restriction from ever having a seawall (rebuilt in 1991), if a seawall is needed; the house is designed to be moved further back. There is a website that advertises this: http://www.craigawoods.com/Dtlbannasch.html

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- There are no known installations of similar material in Solana Beach. It would seem appropriate to create a standard instead of accepting anecdotal claims of engineers in saying the concrete erodes at the same rate as the bluffs. Or perhaps test small amounts of the "erodible" concrete before such a large installation goes in.

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- This CDP needs to have the encroachment and removal agreement added back in.

On Wed, Mar 5, 2014 at 2:24 PM, Phillip Arnold <phillip.arnold@bochcomedia.com> wrote:
Julia,

Sorry for the delay. Unfortunately Dayna's schedule is completely booked. Please feel free to provide her with any comments in writing that you're providing to staff and / or other commissioners.

Phillip

Steven Bochco Productions
PHILLIP ARNOLD
ASSISTANT TO STEVEN AND DAYNA BOCHCO
3000 OLYMPIC BLVD, SUITE 1310
SANTA MONICA, CA 90404
310.566.6909

From: Julia Chunn <julia@surfridersd.org>
Date: Tuesday, March 4, 2014 12:09 PM
To: Dayna Bochco <ccc@daynabochco.com>
Cc: Phillip Arnold <phillip.arnold@bochcomedia.com>
Subject: Ex parte re item 21 C Bannasch

Dear Commissioner Bochco,

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Best Regards,
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Julia Chunn-Heer
San Diego County Policy Manager
Surfrider Foundation
julia@surfridersd.org
619-246-8881

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Best Regards,
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Julia Chunn-Heer
San Diego County Policy Manager
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julia@surfridersd.org

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Stevens, Eric@Coastal

From: sdcampaigncoordinator@gmail.com on behalf of Julia Chunn <julia@surfridersd.org>
Sent: Monday, March 10, 2014 2:16 PM
To: Stevens, Eric@Coastal
Subject: Email to Kinsey re agenda item W21C
Attachments: Bannasach final letter 3 6 14.pdf

Hello Eric,

Please find the email I sent to Chair Kinsey below.

Best Regards,
Julia

---------- Forwarded message ----------
From: **Julia Chunn** <julia@surfridersd.org>
Date: Fri, Mar 7, 2014 at 1:57 PM
Subject: Ex Parte re CCC agenda item W21C
To: skinsey@marincounty.org

Dear Chair Kinsey,

Your aide Liza informed me that you will be traveling prior to the March CCC meeting, and unavailable for an ex parte call. As such, she suggested I send you some information via email. Please find our comment letter attached here, which was submitted to staff early Thursday morning.

I have also included a few points below which I will be discussing with other Commissioners over the phone. Please let me know if you have any questions.

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Best Regards,

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Julia Chunn-Heer
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Th14a

CITY OF SOLANA BEACH
635 SOUTH HIGHWAY 101 • SOLANA BEACH, CALIFORNIA 92075-2215 • (858) 720-2400
www.cityofsolanabeach.org FAX (858) 792-6513 / (858) 755-1782

May 12, 2014

To: California Coastal Commission Commissioners and Staff

Re: Item W16b Application No. 6-13-0948, William S. Bannasch Living Trust

Dear Commission Chair Kinsey and Commissioners:

In recent months, there has been significant concern expressed over the potential use of erodible concrete for sea cave and notch infills in the City of Solana Beach (City). At the January 2014 CCC, City Staff voiced concerns over CCC staff suggestions to amend the City's LUP to allow the use of erodible concrete in the City. After considerable discussion, we came to an agreement at the January hearing based on our discussions and CCC actions.

A fundamental goal of the City's LUP is the protection of the visual appeal of the shoreline by promoting consistency in the design and appearance of any necessary shoreline protective devices. The natural beauty of the bluffs is to be kept intact to the maximum extent feasible by allowing natural articulation and headlands that exist to remain intact. It is in this context that we are apprehensive of the use of erodible concrete and are opposed to any requirement to remove native bluff material as part of this project.

Intentional removal of any native bluff is strictly prohibited in the City's LUP. The only exception to this would be a specific public safety threat and then only the minimum removal necessary to protect public safety should be allowed. City Staff believe that coastal structure maintenance under the LUP/LUPA shall not intentionally involve removal of any native/natural bluff materials or otherwise potentially directly or indirectly adversely affect bluff stability in order to comply with the LUP policies. In discussions with the City third-party geotechnical engineer, Mr. Jim Knowlton, he stated the intentional undermining of the upper sloping terrace deposits and the resulting bluff instability could trigger the need for a full scale seawall if the clean sand deposits are exposed by this action.

The City approved a seacave repair and maintenance project at this site more than 2 years ago based on a design that was included in the City's Certified LUP and fully vetted with CCC staff over many years while the LUP was under development. Erodible concrete has not been used in the City in over a decade because it did not perform as predicted. We remain concerned that erodible concrete may be unable to attain the high standards of aesthetics established in the LUP that require sculpting to create a natural appearance that is similar to the native bluff.

As discussed with you last week, we are already starting to receive questions from applicants on the use of erodible concrete, which at this time we are not able to provide answers to. Therefore, we would like to set up a time in the near future to discuss these questions with CCC staff. Please call me at 858-720-2431 with any questions.

Sincerely,

David Ott
City Manager

COMMENT LETTER FROM
CITY OF SOLANA BEACH