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6-18-0288-REC (DESIMONE ET AL.)

JUNE 13, 2019

EXHIBITS

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Coastal Property Rights, Land Use & Litigation

April 5, 2019

Via U.S. Mail and email

Diana Lilly
California Coastal Commission
7575 Metropolitan Drive, Suite 103
San Diego, California 92108
cort.hitchens@coastal.ca.gov

Re: Application No. 6-18-0288 (DeSimone, Schrager, Jokipii): Request for Reconsideration

Dear Cort:

On behalf of applicants Bob DeSimone, Rick Schrager, and Eron Jokipii, we respectfully request that the Commission reconsider its March 7, 2019 decision granting the above referenced permit application conditioned upon redesigning the project to eliminate any shoreline protection in front of the Jokipii property at 245 Pacific Avenue, Solana Beach.

1. Introduction and background.

The applicants are three neighbors who own blufftop properties at 235, 241, and 245 Pacific Avenue, all developed with modest single-family homes. The bluff in this section of Solana Beach is relatively unstable (compared to other bluffs in the area) due to the presence of a "clean sand lens," a horizontal layer of unconsolidated sand lying between the Torrey sandstone bedrock and the terrace deposits upon which the homes on Pacific Avenue are built. The clean sand lens is approximately ten feet thick, starting at an elevation of 25 feet MSL and topping out at 35 feet MSL, more or less. When the clean sand lens is exposed, as it has been here, it easily erodes and sloughs when acted on by forces such as wind, water, earthquakes, and disturbance by humans or animals on the bluff face. The terrace deposits above are then unsupported and collapse, usually in massive chunks.

For this reason, and to implement the policy of section 30235 of the Coastal Act, Solana Beach's certified LUP specifically allows the construction of seawalls to protect existing structures on the bluff. Seawalls have been approved and installed along much of the length of this bluff. The 150 feet fronting the applicants' properties is one of the few areas that is not protected by any form of seawall, and this section has experienced alarming bluff failures in recent years. All three applicants (and the neighbor immediately to the north at 249 Pacific Avenue, who is not an applicant but is directly affected by the decision on this application) have been advised by their engineers that their homes are in danger of collapse in the very near future without bluff protection.

The applicants thus filed a joint application to put in a single, continuous seawall 150 feet long and approximately 35 feet high to cap the clean sand lens and plug the gap at the base of the bluff in front of their homes. Though Jokipii's predecessor had signed a partial seawall waiver affecting the property at 245 Pacific Avenue (discussed further below), the applicants provided evidence—which was not disputed by Commission staff or any of the project opponents—that the section of seawall in front of 245 was immediately necessary to protect the homes at 241 and 249 Pacific Avenue, both of which are legally entitled to protection under section 30235 of the Coastal Act and the Solana Beach certified LUP.[1] Indeed, Executive Director Jack Ainsworth explained at the hearing that "our guiding policy is again, Section 30235 of the Coastal Act that requires us to approve protection for structures in danger from erosion." (Hearing Transcript, Mar. 7, 2019, at 23:8–11.) It was also undisputed that the only way to protect the adjacent properties without a seawall in front of 245 Pacific Avenue—if it is even possible—would be to construct much more intrusive and less effective structures on the bluff face in front of 241 and 249 Pacific Avenue.

The staff report recommended that the Commission approve the application, as the proposed seawall provided the most effective and least damaging way of protecting the homes on 235, 241, and 249 Pacific Avenue. The staff report explained:

> An alternative to approving the entire 150 ft. long seawall would be to leave an unarmored "gap" of natural bluff fronting the home at 245 Pacific Avenue and to only approve the seawall and geogrid mid and upper bluff structure fronting 235 and 241 Pacific Avenue.… However, while the Commission is not required to approve protection for the home [at] 245 Pacific Avenue, because the home is adjacent to other homes that are at risk and are entitled to protection, *there is no clear way to avoid some form of protection in front of 245 Pacific Avenue. A gap in the seawall would result in potential flanking of the existing permitted seawall to the north of 245 Pacific Avenue and the proposed seawall fronting 235 and 241 Pacific Avenue, thereby impacting the properties up and down coast* of 245 Pacific Avenue (249 and 241 Pacific Avenue). *While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection on the adjacent lots.* For example, east/west directed retaining walls that function as a return walls to the lower seawall below 249 Pacific Avenue and 241 Pacific Avenue *might temporarily* address the threat to the surrounding existing structures. *However, continual monitoring and the on-going construction of additional and larger walls, geogrid, etc. would be necessary as erosion continued to occur. The Commission's senior engineer and geologist have examined the*

[1] The owner of the property at 249 Pacific Avenue is not a party to the present application and is essentially in the position of an innocent bystander.

> *alternative of not constructing any shoreline armoring seaward of 245 Pacific Avenue and concluded that the impacts to the natural landform and visual quality of the bluff would be greater than the impacts associated with the proposed project, and would be detrimental to the adjacent properties ….*

(Staff Report: Regular Calendar, App. No. 6-18-0288, Aug. 23, 2018, at p. 2 [emphasis added].)

At the hearing, the commissioners, staff, and project opponents at the March 7 hearing all acknowledged that such structures would be "ugly" (Hearing Transcript, Mar. 7, 2019, at 17:8, 17:12–13, 19:14, 26:18, 27:5, 33:17) and "horrific" (*id.* at 33:16), would result in "some godawful structural return wall up the bluff" (*id.* at 31:18–19), would "even more destabilize these bluffs if you didn't do it across the three properties" (*id.* at 33:18–19), and would have a "physical impact on the [adjacent properties]" (*id.* at 36:16). The senior coastal engineer for the Commission acknowledged that the "gap" in the bluff would "get[] bigger over time," and "you would have to have sort of an alley eventually developed as the bedrock material erodes back because there is no protection for that section of the bluff." (*Id.* at 37:6–7.) The staff geologist confirmed:

> [A]ll the evidence we have from the slope stability analysis the applicants provided is that right now … the weak upper-bluff material, it could fail. And it could endanger … the neighboring houses.
>
> And … if and when that occurs, they could be back in here, you know, with a—some sort of emergency solution that includes both … the lower bluff kind of seawall going into the embankment that's starting to be created in the bluff.
>
> But also additional upper-bluff structures such as … caissons or geogrid or things like that. So … our staff assessment … [i]s that … there is an existing danger at the moment.

(*Id.* at 38:9–23.)

Nevertheless, despite the staff recommendation, the undisputed legal entitlement of the property owners at 235, 241, and 249 Pacific Avenue to have shoreline protection, the undisputed fact that their homes are in grave danger, and all of the other concerns cited above, the Commission decided that because a previous neighbor had signed a partial waiver of the right to shoreline protection, the applicants would be required to redesign the project to eliminate the section of wall in front of 245 Pacific Avenue.[2] The motivation for the Commission's decision was not based on

[2] The motion adopted by the Commission was as follows: "to allow seawall on the two properties that are pre-Coastal and are entitled to protection under 30235 subject to revised plans for ED review and approval for the projects to have sufficient protection just for those two properties." (Hearing Transcript at 44:18–22.) The wording of the motion demonstrates the Commission's

sound engineering principles or any duly enacted law or policy, but rather "to really send a message that the Commission is serious about seawalls" (Hearing Transcript, Mar. 7, 2019, at 25:8–9), to "take a stand on seawalls" (*id.* at 25:19), and to punish supposedly "reckless development" (*id.* at 27:12). Commissioner Howell aptly stated: "there is to me a hint of injustice to the ones that are entitled to a seawall to say [no] just to punish this one." (*Id.* at 40:2–4.)

This request for reconsideration is therefore made on the following grounds:

- All alternatives to the originally proposed design would result in severe and irreversible damage to the bluff environment.

- During construction, the bluff would be destabilized and put at risk, at a minimum, the residences at 235 and 241 (fully entitled to protection), 245 (entitled to protection for the portion of the residence behind the 40-foot setback), and 249 (fully entitled to protection and an innocent bystander) Pacific Avenue and additional properties to the north.

- Destabilization of the bluff during and after construction would cause danger to human life—the homeowners, beachgoers, and the construction workers themselves.

- All alternative designs would require approximately 25 feet of lateral support wall in the area in front of 245 Pacific Avenue; this is not possible if the applicants are not allowed to have any part of the structure(s) extend onto 245.

- These alternatives would result in the 245 Pacific Avenue property being more susceptible to damage from erosion than if there were no wall at all.

- These alternatives would be inconsistent with the Solana Beach LUP and other provisions of the Solana Beach Municipal Code; the city engineer and city planner have already informed us that they would recommend that city council deny the necessary permits to build this sort of structure on the bluff.

- These alternatives would not provide long-term protection; additional shoreline protection measures would be necessary within a few years.

- The Commission failed to consider that the so-called seawall waiver for 245 was only a partial waiver; a seawall is justified to protect the portion of the residence behind the 40-foot setback, which is at risk and is not subject to the waiver.

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fundamental misunderstanding of the application before them. The application was for a single project, not three, consisting of a single seawall, not three. Further, the application did not propose to build the seawall on any of the applicants' land, but rather on city-owned land in front of the properties.

2. Standard for reconsideration.

An applicant may request reconsideration as to the denial of a permit, or the terms or conditions attached to a permit, "[a]ny time within thirty (30) days following a final vote upon an application for a coastal development permit" by giving notice to "the district office at which the original permit application was filed …." (Cal. Code Regs., tit. 14, § 13109.2(a).)

Grounds for reconsideration are "either that there is relevant new evidence which, in the exercise of reasonable diligence, could not have been presented at the hearing on the matter or that an error of fact or law has occurred which has the potential of altering the initial decision." (Pub. Res. Code, § 30627(b)(3).) Both grounds for reconsideration exist here.

As to the first ground, the applicants did not obtain engineering plans or in-depth analysis regarding a return wall or other alternative shoreline protection structures for several reasons: (a) such alternatives are not preferred or contemplated under Solana Beach's certified LUP; (b) Commission staff did not request or require plans or in-depth analysis of such alternatives during the application process;[3] (c) it was obvious from the outset that any alternative to the proposed design would have a much greater impact on the bluff, would not be practical, and would not provide adequate long-term protection to existing structures; none of the alternatives, therefore, would be the least environmentally damaging practical alternative, or LEDPA, and any plans created or in-depth analysis performed of such alternatives would be a wasted effort; and (d) Commission staff recommended approval of the applicants' proposed design. The applicants' engineers have now given further consideration to such alternatives and have found them to be totally infeasible. Indeed, as explained in the accompanying engineering analysis, the applicants' engineers would not even undertake such a project, and it is likely no qualified engineer would undertake it.

As to the second ground, the Commission's decision is based on both factual and legal errors. Factually, the decision was based on the erroneous assumption that the alternative designs—which were conceived of by staff and the Commission at only the most abstract level—are feasible from an engineering standpoint, considering factors of effectiveness (both long and short term), stability, safety to human life, increased risk to neighboring properties, and environmental damage. Legally, the decision was based on the erroneous assumption that the alternatives are consistent with the Coastal Act and the Solana Beach certified LUP and could be legally permitted. As explained below, the alternatives are not feasible and are inconsistent with numerous Coastal Act and LUP policies.

[3] The only alternative analysis requested during the application process related to the alternative of removing or relocating the applicants' houses. Staff ultimately agreed with the applicants that this was not required.

3. Discussion.

a. For many reasons, the suggested alternatives are not feasible.

As explained in greater detail in the accompanying Alternatives Review by John Niven, P.E., which is incorporated herein by reference, there are numerous problems with each of the suggested alternatives that would prevent their implementation, or at best make them highly inadvisable:

- All of the alternatives would increase damage to the bluff environment.
- During construction, the bluff would be destabilized and put the residences at 241, 245, and 249 Pacific Avenue at greater risk—which this whole project was originally supposed to prevent.
- There would be unnecessary danger to human life—homeowners, beachgoers, and construction workers.
- All of the alternative designs include structures that would be unstable without lateral support from the lower coastal bluff below 245 Pacific Avenue; such structures cannot safely be built if the applicants are not allowed to have any part of the structures extend across the lower coastal bluff below 245 Pacific Avenue.
- The alternatives would make the 245 Pacific Avenue property more susceptible to damage from erosion than if there were no wall at all.

These alternatives, even if they could be implemented, would not provide long-term protection, so additional shoreline protection measures would be necessary within a few years. Moreover, assuming for the sake of discussion that the alternatives were possible physically, they could not be implemented legally, as explained further below.

b. The suggested alternatives to the proposed project are inconsistent with numerous policies of the Coastal Act and Solana Beach certified LUP.

The Solana Beach LUP accepts that "some amount of lower bluff protection has been and will continue to be unavoidable to protect existing structures in danger from erosion pursuant to Section 30235 of the Coastal Act." (Solana Beach LUP, ch. 4, p. 12.)

Where, as here, a seawall is needed to protect existing structures, the LUP is very specific about what designs are preferred:

> When bluff retention devices are unavoidable, encourage applicants to pursue *preferred bluff retention designs as depicted in Appendix B* of the LUP when required to protect an existing principal structure in danger from erosion. *All future bluff retention device applications*

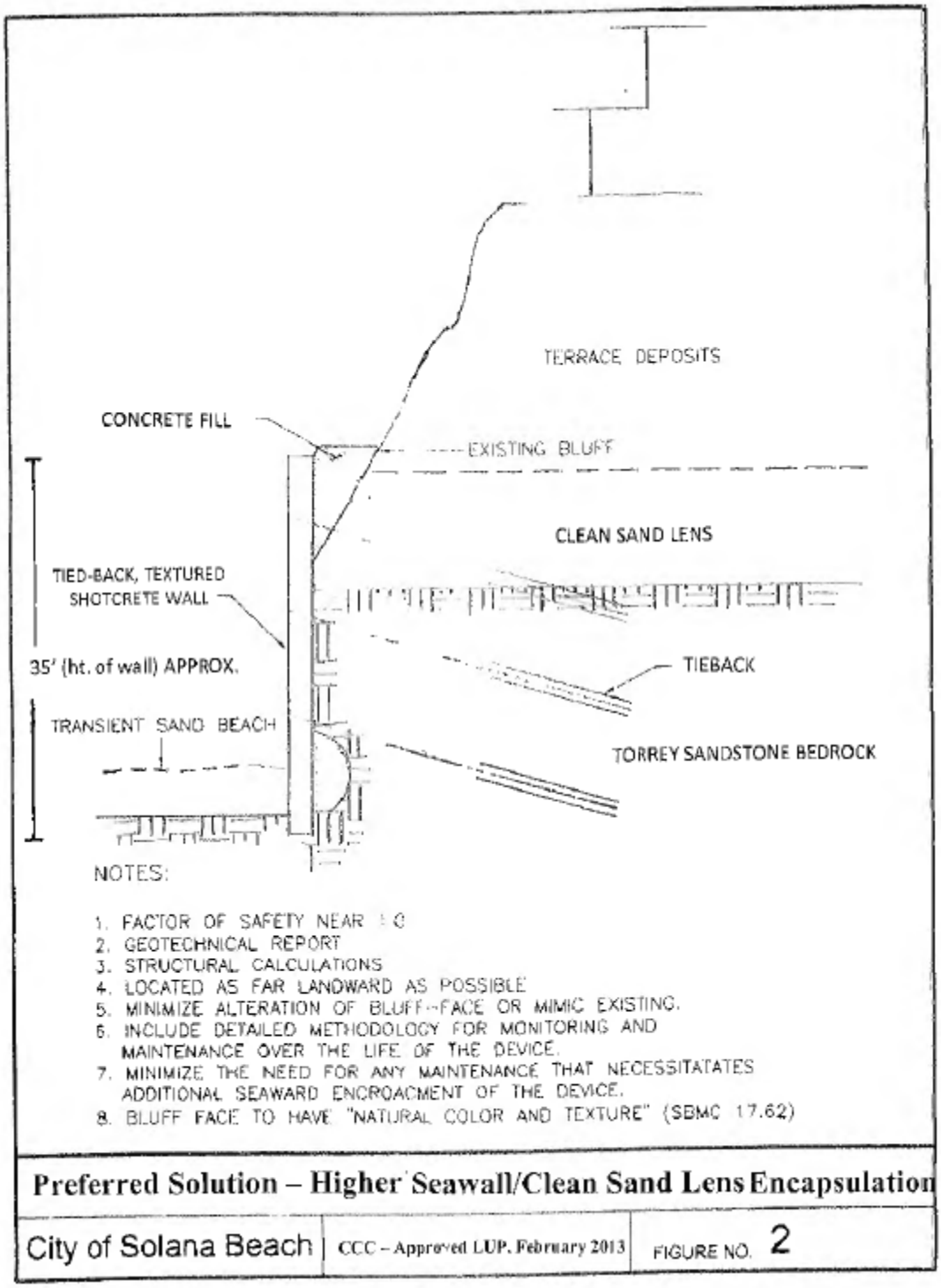
> *should utilize these designs as the basis of site-specific engineering drawings to ensure consistency with the LUP.*

(*Id.*, Policy 4.32 [emphasis added].) The explanatory section of the LUP states with even more specificity:

> The following describes the types of preferred bluff retention systems to protect the lower bluff only: [¶] … [¶]
>
> Higher Seawall/Clean Sand Lens Encapsulation (See Appendix B Figure 2) – *If the clean sand lens has been exposed, it may be necessary to build a seawall high enough cover this segment of the bluff face. This method consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits.* The wall is required to have a textured face mimicking the existing material. *If treated at this stage, the bluff retention system will minimize or prevent the need for future mid or upper stabilization.*

(Solana Beach LUP, ch. 4, pp. 12–13 [emphasis added].) The present application is made under precisely the scenario contemplated by the LUP: "the clean sand lens has been exposed" and needs to be encapsulated "to minimize or prevent the need for future mid or upper bluff stabilization." (*Ibid.*)

Figure 2 of Appendix B, cited above, shows what this type of seawall looks like:



The proposed seawall is identical in concept to Figure 2 and is fully consistent with the LUP.

The alternatives considered by the applicants' engineers are the following: additional upper bluff caissons, grade beam, and tiebacks (Alternative 1); a lateral interlocking block wall from the top of the 241 seawall to the top of the bluff (Alternative 2A); and a lateral caisson/grade beam/tie-back/shotcrete wall from the top of the 241 seawall to the top of the bluff (Alternative 2B). The latter two alternatives, which have lateral walls all the way up the face of the bluff, are not included in the LUP as "preferred" shoreline protection systems. In fact, such systems are not contemplated or even mentioned anywhere in the LUP.

Furthermore, all of these alternatives directly conflict with multiple LUP policies:

Under the LUP, shoreline protection should be designed to "preserv[e] the maximum amount of unaltered or natural bluff face." (Policy 4.38.) All of the alternatives, with their gargantuan structures, would diminish the amount of unaltered or natural bluff face.

Under the LUP, shoreline protection should be designed to "[m]inimize alteration of the bluff face." (Policy 4.45(2).) All of the alternatives would make drastic alterations to the bluff face and would require frequent additional alterations in the future.

Under the LUP, shoreline protection should be designed to "[m]inimize visual impacts from public viewing areas." (Policy 4.45(3).) All of the alternatives would have a much more intrusive visual impact than the proposed wall, which would blend into the natural bluff.

Under the LUP, shoreline protection should be designed to "[m]inimize impacts to adjacent properties including public bluffs and beach area." (Policy 4.45(4).) All of the alternatives would impact adjacent private properties by undermining lateral support. And all of the alternatives would impact the public bluffs and beach area by increasing the risk of dangerous bluff collapses.

Under the LUP, shoreline protection should be designed to "preclude the need for a larger coastal structure or upper bluff retention structure." (Policy 4.49(a)(2).) All of the alternatives would do the opposite: they would increase the need for larger coastal structures and upper bluff retention structures—both now and, to an even greater extent, in the future.

Under the LUP, shoreline protection should be designed "[t]o achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged." (Policy 4.55.) All of the alternatives are inconsistent with all of these goals: they would be much more difficult (or even impossible) to maintain; they would not be aesthetically pleasing (as noted, the Commission used terms such as "ugly" and "horrific" to describe such structures); they would make the shoreline less safe; and they would eliminate the possibility of coordination among property owners to maintain and repair the structures.

Under the LUP, the city and/or Commission must certify that "[t]he location, size, design and operational characteristics of the proposed coastal structure 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 coastal structure

and the coastal structure is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP." (Policy 4.49(a)(4).) All of the alternatives *would* create such adverse affects. All of the alternatives are *not* the minimum size necessary to protect the principal structure. And it would be difficult (or impossible) to design the alternatives to minimize environmental impacts.

The alternatives proposed by the Commission are thus inconsistent with at least eight policies of the Coastal Act and LUP. It is no wonder that city staff has advised us that the alternatives would not be recommended for approval. With both the city's geotechnical engineer and coastal planning consultant recommending denial, there is zero likelihood that the city council would approve such alternatives.

c. The Commission has misapplied the seawall waiver.

The way the Commission has applied the so-called seawall waiver here, one would think that the previous owners of 245 Pacific Avenue had signed some guarantee that no seawall would ever be constructed in the vicinity of the property, and the property would never benefit, even incidentally, from a seawall. What the document actually states is as follows:

> The landowner waives all right to construct any upper or lower bluff stabilization devices (other than "preemptive" filling of seacaves at the the [*sic*] base of the bluff as approved through a coastal development permit) to protect that portion of the residence located seaward of the 40 foot bluff top setback …, in the event that such portion of the structure is threatened or subject to damage from erosion, storm wave damage, or bluff failure in the future ….

(Deed Restriction, Aug. 20, 1996, at p. 3A.)

Two points are important to emphasize here. First, the prior owner did *not* waive any right to bluff protection for the portion of the house *landward* of the 40-foot setback. The applicants can demonstrate that the landward portion of the house is in danger and requires protection. (See memorandum from John Niven, P.E., to Karl Schwing et al., Mar. 29, 2019, at pp. 5–8.) Reconsideration is thus justified based on the Commission's misunderstanding of the scope of the deed restriction and misunderstanding of the threat to the structure landward of the 40-foot setback.

Second, the proposed seawall cannot be conceptually or physically divided into three pieces, each "belonging" to one of the houses. What the applicants are proposing to construct is a single seawall at the base of the bluff, on city property (with the city's authorization), to protect the houses at 235, 241, and 249 Pacific Avenue collectively. None of these properties have deed restrictions regarding a seawall. This single seawall would also protect the portion of the house at 245 Pacific Avenue behind the 40-foot setback, which likewise is not subject to a deed restriction. Any protection provided to the portion of the house seaward of the 40-foot setback would be purely incidental to the undisputed rights of all four houses to protection.

4. Conclusion.

Bluff failures do not respect property lines. There is no dispute that the applicants who own 235 and 241 Pacific Avenue, along with the non-applicant owner of 249 Pacific Avenue, need and are legally entitled to the protection of an effective seawall. They should not be denied this protection just to punish the owner of 245 Pacific Avenue, whose predecessor signed a partial deed restriction that does not restrict a seawall in this circumstance. Nor should they be required to attempt to construct "horrific" alternative structures that, even if possible to build, would indisputably be less effective and more environmentally damaging, and—most importantly—would be in gross violation of the City of Solana Beach certified LUP.

Please let us know when you are available to discuss the issues raised in this letter and accompanying materials.

Very truly yours,

THE JON CORN LAW FIRM

Lee M. Andelin

cc: Deborah Lee (by email only)
Eric Stevens (by email only)
Cort Hitchens (by email only)
Karl Schwing (by email only)
Joseph Street (by email only)
Leslie Ewing (by email only)
Jon Corn (by email only)
Anders Aannestad (by email only)
Bob Trettin (by email only)

Enclosures

SOIL
ENGINEERING
CONSTRUCTION INC.

March 29, 2019

TO: Karl Schwing, Deputy Director
California Coastal Commission

Leslie Ewing, Coastal Engineer
California Coastal Commission

Joe Street, Coastal Geologist
California Coastal Commission

Eric Stevens, Coastal Planner
California Coastal Commission

FROM: John Niven, P.E.
Soil Engineering Construction, Inc.

RE: Coastal Commission Action; CDP #6-18-0288
Request for Clarification of Coastal Commission Direction

As the engineer of record for CDP #6-18-0288, on behalf of the applicants, Soil Engineering Construction, Inc. (SEC) is unsure how the Commission's action on this CDP application can be implemented and is requesting Commission staff's assistance and advice on whether this decision should be brought back to the Commission for reconsideration.

At the March 7th public hearing of the California Coastal Commission Item Th20b, CDP #6-18-0288, was approved with two Commission imposed requirements:

1. As approved by the Commission, a segment of the seawall which crossed below the property at 245 Pacific Avenue was removed from the permit;

2. Staff was directed to resolve the issue of protecting the 241 residence from imminent failure originating along the northern lateral side of the bluff between 241 Pacific and 245 Pacific.

The Commission's direction on Item #2 above was primarily based on the following comment found on Page 2 of the staff report:

> *"While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection on adjacent lots."*

There was no meaningful discussion or analysis of this hypothetical alternative, no determination as to what it would look like or how it would be engineered – either in the staff report or at the public hearing --- because it was not a part of the applicants' proposed project or coastal staff's recommendation to approve the applicants' proposed project. We were therefore extremely surprised when the Commission directed coastal staff and the applicants to implement this alternative.

On Thursday, March 14, 2019 we discussed this matter with Coastal Engineer Leslie Ewing and Coastal Geologist Joe Street. We expressed grave concerns about how, or if, the Commission's direction could be accomplished. Subsequent to this meeting, more detailed engineering analysis has been provided to various alternatives that were referenced in the staff report and discussed in our March 14th meeting with staff.

Based on our review of potential alternatives to a seawall fronting 245 Pacific, it is our conclusion that there are no viable alternatives to a seawall crossing at least a significant portion of 245 Pacific to assure currently needed protection to 241 Pacific.

It is Soil Engineering Construction's professional opinion that any lateral east/west wall proposed to be constructed between 245 Pacific and 241 Pacific would require a minimum 20' - 25' northerly extension of the approved seawall at 241 Pacific, across portions of the bluff below the 245 property. This would be an attempt to prevent further failure of the lower coastal bluff and the overlying clean sand lense that would result in undercutting and failure of any lateral wall that could be designed to provide protection to the 241 Pacific residence.

As evidenced by attached site photo, the mid-bluff to upper-bluff areas between 241 Pacific and 245 Pacific have already experienced substantial failure. That this failure is continuing is supported by ongoing site visits during the past 2 ½ years of the permitting process with the City of Solana Beach / California Coastal Commission, and during our most recent site observations on March 18, 2019.

241 Pacific currently has a Factor of Safety of 1.1 extending from the clean sand lense at 245 Pacific to the 241 residence. Also, while not a part of this permit, 249 Pacific faces similar impacts which were referenced in the staff report. The residence has a 1.16 Factor of Safety.

Several alternatives to a seawall crossing the coastal bluff below 245 Pacific – alternatives that would still provide stabilization and long-term protection to 241 Pacific -- have received extensive review and have been determined to be infeasible:

1. Construction of a lateral block wall (inter-connecting block wall with geogrid), which has no deepened foundation or tie-backs to provide retention support would not be feasible.

   Without a +/- 25' northerly extension of the approved lower bluff seawall at 241 Pacific, there would be no support to prohibit the continued, ongoing failure of the clean sand lense and mid-to-upper bluff at 245 Pacific onto the 241 site. The lateral block wall would experience near immediate failure, possibly during its construction. Such failure would also result in the failure of any geogrid reconstructed bluff at 241 Pacific.

2. Similarly, construction of a far more substantial, caisson/ grade beam/tieback/ concrete-surfaced lateral wall between 241 and 245 Pacific would also require a +/- 25' northerly extension of the approved lower bluff seawall at 241 Pacific. Absent such an extension, any attempt to place caissons could fail during construction or shortly thereafter. Another concern associated with this system would be the additional, expedited damage that would occur to the mid-to-upper bluff at 245 Pacific during the system's construction. The applicant at 241 Pacific would likely incur liability associated with any expedited failure below 245 Pacific which would also ultimately impact the 249 Pacific property, north of 245 Pacific.

3. Soil Engineering Construction has also reviewed the potential of surfacing and installing additional tiebacks and grade beams across the permitted below-grade caisson retention system at 241 Pacific. This option would negate any opportunity to reconstruct the failed mid-bluff at 235 Pacific and 241 Pacific, and the system would require additional caissons extending +/- 16'-24' toward Pacific Avenue between 241 Pacific and 245 Pacific, as well as a below-grade caisson / grade beam / tieback retention wall system across 235 Pacific and extending +/- 16' – 24' toward the street between 235 Pacific and 231 Pacific. This upper bluff retention wall system, in tandem with the approved seawalls, could safeguard 235 Pacific and 241 Pacific. But, as noted by Coastal staff, it would be a system that would, in the near-term, require future upper bluff retention walls to the south of 235 Pacific and to the north of 245 Pacific.

The properties at 231 Pacific and 249 Pacific, which adjoin the subject permit site properties to the south and north, respectively, would likely experience mid to upper- bluff failure in a relatively short period of time if the significant mid to upper-bluff failures at 235 and 241 are allowed to expand. Qualified permit applications for rear-yard upper bluff retention wall systems across 231 Pacific and 249 Pacific would likely be submitted within a relatively short period of time. This would ultimately result in the properties at 231, 235, 241 and 249 Pacific all having +/- 35' high lower coastal bluff seawalls and an additional 100 lineal feet of +/- 20' high upper bluff walls. Over a period of years, perhaps decades, continued mid- to upper bluff failure to the north and south of these properties would result in the need for even more upper bluff wall systems. We do not believe the City of Solana Beach would find this alternative consistent with their LCP and Municipal Code.

Additionally, when recommending approval of the 241 Pacific upper bluff retention system, Coastal staff's 2008 report noted: *"The proposed below-grade caisson system will provide immediate, albeit temporary, protection to the existing residence by delaying further erosion of the upper bluff. As the applicant's geotechnical report acknowledges, erosion of the lower and mid bluff will continue unabated until, at a minimum, a lower seawall is constructed at the base of the bluff."*

It should be noted that without a lower coastal bluff seawall across a significant segment of 245 Pacific, the caisson system at 241 Pacific will remain subject to the same impacts as addressed by coastal staff in the 2008 report.

On March 25, 2019 we met with City of Solana Beach staff to discuss the above-referenced potential alternatives to the construction of a lower coastal bluff seawall adjacent to 245 Pacific Avenue.

The City's contracted geotechnical engineer noted that he would not recommend approval any lateral wall system that was not supported by a seawall that extended to the north and south of the lateral wall, thus providing reasonable support for such a system. The City's contracted coastal planning consultant noted that the construction of a massive lateral wall system, including caissons, tiebacks, grade beam and concrete exterior finish, a system which would need to be implemented on both sides of the 245 Pacific property, was not even an option addressed in the City of Solana Beach LUP.

Based on these review comments, it is highly unlikely that any of the alternatives to a seawall adjacent to 245 Pacific that would provide protection to 241 Pacific (and ultimately to 249 Pacific) could obtain city permitting approval.

Finally, a slope stability analyses at 245 Pacific indicates that the segment of the residence setback 40' from the top of bluff has a factor of safety of 1.21 when only the surcharge from that portion of the residence that is set back 40' is considered. The pseudostatic factor of safety at the 40' setback is 0.932.

This means that those portions of the residence that are setback 40' could be considered as currently in need of support. Further, a single additional failure event will result in a lowered Factor of Safety level which would likely place the areas of the residence which are setback 40' under imminent threat of damage / failure.
The materials submitted, reviewed and concurred with by coastal staff did indicate extremely low factors of safety at the 241 residential structure, extending from the bluff failure at 245 Pacific. Because this posed the most significant and immediate impact, we addressed the factor of safety in this area as the basis for requesting a permit to construct a seawall on the bluff below 245 Pacific that was designed to protect 241 Pacific (and to protect 249 Pacific, although that property was not a participant in the CDP.)

We also believe, however, that reaffirming documentation relative to the 245 residence's factor of safety 40' landward of the top of bluff constitutes evidence that deserves the Commission's review and consideration. Even if it were possible to provide the massive, visually and structurally impactive lateral walls that would be necessary to protect 241 Pacific and, ultimately, 249 Pacific at this time, it would be highly inadvisable to construct such a system knowing that a seawall fronting 245 Pacific to protect portions of the residence set back 40' or more is potentially capable of being approved at this time ... or would certainly be warranted under Section 30235 of the Coastal Act in the very near future.

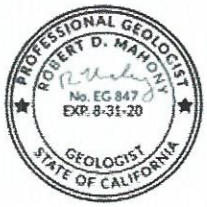
In summary, we believe that direction from the Commission to Coastal staff to "design" the lateral protection solution for 241 Pacific without any further Commission involvement was too general in nature. We also assume that Coastal staff would be uncomfortable mandating an engineering solution that would be deemed unworkable and incapable of receiving City of Solana Beach permitting under the city's Municipal Code and LUP.

We seek your advice and input as to how this item should be brought back to the Commission for reconsideration or clarification. The applicants' representatives are certainly prepared to formally request reconsideration within the legal time-frame, unless Commission staff can offer an alternative means of meeting the Commission's direction.

Respectfully submitted,
SOIL ENGINEERING CONSTRUCTION, INC.

John Niven, P.E.

Robert D. Mahony, G.E., C.E.G.



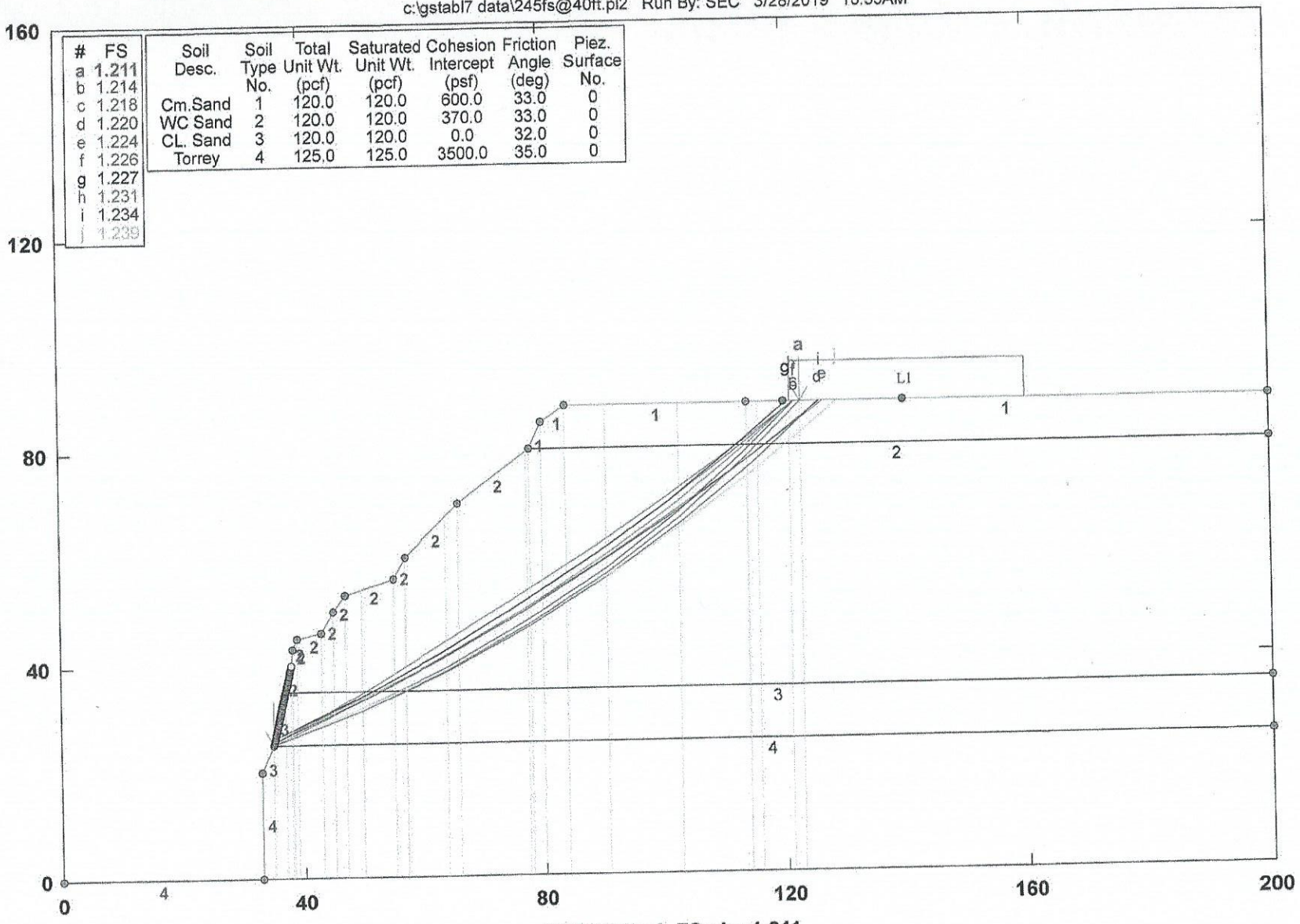
ATTACHMENTS;

245 Pacific Ave. Existing Cond, FS @ 40'Setback w/ Surcharge 40' and Eastward

c:\gstabl7 data\245fs@40ft.pl2 Run By: SEC 3/28/2019 10:55AM

#	FS
a	1.211
b	1.214
c	1.218
d	1.220
e	1.224
f	1.226
g	1.227
h	1.231
i	1.234
j	1.239

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Cm.Sand	1	120.0	120.0	600.0	33.0	0
WC Sand	2	120.0	120.0	370.0	33.0	0
CL. Sand	3	120.0	120.0	0.0	32.0	0
Torrey	4	125.0	125.0	3500.0	35.0	0



GSTABL7 v.2 FSmin=1.211

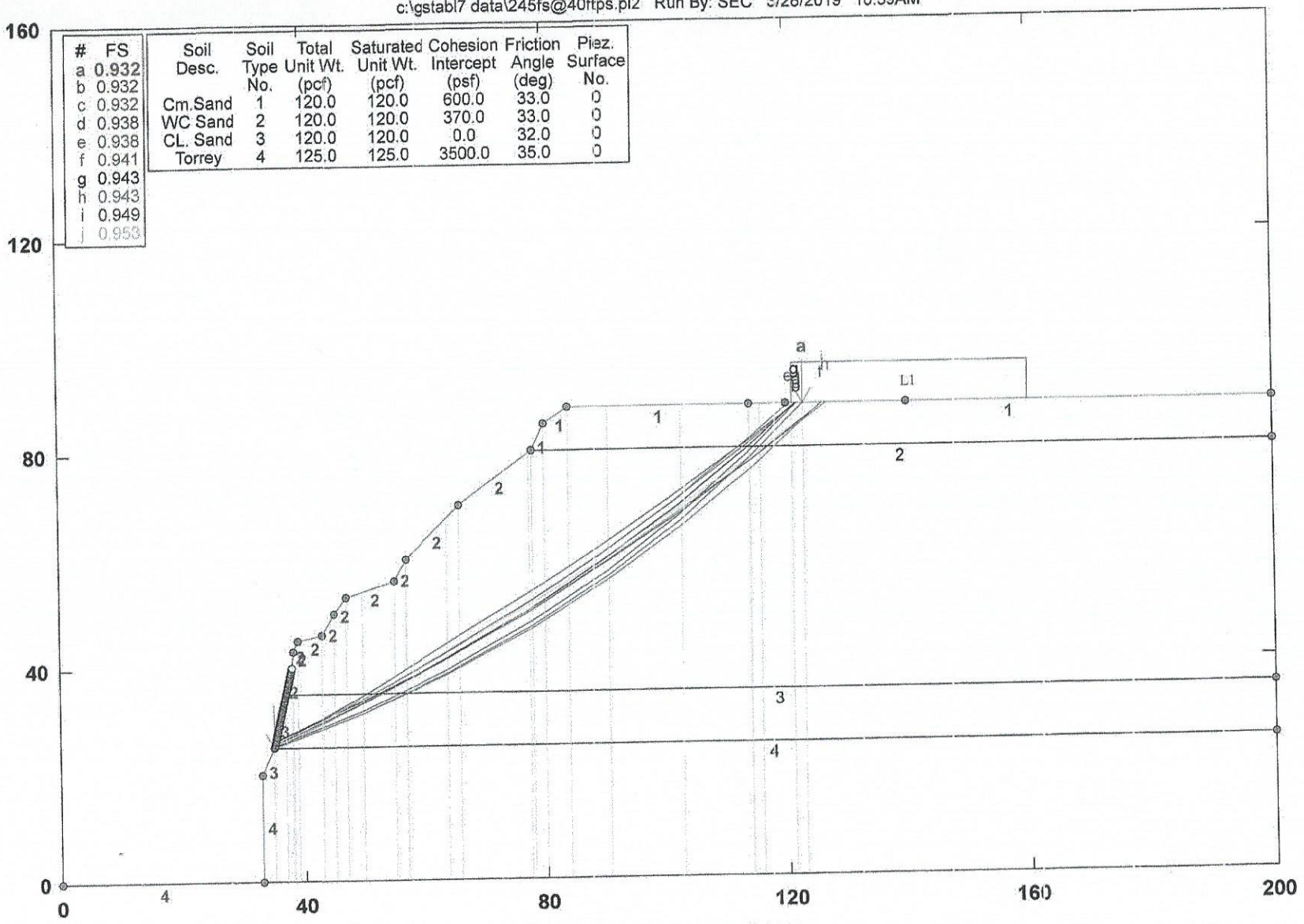
Safety Factors Are Calculated By The Modified Bishop Method

245 Pacific Ave. Pseudostatic, FS @ 40' Setback w/ Surcharge 40' and Eastward

c:\gstabl7 data\245fs@40ftps.pl2 Run By: SEC 3/28/2019 10:59AM

#	FS
a	0.932
b	0.932
c	0.932
d	0.938
e	0.938
f	0.941
g	0.943
h	0.943
i	0.949
j	0.953

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Cm.Sand	1	120.0	120.0	600.0	33.0	0
WC Sand	2	120.0	120.0	370.0	33.0	0
CL. Sand	3	120.0	120.0	0.0	32.0	0
Torrey	4	125.0	125.0	3500.0	35.0	0



GSTABL7 v.2 FSmin=0.932

Safety Factors Are Calculated By The Modified Bishop Method

Alternatives Review

**A review of potential alternative protective measures for 241 Pacific Avenue
in response to Coastal Commission action
to delete the proposed seawall at 245 Pacific Avenue
from Commission approval of CDP #6-18-0288**

On March 7, 2019, the California Coastal Commission acted to approve CDP #6-18-0288, but included two changes to the project that necessitated this review of alternative coastal protective measures:

** The Commission removed the proposed segment of the seawall that fronted 245 Pacific from the approved permit; and

** The Commission authorized the Executive Director of the Coastal Commission to approve a necessary alternative to protect the residence at 241 Pacific from failure originating on the bluff below 245 Pacific.

These actions by the Commission were based, in large measure on two items:

** The current owner of 245 Pacific was bound by a deed restriction accepted by the previous owner which waives the right for a seawall to protect portions of the structure seaward of the 40-setback from the top of bluff; and

** The Coastal staff report for CDP 6-18-0288 stipulated that "While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection."

As will be highlighted through this review, the "larger, more impactful shoreline protection" alternatives referenced by staff will be documented to be infeasible, which will leave an approved project wherein 241 Pacific Avenue is not protected from significant impact as a result of ongoing bluff erosion / failure that is not restrained by the limits of the approved permit. Further, the alternatives create risks to life, private and public property, and the environment, all of which would be avoided if a seawall is permitted as originally proposed by the applicants and recommended by staff.

Existing Conditions

The existing conditions on the coastal bluffs adjacent to the subject permit properties are such that failures of the mid / upper bluff have exposed an approximately 10 +/- foot thick friable clean sand layer near the base of the terrace deposits. This sand layer is similar in appearance, and in the failure mechanism, to those previously identified in the vicinity of, and adjacent to, the 200, 300, 400 blocks of Pacific Avenue, as well as the entire bluff area extending for thousands of feet south of Fletcher Cove to the City of Del Mar.

As observed on the subject properties and based on observations elsewhere in Solana Beach, the clean sand lense, and in turn the overlying Terrace deposits, are presently failing progressively to the east and will not achieve a stable geometry until there is likely a slope angle of approximately 26 to 33 degrees. Because of continued sea cliff erosion, this progressive failure mechanism will continue to undermine the overlying Terrace deposits so that the coastal bluff will never reach a stable equilibrium without some for of engineered stabilization devices.

Th unstable geologic composition of the lower bluff and the friable clean sand layer, as well as the failing mid and upper bluff, are the primary cause of the instability of the bluff which imminently threatens to cause damage or failure to the residential structures on the subject properties.

Project as Approved by the City of Solana Beach

EXHIBIT 1 provides a simulated illustration of the 150' long seawall, bluff reconstruction and native landscaping that was approved by the City of Solana Beach.

The following is a review of alternatives to the project which was approved by the City of Solana Beach and proposed by the applicants in CDP #6-18-0288:

Alternative 1: Additional Upper Bluff Caissons / Grade Beam / Tiebacks
(EXHIBIT 2 provides a simulated illustration of this system)

The implementation of this alternative across the rear yards of 241 and 235 Pacific would require the placement of additional caissons at 241 Pacific extending landward along the property's northern boundary for a span of 16' to 24'. At present, the 241 residence has an estimated 1.1 factor of safety extending toward its northwest corner from the failing bluff below the 245 Pacific property. The existing, deeply exposed caissons at 241 Pacific could receive an additional row of tie-backs, be extended in depth and receive a shotcrete wall covering. However, the likely short-term exposure of any caissons placed between 241 Pacific and 245 Pacific could not be addressed as there would be insufficient space along the property's side yard to provide additional tiebacks or to surface the areas between the caissons to prevent continued failure from reaching the residence at 241 Pacific.

Once side-yard caissons became exposed as a result of the erosion / failure originating below the 245 Pacific property, failure would continue between the caissons to impact the 241 Pacific residence. The side-yard caissons could ultimately fail completely at such time that the bluff failed to a depth where the lower segment of the caissons was not restrained.

Similarly, this alternative would also require immediate implementation of the rear-yard upper bluff caisson / grade beam / tieback system above the failing bluff at 235 Pacific, and a 16' – 24' landward extension of caissons placed between 235 Pacific and the property to the south, 231 Pacific. It is our professional opinion that the caissons at 235 Pacific would be exposed within +/- 5 years and require an additional row of tie-backs and concrete / shotcrete surfacing to

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complete an upper bluff retention wall. Similar to the caissons between 241 Pacific and 245 Pacific, the side yard would not allow the room to place an additional row of tiebacks or provide the concrete / shotcrete surfacing to complete a retention wall on the portion of the system extending landward between the residences at 235 Pacific and 231 Pacific.

We also note that the residence at 249 Pacific (north of 245 Pacific) has a 1.16 factor of safety extending from the failing bluff at 245 Pacific. The owner of this property would also be required, immediately, to obtain a permit for a rear-yard caisson / grade beam / tieback retention system which would have the same engineering concerns noted for the other properties for that portion of the system extending landward between 249 Pacific and 245 Pacific. There would not be sufficient space in the side yard to ultimately place an additional row of tiebacks or provide concrete / shotcrete surfacing.

In addition to the addressed engineering concerns with this alternative, the City of Solana Beach planning and geotechnical staff has expressed significant concern with the development of 150' of new upper bluff retention walls, approximately 20' to 25' in height, across properties that already have 35' high seawalls constructed or approved. The inability to reconstruct failed sections of the mid- to upper bluffs and the development of a two-wall system at each of these properties – with the long-term potential that the system would ultimately be required to be extended to additional properties to the north and south – is in direct conflict with several policies of the city's adopted LUP, including the following:

- Designs with a lower bluff seawall are "preferred bluff retention designs" under the LUP (Policy 4.32 and Appendix B);
- Shore protection should be designed to "preserv[e] the maximum amount of unaltered or natural bluff face" (Policy 4.38);
- Shore protection should be designed to "[m]inimize alteration of the bluff face" (Policy 4.45(2));
- Shore protection should be designed to "[m]inimize visual impacts from public viewing areas" (Policy 4.45(3);
- Shore protection should be designed to "[m]inimize impacts to adjacent properties including public bluffs and beach area" (Policy 4.45(4);
- Shore protection should be designed to "preclude the need for a larger coastal structure or upper bluff retention structure" (Policy 4.49(a)(2
- "The location, size, design and operational characteristics of the proposed coastal structure 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 coastal structure and the coastal structure is the minimum size necessary to protect the principal structure, has been designed to minimize all environmental impacts, and provides mitigation for all coastal and environmental impacts, as provided for in this LCP" (Policy 4.49(a)(4); and

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- "To achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged" (Policy 4.55).

It is highly unlikely that the Solana Beach City Council would permit such a system, particularly when such a system cannot assure the protection of the 241 residence, or the 249 residence that is not a part of the current permit, for the projected life of these structures.

Based on the engineering analysis and discussion with city planning and geotechnical engineering staff, completion of caisson / grade beam / tieback / surfaced upper bluff retention walls is not a viable or permittable alternative to the placement of a lower seawall at 245 Pacific and reconstruction / landscaping of the failed bluffs at 235, 241 and 245 Pacific.

Alternative 2: A: Lateral "Interlocking Block Wall from top of 241 seawall to top of bluff"; or,

B: Lateral "Caisson / Grade Beam / Tie-Back / Shotcrete Wall" from top of 241 seawall to top of bluff".

Initial Assessment of 2A and 2B: There is no lateral return wall system that can be engineered to traverse up the coastal bluff without first having the provision of a lower coastal seawall to both the north and south of such a system. Absent a seawall extending to both sides of such a lateral system, natural bluff erosion / undercutting / failure would undermine any lateral wall system and cause the system to fail. For this reason alone, no matter how impactful or structurally enhanced, we cannot recommend any lateral wall without an extension of the approved 235 / 241 Pacific seawall a minimum of 20' – 25' to the north.

Alternative 2A: (EXHIBIT 3 Provides a 2013 photo of Solana Beach bluffs depicting temporary lateral return walls with no foundation or tie-backs for bluff retention)

Should the approved 235 / 241 Pacific seawall be extended 20' to 25' to the north, an interlocking lateral block wall, which is normally considered to be a short-term measure (such as walls approved in the past at 357 Pacific and along the northern property line of 327 Pacific), could still not be successfully implemented at the subject property.

As noted, the coastal bluff below 245 Pacific has an exposed and receding clean sand lens and has already experienced mid- to upper bluff failure above the clean sand lens. For this reason, an interlocking block wall without deepened foundations would be quickly, perhaps immediately, undermined by ongoing erosion / failure extending from the coastal bluff below 245 Pacific. The City of Solana Beach's Third-party geotechnical engineering firm, GeoPacifica, Inc., has already stipulated that they would not recommend city approval of this type of wall.

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Alternative 2B: (EXHIBIT 4 provides a visual simulation of this system)
(EXHIBIT 5 provides an engineered drawing of the system)

Should the approved 235 / 241 Pacific seawall be extended 20' to 25' to the north, construction of a caisson/grade beam/tieback/shotcrete mid-bluff wall would still pose significant engineering concerns as placement of the caissons would undoubtedly result in further failure, during construction, of the coastal bluff below 241 and 245 Pacific. There would be a significant risk to the lives of workers and significant risk of litigation, both from the owner of 245 Pacific should construction accelerate failure on the bluff below his residence and from the owner of 241 Pacific should the wall fail during construction. As an engineering / contracting firm, Soil Engineering Construction, Inc. has more than 45 years of experience in coastal bluff stabilization projects. Our firm would not take on such a project, and it is our opinion that the permittees would be hard pressed to find any qualified firm to engineer / construct the project.

Further, both the City of Solana Beach's Third-party planning consultant and geotechnical engineering firm have stated that they would recommend denial of any permit application that proposed to construct a massive lateral wall designed to remain exposed to provide protection for the life of a residence. The planning consultant has stated in no uncertain terms that this is not even an option under the city's LUP and is in direct opposition to the city's stated preferences for the provision of coastal bluff protective measures. It is highly unlikely that such a project could receive City Council approval with both the planning and geotechnical staff members recommending denial.

Again, the Commission staff report stated: *"While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection."* In our professional opinion, this single sentence in the staff report, devoid of any specific description of the alternatives or analysis of their adequacy and feasibility, does not provide a sufficient basis for the Commission to conclude that an alternative form of shore protection without a seawall across the 50' gap to the north of 241 Pacific would be feasible or consistent with the Solana Beach LUP.

In short, we cannot make a determination that the "more impactful shoreline protection" referenced by Coastal staff is an acceptable engineering alternative. Moreover, from discussions with city staff, it is clear that they would not recommend such alternatives. Instead, city staff has suggested that such alternatives would be unsound and unacceptable from planning, engineering, and LUP compliance standpoints.

We have met with Coastal staff and requested their recommendations, should they be aware of any viable alternatives as stated in their report. Staff did not provide any viable alternatives. It thus remains our conclusion that the staff statement in the report was inaccurate to the extent the Commission construed it as implying that an alternative without the wall continuing across 245 Pacific would be viable. We strongly recommend that the project be returned to the Commission for a more thorough assessment of how the Commission will allow the owners of 241 Pacific to exercise their right under the Coastal Act to protect their home.

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It should again be emphasized that coastal bluff failures do not adhere to property lines. Both 241 Pacific and the 249 Pacific property, which is not a party to the current permit application, are currently threatened with impacts from bluff failures originating below the 245 Pacific property.

The Commission's action on March 7th leaves the 241 Pacific residence, and the 249 Pacific residence, under imminent threat of being undermined. Therefore, we believe that reconsideration by the Commission is vitally necessary.

Respectfully submitted,

SOIL ENGINEERING CONSTRUCTION, INC.

John Niven, R.C.E.

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SOIL ENGINEERING CONSTRUCTION

PHOTO SIMULATION


SOIL ENGINEERING
CONSTRUCTION
249 PACIFIC
245 PACIFIC
241PACIFIC
235 PACIFIC
231 PACIFIC
CLEAN
SAND LENSE
PIER/CAISSON/GRADE BEAM EXPOSURE 0-5
YEARS AFTER INITIAL SYSTEM CONSTRUCTION
DUE TO EXPECTED BLUFF FAILURE/EROSION
ALTERNATIVE 1

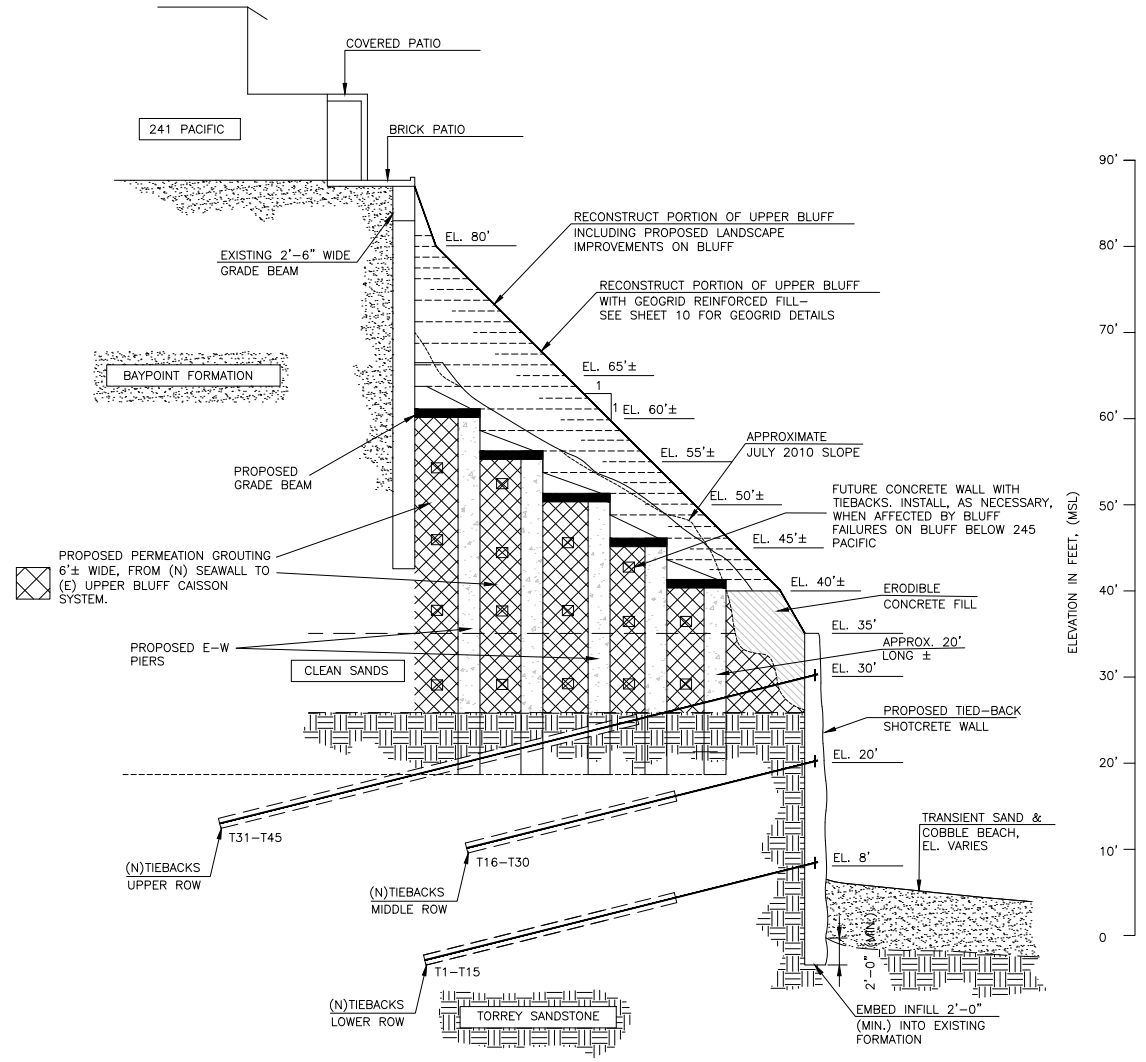
EXHIBIT 2

NOTE:
Example of Lateral Walls Designed to Provide Temporary Protection to Residential Structures and Areas of Geogrid Reconstructed Bluffs. Such Walls Must Be Supported by Lower Coastal Seawalls to Both the North and South.

EXHIBIT 3

EXHIBIT 4

ALTERNATE REPAIR OPTION



SECTION-PROPOSED
241 PACIFIC AVENUE
SCALE: 1"=10'

B
6

ABBREVIATIONS:

C.C.	-CENTER TO CENTER
C.O.	-CLEAN OUT
E.W.	-EACH WAY
(E), (N)	-EXISTING, NEW
N.I.C.	-NOT IN CONTRACT
P.T.D.F.	-PRESSURE TREATED DOUGLAS FIR
T.O.G.B.	-TOP OF GRADE BEAM
T.O.W.	-TOP OF WALL
T. & B.	-TOP AND BOTTOM
U.N.O.	-UNLESS NOTED OTHERWISE
V.I.F.	-VERIFY IN FIELD
B.O.W.	-BOTTOM OF WALL
G.B.W.	-GRADE BELOW OF WALL
T.O.C.	-TOP OF CONCRETE
T.O.G.	-TOP OF GRADE
E.F.	-EACH FACE

0 1" 2" 3"
ORIGINAL DRAWING MEASURE

AS-BUILT
By:_____Date:_____
R.C.E.:_____ Exp: _____

REGISTERED PROFESSIONAL ENGINEER ROBERT D. MAHONY No. C. 16459 No. GE 554 EXP. 06-30-19 CIVIL & GEOTECHNICAL STATE OF CALIFORNIA

EXHIBIT 5

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	ENGINEER OF WORK	CITY APPROVED CHANGES	APP'D	DATE	RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK	CITY OF SOLANA BEACH ENGINEERING DEPARTMENT	DRAWING NO.
By:_____ Fire Chief Date: _____	Reviewed By:_____ District Representative Date:_____	RH Drawn By				By:_____Date:_____ By:_____Date:_____	By:_____Date:_____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 6/30/18	DESCRIPTION: SDGPS-446 FD 2" BR. DISK IN TC PER ROS 14492 "L488718 1980 TRAVERSE POINT LS 4300 COUNTY OF SAN DIEGO" LOCATION: BRASS PLUG IN TOP OF CURB AT SOUTHEAST CORNER OF VIA DE LA VALLE AND SOLANA CIRCLE ELEV.: 62.647 DATUM: M.S.L.	CROSS SECTIONS-241 PACIFIC AVENUE FOR: 235-245 PACIFIC AVENUE, SOLANA BEACH, CA 92075 EMERGENCY REPAIRS TO COASTAL BLUFF	SBGR- Sheet 6 of 14

By: Robert D. Mahony Date: 06-30-17
Name: Soil Engineering Const., Inc.
R.C.E. 16459 Exp: 06/30/19

California Coastal Commission Hearing
3-7-2019

Transcribed by Carol A. Roberts, CSR
Kansas Supreme Court #1051

I N D E X

MR. KARL SCHWING: Madam Chair, that takes us on to item 20B and Eric Stevens is going to do the staff presentation on that matter.

We do have a staff PowerPoint.

MS. ERIC STEVENS: Item 20B is a proposal to construct shoreline armoring on the beach fronting three bluff-top properties.

Slide two. This site is approximately 600 feet north of Fletcher Cove, the city's primary beach access way.

Staff is recommending approval with special conditions. Staff has received two comment letters from the Surfrider Foundation in opposition to staff recommendation. And staff's understating the applicant is in agreement with staff recommendation.

Slide three. The project includes construction of 150-foot long, 35-foot high seawall on the public beach and bluff and construction of a 45 to 135-foot wide, approximately 50-foot high geogrid structure on the bluff face and removal of existing gunite.

Slide four. The proposed shoreline armoring would fill in the last remaining gap of natural bluff between a continuous seawall that fronts the bluff for the next five homes to the south and 24 continuous properties to the north.

Slide five. The applicants have demonstrated that

all three of the bluff top homes are danger from erosion dur to ongoing bluff collapse and exposure of the clean sand lens.

Once the clean sand lens is exposed until the base of the bluff is armored, the potential for bluff failure represents an immediate threat.

However in assessing the geologic threat, we also need to determine the that structures are entitled to a seawall under Section 30235 of the Coastal Act.

Slide six. The two southern homes were constructed prior to the Coastal Act and thus are considered existing. However, the northernmost home was approved by the Commission in ‘96 and is not an existing structure for purposes of 30235.

In addition, special condition of the Commission’s approval of the home allowed the property owner to build closer to the bluff edge but with the condition that they waive rights to armoring to protect the portion of the home within 40 feet of the bluff edge.

The portion of the home within 40 feet of the bluff edge is not currently threatened. Thus at this point, the Commission is not required to approve armoring to protect the residence.

Slide seven. Since the Commission is not required to approve shoreline protection to protect that home, staff

looked at whether it would be feasible to leave an unarmored gap fronting just the northernmost home. And to approve the armoring in front of the southern two homes.

This approach would be arguably most consistent with the intent of the Commission's previous approval, which clearly in avoiding the construction of any shoreline protection in front of the subject residence.

The Commission's engineer and geologist have looked at the project and believe it may be feasible to avoid constructing a wall at the base of the bluff below this home.

However, the scope and scale of the alternative to protect the structures that would be necessary to protect the adjacent homes would have more adverse impacts to coastal resources than the proposed wall.

As the unarmored portion of the bluff continued to erode landward, the return walls would need to be constructed and continually expanded up the bluff.

Furthermore, because of the exposed clean sands, the threat of a large bluff collapse would be present which could quickly damage the adjacent homes or permitted armoring resulting in the need for even more shoreline armoring.

This was a difficult recommendation for staff because we strongly believe in the integrity of the Coastal Act

policies that require the approval of protection for existing structures. As well as the commitment that property owners make when they waive their rights to future shoreline protection in return for choosing to develop in a hazardous location.

However, this is not the first time the Commission has seen a project in Solana Beach where protecting existing structures would result in a one-property gap in an otherwise continuous line of shoreline protection.

There have been three other examples where a seawall was approved fronting a home that had either waived their rights to shoreline armoring or was not currently threatened.

However, in each of these applications, the Commission determined that approval of the shoreline armoring fronting the gap property was the least environmentally damaging alternative.

Therefore, staff is recommending the proposed armoring be approved but only so long as to protect -- only so long as necessary to protect the existing structures entitled to protection, the two southern homes.

The applicants will be required to pay approximately $30,000 sand mitigation fee. In addition, the seawall would negatively impact public access by reducing public beach area.

This is the first shoreline armoring project that's subject to the city's approved public recreation fee program. Pursuant to the program, the applicants are required to pay approximately $128,000 into the public access fee program for the initial 20-year period.

It should be noted that after 20 years, the applicant will need to return to the Commission for an amendment assessing armoring for the subsequent 20-year period. And as you can see in this graphic, the armoring for years 20 through 40 will be significantly higher as currently they only need to pay for the direct encroachment and the first 20 years of erosion.

But when they come back in 20 years, they'll need to pay for the encroachment and the entire 40 years of beach that would have otherwise been created without the seawall.

In addition, in order to ensure future -- that any future redevelopment additions or major structure alternate -- alterations to these properties is consistent with the Coastal Act, the permit require that any future development of the bluff-top properties not rely on the permitted shoreline armoring.

An additional -- additional special condition would require removal of all the existing gunite on the bluff. Staff recommends that the proposed development be approved

with conditions. The appropriate motion resolution can be found on page six and the Commission engineer and geologist are available for any questions.

This concludes staff's presentation.

MR. STEVE PADILLA: Thank you, Mr. Stevens. Are there ex parte on this matter? Okay. Is there a speak -- I don't have a speaker so I'm not sure that we have anyone from -- representing the applicant.

All right.

MR. BOB TRETTIN: Yes, good evening. Test, is it on?

MS. DAYNA BOCHCO: Yes, Mr. Trettin --

MR. BOB TRETTIN: I just -- I'll leave it --

MS. DAYNA BOCHCO: -- how much time would you like?

MR. BOB TRETTIN: I'm going to reduce the amount I was going to request and ask for a maximum of 10 minutes and I will try not to use it.

MS. DAYNA BOCHCO: Okay, 10 minutes.

MR. BOB TRETTIN: I know you've had a long tough day.

MS. DAYNA BOCHCO: Thank you.

MR. BOB TRETTIN: Good evening. My name is Bob Trettin. 560 North Coast Highway 101, Suite 5 in Encinitas, California, representing the applicants, all

three applicants at the subject properties.

I had a presentation. I know you're probably not ready to hear another presentation but it was basically staff's presentation and I don't want to repeat it.

So I'm going to keep my time very short. We obviously, on behalf of the clients, support the staff report.

And relative to the last item you just heard, one of the things I wanted to say -- and relative potentially to some rebuttal comments I might like to make in a few minutes, this is really -- since 1996 a lot has happened in Solana Beach.

They've adopted, you know, a local coastal plan. They're working on the implementation plan. They have specific requirements.

One of the -- one of the concerns that this Commission should have and that's being expressed by Surfriders is gosh, how do we ever get rid of seawalls? You know, this property can do massive major redevelopment if it keeps it under 50 percent and it'll just go on and on and on, all these properties.

What I want to point out to you in Exhibit 4 of the staff report, there's a dotted line way up at the top. Unfortunately it's got very small description but that's the geologic setback line.

Way up by the street and so quite frankly these properties don't have a freebie to come in and do less than 50 percent. The boat -- as is noted on page 36 of the staff report, the city and/or the Coastal Commission have the right to say no.

So it's not the mandated, you can do less than 50 percent and you don't have to worry about, you know, arguing that the walls can't be relied on.

So I see the day where a property like -- as the staff example, 241 decides that they need to redevelop and they have to move back towards the street and redevelop a smaller, more modern house.

And at that point in time, the way the staff report's wording suggests, that wall would come down and so would the wall at 24 -- at -- when 241 came down, 249 would come down -- or 245 would come down, the one that's deed-restricted.

Now, the argument is, well, you can't take the wall down because it's protecting other properties. But if you were to look at Exhibit Number 4, what would end up happening is you would be taking the southern portion of 241 and the northern portion of 245 and when that day happens, you'll have a 50-foot increment wall that can be removed.

The other 25-feet would be protecting properties to

the north and south. And that's how you're going to get rid of walls in the long run I guess, if you're -- if you're planning on doing it.

Because these are very narrow properties as you can see from the geologic setback line, there's no place to build a new house. And some day, even if you build a new house smaller and closer to the street, it's going to need coastal bluff protection probably.

But there'll be day -- there'll be interim decades where it doesn't.

So obviously we do support the staff report. This was a tough one. You can't leave a 50-foot gap. I think most of you probably recognize that. And I think that staff has worded conditions that are a little more onerous than usual which we are receptive and understanding of and supportive of.

So with that, I would reserve the rest of my time for any rebuttal comments I need to make. And thank you for your time.

MS. DAYNE BOCHCO: Thank you, sir.

Okay. Surfrider, Kristen Brenner? Do you guys just want to say ditto?

How much time do you need?

MS. KRISTEN BRENNER: I think between the two of us if we have 10 --

MS. DAYNA BOCHCO: I'm sorry, hon.

MS. KRISTEN BRENNER: I'm sorry, between the two of us if we have 10 minutes, is that --

MS. DAYNA BOCHCO: Yes. That's fine.

MS. KRISTEN BRENNER: Okay, thank you. I know it's been a long day so thank you for taking the time to hear me.

I'm a resident of Solana Beach. I volunteer with the Surfrider Foundation and I took the day off of work to come up here to L.A. because I feel like this is really presenting an existential threat to our beaches.

Let's see. Did I press -- sorry. I'm here because of my family. This is my daughter, she's five. And I do feel like approval of this is really kind of emblematic of how we're letting down our children -- children and their future in the light of sea level rise and climate change.

This is another example if this is approved, of our unwillingness to make difficult choices now and to kick the can down the road.

She's potentially -- the beaches in Solana Beach could be gone under some sea level rise scenarios before she even graduates from high school.

We know what our future looks like in Solana Beach with sea level rise. We thought this January with the king tides, this picture is of Tide Beach Park. It's the

deepest beach in all of Solana Beach. And you can see even the deepest part of the beach, with wave run-up is completely inundated.

And the second picture is looking towards Fletcher Cove from Tide Park. There would be no way you could walk down this beach. The waves are crashing up against the bluffs.

And this is likewise pictures of Fletcher Cove, probably the second deepest beach in Solana Beach. King tides again, it was completely flooded and that one picture towards the bluff is looking towards the subject property. No possible way you could walk down the beach under sea level rise under a high tide conditions.

However, it doesn't have to be this way. When I walked down the subject site to take pictures of it for this meeting, I walked past this -- past this plaque which I walked back -- I walk past often as I visit -- visit Fletcher Cove. And it reminds us that the plaza park and mild ocean shore donated to the public by Ed Fletcher, the developer of Solana Beach.

These are -- these are our bluffs. These are the public's bluffs. These are not the private property homeowners' bluffs.

Looking at 235, 241 and 245 Pacific Avenue from the beach, I just again want to reiterate this is not their

bluff. It's my daughter's bluff. It's the people of Solana Beach's bluff. It's the people of California's bluff.

To be allowed a seawall despite -- despite a deed restriction, despite Coastal Act 30253, that prevents new development from any way requiring a seawall, is, it just kind of boggles my mind.

This is an example of how the beaches in California and Solana Beach are dying a death by a thousand cuts. These are three shots, kind of aerial shots going from Tide Park to Fletcher Cove and you can see that there is continuous seawall in front of 30 -- well if these -- if this seawall goes in, it will be a continuous seawall in front of 33 properties.

So essentially almost entire north side of Solana Beach will be armored if this -- if this is granted.

Waiting for redevelopment of a neighbor to remove a seawall also fails the smell test. This is 475 Pacific Avenue in 2015. This was granted a DRP or SDP, I can't remember which by the City of Solana Beach as it was a redevelopment that stayed below the 50 percent threshold.

It has a seawall so the seawall was not triggered to be removed. However, when I walked by when it was under construction I thought this doesn't look like redevelopment. This looks like a new home that's going

on.

Completely stripped down, this is below 50 percent. This is a pre-Coastal Act home. This is a new home to me when I look at this. But it stayed below 50 percent so to say that you're reassuring me that these seawalls will come down when someone redevelops their home is not reassurance because these people got a new home but they kept their seawall because they stayed below the 50 percent threshold.

Let's see. And also, you know, the -- saying that they're going to remove the seawall once a big enough gap -- I mean how big of a gap can we -- are we saying that we need before we can start moving a seawall? Is it three houses lose their seawall? You know, lose their right to their seawall? Is it five houses? Is it seven houses?

I mean this is just kind of like we've just daisy-chained the whole thing, all of Solana Beach. And it's going to be nearly impossible to remove the seawall.

You said -- and I wrote it down. We want to get to the place where there are no seawalls. We hate seawalls. I couldn't agree more and this is a really good place to start.

Instead of improving this, you should ask the -- or move the homes that are now threatened should be removed. If you must approve this, which I do not think that you

have to approve this -- this is the public's bluff. This is not the private property owners' bluff. They should have very stringent conditions placed on them, such as -- I think it was the applicants' person that was just here said well, then you know you can remove a little bit more of the seawall if either the people on either side re -- redevelop.

But you know a pocket beach could develop. So then maybe you should say well if you get this seawall then you have to have some kind of easement access across your property to grant the public access down to that pocket beach. Because they're certainly not going to be able to walk there, laterally walking down the beach.

Because we know the back of the beach is fixed with those seawalls and with sea level rise there's not going to be a beach for people to walk down.

So thank you for hearing my comments.

MS. JULIE CHEN: Thank you, Julia Chen here, policy manager for Surfriders San Diego.

I want to start by just going over the importance of the shift of when we took seawalls from a 20-year time limit or sunset clause to be revisited to the tying it to the life of the structure.

And the idea when that shift happened was that if you have an old house, one built before the Coastal Act,

you're entitled to protection. It was built before we knew better. But now we know better. So if you go in and redevelop or have a new home, you would no longer be entitled to that structure.

And so it's, it's relevant in this case. And I'll just use an analogy from parenting, which is pretty up front of mine for me right now. And sometimes I have to say no to my four-year-old and it can get really ugly.

But sometime -- that's better for him in the long run and that's better for my family. And maybe in this instance it's better to say no to 245 than to give them a seawall. Let it be ugly. Let there be return walls.

It's better for this one situation to be ugly in order to protect the principles of the Coastal Act. We're consistently tempted to fall into this trap of just one more time or it makes sense here or this is less obtrusive.

But our death is -- our coast is dying a death of a thousand cuts with this logic. We feel that it's important that you draw a line in the sand and say no to 245 Pacific. You had your chance. You decided to redevelop. You chose to build closer to the bluff than advised and signed to get a restriction waiving your right to armoring. The buck stops here.

We understand staff's dilemma but you have to

understand our dilemma as well. For the beachgoing public who are afforded these protections under the Coastal Act. Except where there are these exceptions where it's too hard to say no.

We need to start saying no in light of sea level rise. Otherwise there won't be a beach left to enjoy or defend.

What makes this situation even more egregious on page three of the staff report, this permit requires that any future -- any future development of this bluff-top property may not rely on this shoreline armoring to determine its site suitability for such development.

So no future development can rely on the seawall. How about the new development that will -- will be relying on it if approved? Furthermore, 245 Pacific Avenue applied for a 49-foot seawall in 2014 and was denied.

Sea caves also exist be -- below this property, just see our letter dated April 2018 in the addendum or in the correspondence, I can't remember.

We have seen deed restrictions abused in the past. I was here in 2014 on the banished property in that case that needed a stronger definition of what's -- qualifies as maintenance.

We feel these properties need to be viewed as individually as possible, as temporary structures so if

the homes are ever redeveloped they can be removed, possibly creating a pocket beach but that's the line -- that was the logic the Commission took. I can't remember the year, if it was 2012 or 2013 when we went from 20-year permits on seawalls to be revisited to see if they were still necessary, see if they were needed to protect existing homes.

And that was scrapped in light of tying it to the life of the structure. And if you don't tie it to something, like I said just a few minutes ago, these seawalls become indefinite.

We heard earlier from Commissioner Padilla that we need clarity and consistency. And sometimes that might look ugly so we're asking for that ugliness here. We're asking for you to say no to 245. And we did supply some additional conditions that you could add to 245 in our letter if needed.

But again, we feel that these are really precedent setting issues. I've been in this role for eight years. I've been with the organization for 12. I've appeared before you numerous times.

And I almost didn't come up today because I have a baby and it's a long day away. I'm glad I did. I'm like still shaking from the last item. And I hope that there -- we will consider the gravity of our decisions as we

stick to precedent setting issues, whether its tying it to the life of the structure or 20-year permit.

I grew up surfing my entire life and I hope my kids will get that same opportunity. The beaches in Del Mar are projected to disappear between 2030 and 2060. My oldest son will be 15 or 45. I'm 38 and I still get in the water every chance I get.

So take my Surfrider hat off, talk to you as a mom, someone who's tired and came up anyways. Thank you.

MS. DAYNA BOCHCO: Thank you.

David Grubb, do you want to finish? Be the closer? You're the closer?

MR. DAVID GRUBB: I'll be the closer. I concur with everything that the people from Surfrider have said.

MS. DAYNA BOCHCO: Okay, ditto is what we call it. And you reserve what, rebuttal you said?

MR. DAVID GRUBB: Yes.

MS. DAYNA BOCHCO: All right.

MR. BOB TRETTIN: The balance of my time.

MS. DAYNA BOCHCO: Okay, how much -- do you -- four minutes? Okay.

MR. BOB TRETTIN: Okay, very quickly, just to emphasize elements of the staff report, and, and I want to say everyone on the Commission doesn't like seawalls. Neither do my clients. The expense is horrendous.

But it's the cost of living on the beach and that's a luxury, I agree. For those who have had -- I think it was this Commissioner Lucy said she'd been there.

The bottom line is, is that going up from the 245 property towards 241, the factor of safety today is 1.11. Going up the 245 property toward 249, the factor of safety is 1.15. Those are emergency levels factors of safety say that -- basically acknowledge that a failure that would reach the house is eminent.

Failures of the bluff don't follow 40 or 50-foot property lines. Failures of the bluff don't recognize that there's property lines up there.

And that's one of the problems. If this -- if this -- if these were 75-foot properties, there'd be two people building a seawall. And you wouldn't have a problem. But when you have these little tiny 4o or 50-foot lots, you're not going to have a failure that goes like this. And I don't think this Commission, as staff has noted, wants to build concrete return walls up the bluff on both sides and kind of create a big giant alley or death trap during high tides.

And I will mention if any of you aren't familiar -- I know a lot of you have been on tours of the Encinitas and the Solana Beach areas, but these are regular -- relatively flat tidal beaches. The high tide she showed

you, every high tide, a high, high tide reaches the bluffs.

And if you'll notice on the picture she showed you, they were reaching natural unarmored bluffs. That's what happens. They are not passable at high, high tides. Which happen every month.

So if you go through the California Coastal Act or Coastal -- the photo that we -- that we're required to use, coastal records, you'll see a lot of those photos dating back to '72 with high tides reaching the bluffs.

That's why seawalls become necessary and that's why sand miti -- sand mitigation is required and that's why the sand projects that are being approved, hopefully and being implemented over long periods of time are going to recreate two to 300 -- two to 300-foot beaches that will basically make this issue kind of irrelevant in terms of fixing the back of the beach.

But we are paying our mitigation regardless. I'm available for questions. I also wanted to note that John Nevin, the engineer and contractor for the project at Soil Engineering Construction is also available for your questions, thank you.

MS. DAYNA BOCHCO: Thank you. Thank you very much. Staff, do you have any more to say? No? Good.

I mean Jack shook his head. That's why I -- nothing

new right?

MR. KARL SCHWING: I was just going to say as you're about to experience staff, you know did have a very difficult time with this recommendation.

MS. DAYNA BOCHCO: Yes, I can imagine.

MR. KARL SCHWING: And you know here the standard of review is chapter three of the Coastal Act with the city's land use plan as guidance. And our guiding policy is again, Section 30235 of the Coastal Act that requires us to approve protection for structures in danger from erosion. And --

MS. DAYNA BOCHCO: Thank you.

MR. JACK AINSWORTH: -- okay.

MS. DAYNA BOCHCO: Commissioner Brownsey.

MS. DONNE BROWNSEY: Yes, thank you, Madam Chair. And I do want to acknowledge these were two very difficult cases -- permits for -- for staff.

They have also -- wrenching I think for all of us. Those of us who are sitting up here for you, and for the people out there and certainly for the applicants and for the advocates.

So it, it's wrenching all around but I do believe we're at an inflection point when it comes to the question of seawalls.

And I have struggled with this because on some level

I understand the staff recommendation. I get it. But on the other hand, the, the gentleman was referring to the -- you know, what do you do when you have the failure of bluffs, which is of deep concern.

But I'm also deeply concerned about the failures of seawalls, which are the erosion of our beaches. And the thing that I worry about in these cases is that here was a property owner who chose to redevelop their property, who accepted a condition, specific condition to waive armoring and the standard as I understood it from the staff description in the prior case for seawalls was that you look at the purpose.

It's to, quote "protect a specific existing structure." And in this case, we're -- we're -- we're kind of put in this situation where you have a property owner who accepted a condition, potentially already knowing that there was going to be this gap and that likely there was going to be a suggestion that the gap be filled despite the condition that they agreed to.

Because that's the -- potentially the least harmful. But when you look at this area and I'm kind of skipping around but I'm just trying to say that the question for me -- and that's why I think we're at an inflection point, which is if we armor all of our bluffs and communities, are those communities -- are the public -- is the public

aware that they're choosing potentially to give up their beaches?

I mean really, to give up their beaches in order to protect these homes, which have enormous value to those property owners. I'm not -- I'm not in any way trying to minimize their interests and their values as well.

But for me, these cases are so difficult because in order to -- to really send a message that the Commission is serious about seawalls, that we're serious about what happens when you choose to waive this requirement and you choose to locate your house beyond what we have indicated to you we thought was a safe place to build, how do we then act responsibly when the bluff becomes unstable?

And we knew that it was going to be unstable because we -- the staff had communicated that to the property owners. The geologists understood that it was going to be unstable.

And so for me, I'm very saddened and -- but resolved that we must take a stand on seawalls and that again, this is a difficult factual case. I thought the one before us was -- was even harder.

But I just believe that perhaps, I don't know if there's any other alternative but I believe this property owner spoke when they agreed to their original permit.

And that's my opinion, thank you, Madam Chair.

MS. DAYNA BOCHCO: Thank you.

Commissioner Morales.

MS. MARICELA MORALES: I wholeheartedly agree. I think in the correspondence dated February 28th by the San Diego Surfrider captures it really well in just two sentences.

Pre-Coastal Act homes can be quote, “renovated” to essentially a new home while still staying below the 50 percent redevelopment threshold that would trigger seawall removal.

Deed restrictions are proving ineffective in preventing reckless development that then illogically receives a seawall.

So in other words, they -- irresponsible development, reckless development gets rewarded at the cost of the public’s right to a beach, to protection of the beach.

And I think that the analogy of it’s going to get ugly and it’s going to have to get ugly. We all wish it wouldn’t. But it is, whether it’s in these decisions or whether it’s 15, 20, 30 years from now when we’re seeing the results.

And that analogy of the four-year-old. I have a four-and-three-quarter-year-old and I absolutely succumb to the ugliness at points and I just give him what he wants because five seconds of him shrieking is too much.

Right? And so I get it that we do that, that we succumb to that. But the good days when what I remember or remind myself is, my standing firm in that moment of the ugliness is because I'm thinking about when he's a teenager. And how ugly it can really get to his detriment in terms of the life choices he's going to make.

And so I think that that analogy is very worthwhile because anybody who's had to face a toddler's tantrum I think would agree that we often give in or at least I do.

So, so no it's, it's a hard call but, but irresponsible reckless development and its not our role to reward that, although we can justify it. But at the end of the day what we're reinforcing is not the Coastal Act but irresponsible development.

So I -- I -- I will not be supporting staff's recommendation.

MS. DAYNA BOCHCO: Okay, anyone else? All right, I'll just wait for -- what? Sorry.

MR. KARL SCHWING: Madam Chair, if I can ask just a question about the Commission's position here.

MS. DAYNA BOCHCO: You want to ask a question? Okay.

MR. KARL SCHWING: If I -- if I may.

MS. DAYNA BOCHCO: Well, yeah.

MR. KARL SCHWING: The -- the staff

recommendation right now is for approval with the wall across the -- the three properties. Only one of those properties is the one that has the waiver on it.

There are two other properties that staff had identified as being threatened and you know, would require their protection.

MS. DAYNA BOCHCO: And they're pre-Coastal Act house -- houses on both sides?

MR. KARL SCHWING: Yes, those are pre-Coastal Act home, mm-hm. So the clarification I would ask for is if you're potentially seeking to not approve just the wall in front of that single home? Or the entire wall.

MS. DAYNA BOCHCO: I don't know.

Commissioner Padilla.

MR. STEVE PADILLA: Forgive the -- I'm not an engineer so this is a layman's question. But forgive my ignorance, but how does that work? I mean if in fact there are adjoining properties that have a higher level of -- let's say for purposes of argument, a level of legal entitlement to retain that protection because they're pre-Coastal, and they share a common piece of infrastructure that is serving as a shoreline protection device, I don't -- how do you mechanically even do that?

If you say well we're not going to approve it in front of this residence so therefore there's a gap in the

armoring. I'd be interested to understand how that affects the adjacent properties both in -- from an engineering standpoint and perhaps legal standpoint?

I mean we may buy off some -- we may buy ourselves some trouble by impacting that in a negative way. So I think those are important considerations for us on a surface seeing the big gap and reciting the history that was just recited, it seems obvious that this would not be something we -- you know, we are at kind of an inflection point.

And maybe, you know, the policy is to just stop approving these period until somebody decides to get a grip on what the policy for strategic retreat should be or what we're going to do.

And maybe that's the only incentive. But short of that, given what you've just put in the record, it -- you know, this is not a simple with re -- how it applies to the adjoining properties.

I'd be very interested.

MS. DAYNA BOCHCO: I -- I need to ask a question because I may be confused. I thought the adjoining properties already had seawalls. No?

DR. LESLEY EWING: The adjoining -- the adjoining property to the north has a seawall.

MS. DAYNA BOCHCO: Has a seawall.

DR. LESLEY EWING: And then the properties 150 feet to the south --

MS. DAYNA BOCHCO: South.

DR. LESLEY EWING: -- have seawalls. So right now there's a 150-foot wide gap.

MS. DAYNA BOCHCO: And -- and the applicant though is the gap property, right?

DR. LESLEY EWING: All three of those are --

MS. DAYNA BOCHCO: So are the three in front of us?

DR. LESLEY EWING: Yes.

MS. DAYNA BOCHCO: So all three seawalls and all three applicants are in front of us?

DR. LESLEY EWING: Yes.

MS. DAYNA BOCHCO: Oh, okay. I thought it was just the one with the gap. Well you know I just think you have -- you have to -- to go -- you have to go by the law.

And if we said the law requires us to give seawalls to existing homes, then they have to have them. This is my opinion. I'm not speaking for the Commission. That's why I said I don't know what the Commission wants to do.

But what I do also believe especially after the last permit action that if we are going to be consistent and we put on new construction that they can't have a seawall, then they can't have a seawall. And so then what you do

is you say to the other two sides, you can have a seawall because the law allows it.

Well we can't guarantee what's going to happen to it. We don't go -- we're not in the guarantee business. So they can build the seawalls if -- if the law determines they must.

But we don't have to put the gap wall in, is my opinion.

MR. JACK AINSWORTH: Well the gap -- the seawall is to protect really the two existing homes that are at risk right now.

MS. DAYNA BOCHCO: Well then they can have them.

MR. JACK AINSWORTH: The middle one, it's -- it -- it -- to leave a gap in there would create a hazard for the two existing homes. So that's a practical problem.

MS. DAYNA BOCHCO: Right away?

MR. JACK AINWSWORTH: So what are you going to do? You either have to build some godawful structural return wall up the bluff or you close the gap to protect those walls.

MS. DAYNA BOCHCO: You know, I don't -- I don't -= I don't know --

MR. JACK AINSWORTH: It's a pragmatic problem, it's a practical problem.

MS. DAYNA BOCHCO: I don't know, Jack, that I

agree with you that we have to guarantee those two other properties that their seawall is going to be effective forever. I just don't know that we have to do that.

So maybe we do and you'll convince me of that. But I'm not at all convinced and I also feel that it is absolutely pointless if we're going to put conditions on new construction that they cannot have seawalls and then give them seawalls.

You must have known there were two preexisting houses next door so what was the point of us putting in the condition?

MR. JACK AINSWORTH: Yeah, I think -- I think you're right, I think we do need to get -- consider that going into the future.

MS. DAYNA BOCHCO: You do?

MR. JACK AINSWORTH: You know we're evolving as we go along.

MS. DAYNA BOCHCO: Well then why did we go -- why did we demand the condition?

MR. JACK AINSWORTH: No, I say we do now, we -- we need to think about that going into the future because it creates these, these prob -- these situations that are impossible to deal with.

MS. DAYNA BOCHCO: Well I -- I -- I think you're already there, I think you ought to consider it.

MS. DONNE BROWNSEY: Madam Chair, thank you. So just to go back. So the two -- and this is where it becomes -- and I think that you're -- you're absolutely right, Mr. Ainsworth, which is we really have to come to grips with some kind of policy here.

Because really what's happening is that we have internally conflicting policies with respect to seawalls. So we have to think about if we're going to put a condition on a home in between two pre-Coastals who have guaranteed -- more or less guaranteed access to a -- or guaranteed approval more or less, to seawalls, because that has been the long tradition of the Commission.

I think we have to think more strategically I think about the seawalls in these properties. I mean I hear what you're saying and I think that the thing that was -- I struggled with which is you would have these horrific ugly walls going up, up the bluff that could potentially even more destabilize these bluffs if you didn't do it across the three properties.

And I went back and forth, back and forth, back and forth. But as I said, I mean I -- I'm just at this point, feeling like we have to really come -- no longer say you know we're -- we'll deal with this in the future, we'll have to you know, blah, blah, blah.

I feel like we have to assert a comprehensive policy

on seawalls. And of course whatever the -- you know, I'll abide by whatever the Commission decides. And I'm not -- and I totally appreciate the position that not only the staff are in in terms of trying to explain this to property owners and public beach officials.

But also to us and everybody else.

MR. JACK AINSWORTH: That's right and you know, the -- in the context of our LCP updates and how we're trying to deal with these questions as we go forward because it's so difficult to deal with it on a piecemeal basis like Commission Padilla just said.

We're going to have to come to some sort of, you know, realization that there are going to be some areas along the coast that are going to have shoreline protection and you know? But we've got to make -- we got to balance that against making sure there's areas open to the public that we have -- we have nourishment projects, we have -- we have -- we have mitigation for those areas.

But you need to do it comprehensively. You can't do it on a -- a case-by-case basis.

MS. DAYNA BOCHCO: Jack, you're making the same argument that Commissioner Padilla made on the permit that was right before us.

MR. JACK AINSWORTH: Right, absolutely

MS. DAYNA BOCHCO: And that's what he said.

MR. JACK AINSWORTH: That's right and that's what we need to do but --

MS. DAYNA BOCHCO: And what we were trying to -- trying to -- to say to you guys, you're going to have to wait until the LCP is done. Now you're switching it around and telling us --

MR. JACK AINSWORTH: No, no, not at all, we have to deal what's in front of us. I'm saying going forward we -- we're going to have to deal with these more comprehensively through the local coastal programs.

MS. DAYNA BOCHCO: And we have -- not going forward. Right now we're dealing with it.

MR. JACK AINSWORTH: Yeah, that's -- Madam -- sure.

MR. STEVE PADILLA: I appreciate that and I respect that, Mr. Ainsworth. And I do but I -- I have to say that the reality here is, is again it's -- we have to grapple with this but I go back to thank you for referencing my -- and not just on the past matter and not just on this matter. But I'm like a broken record that annoys a lot of people because I say this all the time.

And that those fundamentals need to be addressed because we are trying to deal with this stuff on an ad hoc basis and we -- we present new scenarios that create new risks for us across a whole suite of areas.

When we're hearing these matters and trying to deal with them in an ad hoc manner, I mean we have to ask in this instant case for example -- and I'm not sure I heard an answer to my prior inquiry, which is what are the geological engineering and practical effects if this Commission on this instant permit were to deny given that it is basically as I see the exhibits, a gap in a sort of a continuum of protection that aren't -- aren't living in isolation.

I mean we can call them three separate seawalls but I, I would -- I would be venturing to guess -- I'd venture to guess and I'm not an engineer that they really -- that that -- that whole area of protection as it is now, has a symbiotic relationship. And that if there's a gap in front of one that that's going to have some kind of physical impact on the others.

And the question before us has to be what happens then to those other residences and what risks and issues does that force us to grapple with?

MR. JACK AINSWORTH: Yeah, and I have Dr. Ewing and Dr. Street address that, address those issues in this case.

DR. LESLEY EWING: I think we're going to go in the reverse order of the way we normally think about a project, that being first the geologic need and then the

engineering response. Because I can give you sort of the engineering opportunity to take what is now 160 -- 150-foot wide gap and reduce it down to a 50-foot wide gap.

And if this were to be created as a gap it is the time to do that now so that the property abutting this area is in, in -- done in anticipation of that gap getting bigger over time.

Because that property would start to then protect not just the fronting part of the slope but as the lower part of the -- the shoreline or the lower part of the bedrock starts to retreat back, they would wrap that around so that it provides a continuity of both the forward face, the ocean-facing portion of the bluff and the side-facing portion of the bluff.

And so you would have to have sort of an alley eventually developed as the bedrock material erodes back because there is no protection for that section of the bluff.

And that section of the bluff would need protection at the base but then also going up the slope. And so it would be akin to what is being done on the front of the seawall -- the front of the bluff at the face of the ocean-facing part.

But then with a turn in it. And it wouldn't be a 90-degree turn. I believe the engineers here who might be

doing this work -- and I don't think you would do a 90-degree turn but maybe he would do something as tight as he could.

And so you would have actually just a, a re -- a continuity of what that seawall is going along the side gap, the wall, the gap as it enlarges. And I'll let Dr. Street talk about the geologic need for doing that.

DR. STREET: Pardon me, I think the only thing I would add is that, you know, all the evidence we have from the slope stability analysis the applicants provided is that right now the, you know, the weak upper-bluff material, it could fail. And it could endanger the -- you know, the neighboring houses.

And if -- if and when that occurs, they could be back in here, you know, with a -- some sort of emergency solution that includes both you know, the lower bluff kind of seawall going into the embayment that's starting to be created in the bluff.

But also additional upper-bluff structures such as a, you know, the caissons or geogrid or things like that. So, I mean I think -- I think our staff assessment -- I'm repeating myself. Is that, you know there is an existing danger at the moment.

MR. STEVEN PADILLA: Thank you.

MS. DAYNA BOCHCO: So Commissioner Brownsey, do

you want to make a motion?

MS. DONNE BROWNSEY: Yes. Madam Chair, yes, I move that the Commission approval Coastal Development Permit Application Number 6-18-0288 subject to the conditions set forth in the staff recommendation and I'm recommending a no vote.

MS. DAYNA BOCHCO: A second?

MS. DONNE BROWNSEY: Second.

MS. DAYNA BOCHCO: Okay. Any further discussion?

I'm sorry, Commissioner Howell, you wanted to discuss?

MR. ERIK HOWELL: Thank you, Chair Bochco. I -- just -- just briefly. I mean this isn't any more pleasant than the last one was.

But I, I can appreciate Mr. Ainsworth's reassuring comments that we're going to come up with some uniform plans going forward but the coast isn't uniform.

I think I can sit here and with some confidence level say the Oceano Dunes are never going to be the subject of seawall protections and issues like we have here.

I know I said I was going to be brief but I think there is enough issues with the -- the houses that are entitled to have seawalls to protect their homes. And it seems to me that we have -- I mean I know that we can't

give assurances that these seawalls are going to be effective and -- but there is to me a hint of injustice to the ones that are entitled to a seawall to say, just to punish this one and I -- I -- you know at first glance you look at this and you say if -- if we're not going to say no to them, where would we ever say no?

But I can also understand staff's reluctance to -- to say no due to the damage done potentially to the other two, to the other two homes that haven't done anything wrong.

MS. DAYNA BOCHCO: Okay, okay, let's take a vote.

MR. ERIK HOWELL: So I -- I will not be voting no. I'll be voting for staff recommendation.

MS. DAYNA BOCHCO: Okay. Let's have a roll call vote, please.

ACTING CHIEF COUNSEL LOUISE WARREN: Can we just clarify, we think there's a legal right to the seawalls on two of the pre-Coastal properties --

MS. DAYNA BOCHCO: We're just voting --

ACTING CHIEF COUNSEL LOUISE WARREN: -- under 30235 so if you were follow the recommendation of the person who made the --

MS. DAYNA BOCHCO: I think you have to have a new -- a new report where you just have two walls. And

not three walls.

ACTING CHIEF COUNSEL LOUISE WARREN: So this -- this would be a full denial of all three walls if we did it this way --

MS. DAYNA BOCHCO: At this point I think so, yeah.

ACTING CHIEF COUNSEL LOUISE WARREN: -- if you followed the stat -- if you followed the motion?

MS. DAYNA BOCHCO: Yeah, and then come back with the ones you feel are legally entitled.

ACTING CHIEF COUNSEL LOUISE WARREN: They would have to wait six months before they could come back for any kind of new application.

MS. DAYNA BOCHCO: Well I guess we can amend it then.

ACTING CHIEF COUNSEL LOUISE WARREN: Or you could do an amended motion. That’s just what I wanted to clarify.

MS. DAYNA BOCHCO: Okay, all right. So how would we do that?

ACTING CHIEF COUNSEL LOUISE WARREN: So you could make an amending motion to approve the seawall on the two pre-Coastal properties but not on the property for which there was a waiver of shoreline protection.

MS. DAYNA BOCHCO: Okay, okay.

MS. DONNE BROWNSEY: Can -- should -- should I do that now?

MS. DAYNA BOCHCO: Yes, go ahead.

MS. DONNE BROWNSEY: Yes, Madam Chair, I'd like to put for an amending motion that would approve the seawalls for the two pre-Coastal properties per staff's recommendations.

ACTING CHIEF COUNSEL LOUISE WARREN: Seawall and geogrid I'm sorry, I didn't add the geogrid.

MS. DONNE BROWNSEY: Oh, that's okay, seawall and geogrid.

MS. DONNE BROWNSEY: I would second that motion as well.

MS. DAYNA BOCHCO: Okay, can we have a, a vote?

MR. KARL SCHWING: Madam Chair, I'm sorry, staff would -- would also suggest that revised plans include plans for return walls on those properties.

MS. DONNE BROWNSEY: And that the plans -- what?

MS. DAYNA BOCHCO: He said he wanted return walls on the other two properties. Well, never having seen a return wall it's kind of difficult to figure out what that means.

What, why can't we deal with that when there is a problem? Like when the water starts to do something that's really dangerous? They can come back and amend.

DR. LESLEY EWING: Right, it would just be revised plan subject to the way this project is approved because I mean I think what we want to avoid is a 90-degree angle right there.

And so we'd want the wall to -- to the south for the property that has a --

MS. DAYNA BOCHCO: All right, obviously you -- you know what you're doing and I don't. So --

DR. LESLEY EWING: -- is a pre-Coastal property -- it, it would just be making sure that they're in the test -- in anticipation of needing to potentially have a return wall in the future rather than have an abrupt design that wasn't done -- this is the time for them to think about making that turn.

MS. DONNE BROWNSEY: All right, Madam Chair -- right.

DR. LESLEY EWING: And that's all we're saying is just to have that part of the plan if that -- if the amending motion is the one you should choose to go with.

MS. DAYNA BOCHCO: Okay, I think -- I think we have to leave it up to you guys what the design of the wall will be.

What we're saying is there is just going to be two walls, not three, that's all. So if you need -- you design the wall, okay?

ACTING CHIEF COUNSEL LOUISE WARREN: We'll interpret the amending motion to be with ED review and approval of the appropriate revised plans, allow the -- the wall to protect the two properties that are allowed protection under the Coastal --

MS. DAYNA BOCHCO: Protection under the law, yes, thank you. That's good, I like that.

Okay so now we're going to have a roll call vote? Thank you. Does it -- and the maker of the motion is asking for a yes --

MS. DONNE BROWNSEY: For a yes vote on the amending motion.

MS. DAYNA BOCHCO: On the amending motion.

UNKNOWN COMMISSIONER: Can we just clarify the what -- clarify the vote one more time? Just to understand what the amending motion is?

ACTING CHIEF COUNSEL LOUISE WARREN: Yes, so the amending motion is to allow seawall on the two properties that are pre-Coastal and are entitled to protection under 30235 subject to revised plans for ED review and approval for the projects to have sufficient protection just for those two properties.

MS. DAYNA BOCHCO: Correct, and we're asking for a -- they are asking for a yes vote. Okay, now we can have a vote.

MS. VANESSA MILLER: Commissioner Luevano?

MS. MARY LUEVANO: Yes.

MS. VANESSA MILLER: Luevano yes. Commissioner Padilla?

MS. STEVE PADILLA: I'm going to reserve all their comment. Yes.

MS. VANESSA MILLER: Padilla, yes. Commissioner Peskin?

MR. AARON PESKIN: Aye.

MS. VANESSA MILLER: Peskin, yes. Commissioner Sundberg?

MR. RYAN SUNDBERG: Yes.

MS. VANESSA MILLER: Sundberg, yes. Commissioner Turnbull-Sanders?

MS. EFFIE TURNBULL-SANDERS: Yes.

MS. VANESSA MILLER: Turnbull-Sanders, yes. Commissioner Uranga?

MR. ROBERTO URANGA: Aye.

MS. VANESSA MILLER: Uranga, yes. Commissioner Aminzadeh?

MS. SARA AMINZADEH: Aye.

MS. VANESSA MILLER: Aminzadeh, yes. Commissioner Brownsey?

MS. DONNE BROWNSEY: Aye.

MS. VANESSA MILLER: Brownsey, yes.

Commissioner Morales?

MS. MARICELA MORALES: Yes.

MS. VANESSA MILLER: Morales, yes. Commissioner Howell?

MR. ERIK HOWELL: Aye.

MS. VANESSA MILLER: Howell, yes. Chair Bochco?

MS. DAYNA BOCHCO: Yes.

MS. VANESSA MILLER: Bochco yes. The vote is unanimous.

MS. DAYNA BOCHCO: Thank you. The motion -- the amended motion passes. Now we take a vote on the regular one and we vote no against it?

ACTING CHIEF COUNSEL LOUISE WARREN: Well originally Commissioner Brownsey was recommending no but I think at this point she would be recommending a yes.

MS. DONNE BROWNSEY: Yes, because it’s an amended motion now.

ACTING CHIEF COUNSEL LOUISE WARREN: Right, because it’s an amended motion.

MS. DAYNA BOCHCO: Oh, amending the motion, I see, of course, you’re right, of course. I think --

UNKNOWN FEMALE: I think we can ask for unanimous yes vote.

MS. DAYNA BOCHCO: Darn things. Unanimous yes vote on the basic motion, what do you call it? Main

motion, main motion, thank you. I see yes, what happened?

MR. ERIK HOWELL: Sort of no. I think I voted wrong but --

MS. DAYNA BOCHCO: Oh, do you want to change your vote? Okay so we have a unanimous vote on the main motion? Is that all right, Erik? Okay, got it, that's it.

Okay, Jack, just another little surprise for you, we've decided we would like to do closed session tomorrow.

MR. JACK AINSWORTH: I was going to suggest that.

MS. DAYNA BOCHCO: Thank you.

MR. JACK AINSWORTH: Yes, absolutely.

MS. DAYNA BOCHCO: Are we done, Jack?

MR. JACK AINSWORTH: Yes, ma'am.

MS. DAYNA BOCHCO: Okay, hon. Thank you, we are dismissed, adjourned, going away.

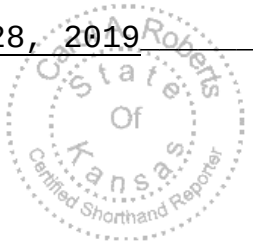
[END OF FILE]

C E R T I F I C A T E

I, Carol A. Roberts certify that the foregoing excerpted transcript of recorded video file was prepared using standard electronic transcription equipment and is a true and accurate record of the proceedings to the best of my knowledge and ability.

Signature Carol A. Roberts, CSR

Date March 28, 2019



SOIL
ENGINEERING
CONSTRUCTION INC.

January 3, 2019

TO: California Coastal Commission
Eric Stevens, San Diego Office

FROM: John Niven, P.E.
Soil Engineering Construction, Inc.

RE: Additional Slope Stability Analyses
Justification for Bluff Stabilization Measures
235-245 Pacific Avenue
Solana Beach, California

In response to Coastal staff's concern regarding the slope stability of the bluff fronting 245 Pacific Avenue, SEC has performed additional slope stability analyses on two additional cross sections, D-D and E-E, to determine the threat to the adjacent properties, 241 and 249 Pacific, if a 50-foot gap fronting 245 Pacific was required to remain unprotected.

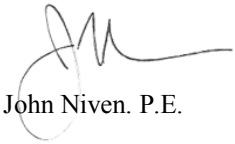
Based on our slope stability analyses along cross sections D-D and E-E, see attached Figure's 1, 2 & 3, it appears that the factors of safety (FS) against sliding at the northwestern side of 241 Pacific and the southwestern corner of 249 Pacific pose an immediate concern. A bluff failure through the clean sand lense at 245 Pacific will cause a significant adversely impact to the residential structures at 241 & 249 Pacific. The results of our analyses indicate a 1.11 FS at the 241 property and a 1.16 FS at the 249 property. The results of our analyses are attached as Figures 4 & 5. It should be noted that the calculated FS's are conservative since building surcharge loads were not included in our analyses. If building surcharge loads were added, the FS would be even lower than currently documented.

It should also be noted that, absent lower bluff protection at 245 Pacific, 241 Pacific would require a mid-bluff side wall, extending from the seawall to the top of bluff. However, this would be a very short-term solution, as additional failure of the lower bluff at 245 Pacific would jeopardize, at a minimum, lower portions of a mid bluff side wall. Such damage would also extend to the proposed Geogrid fill at 241 Pacific. If that were allowed to occur, most of the disturbed/failed fill would be required to be removed and replaced. This would be a dangerous undertaking, considering the location adjacent to a public beach, steepness of the slope, extremely difficult access, and the possibility of continued bluff failures at 245 Pacific during the work. Such a failure would also extend to the property at 249, requiring a permit to build a mid-bluff side wall with fill and geogrid to replace failed natural bluff materials. This mid-bluff side wall would also provide only short-term protection if the failing 245 Pacific bluff was left unabated.

Based on this additional engineering analyses, it remains our opinion that a lower coastal bluff seawall at 245 Pacific is necessary at this time to protect 241 and 249 Pacific Avenue.

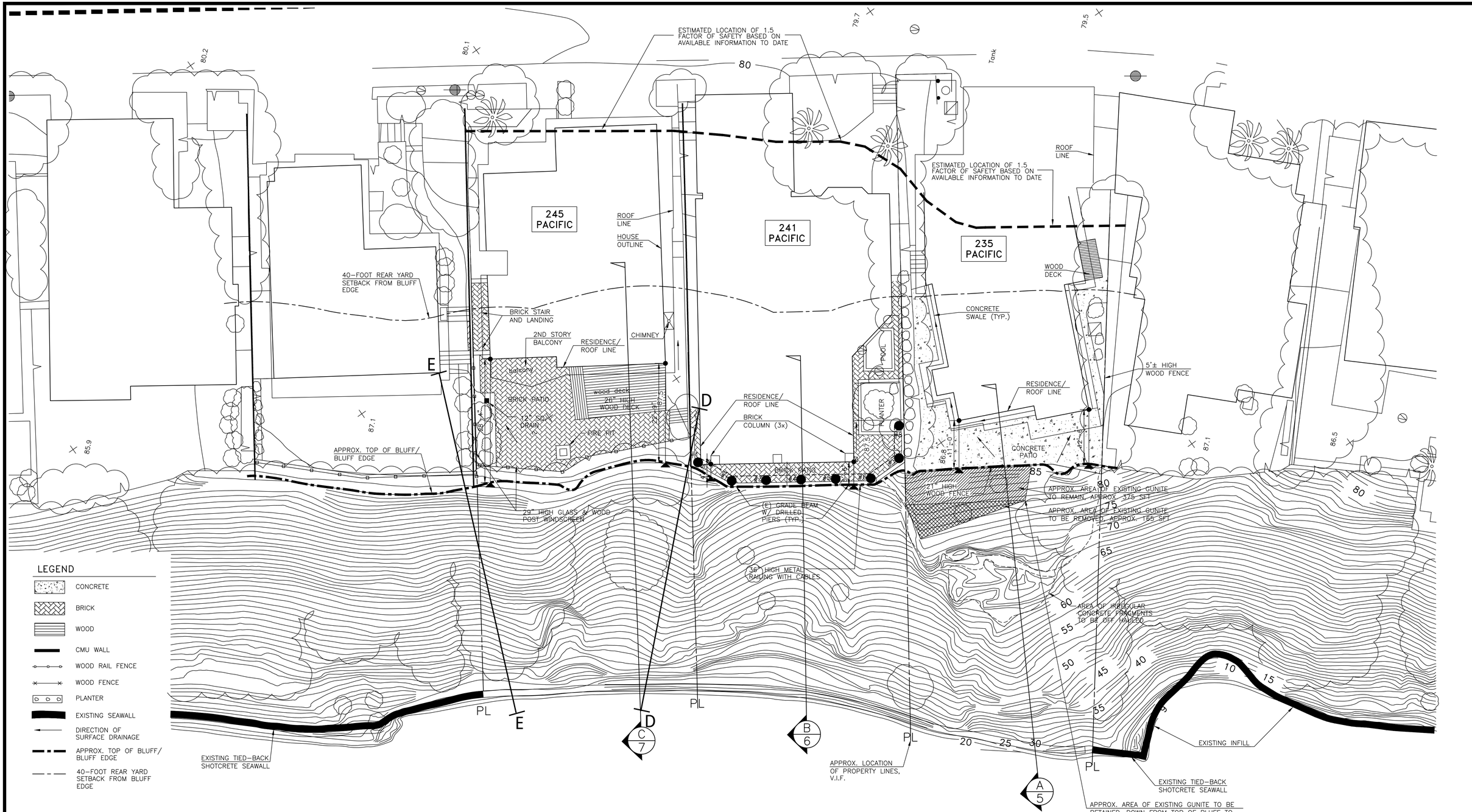
Respectfully submitted,

Soil Engineering Construction, Inc.



John Niven. P.E.

560 N. Hwy 101, Suite 5, Encinitas, California (760) 633-3470 Fax (760) 633-3472



LEGEND

- CONCRETE
- BRICK
- WOOD
- CMU WALL
- WOOD RAIL FENCE
- WOOD FENCE
- PLANTER
- EXISTING SEAWALL
- DIRECTION OF SURFACE DRAINAGE
- APPROX. TOP OF BLUFF/ BLUFF EDGE
- 40-FOOT REAR YARD SETBACK FROM BLUFF EDGE

0 5' 10' 20' 40'

SCALE: 1"=10'

SITE PLAN-EXISTING CONDITION

SCALE: 1"=10'

1/3

0 1" 2" 3"

ORIGINAL DRAWING MEASURE

FIGURE 1 AS-BUILT

By:_____ Date:_____

R.C.E.:_____ Exp: _____

REGISTERED PROFESSIONAL ENGINEER ROBERT D. MAHONY No. C. 16459 No. GE 554 EXP. 06-30-19 CIVIL & GEOTECHNICAL STATE OF CALIFORNIA

SOLANA BEACH FIRE DEPARTMENT	SANTA FE IRRIGATION DISTRICT	ENGINEER OF WORK	CITY APPROVED CHANGES	APP'D	DATE
By:_____ Fire Chief Date:_____	Reviewed By:_____ District Representative Date:_____	RH Drawn By By: Robert D. Mahony Date: 06-30-17 Name: Soil Engineering Const., Inc. R.C.E. 16459 Exp: 06/30/19			

RECOMMENDED FOR APPROVAL	APPROVED FOR CONSTRUCTION	BENCH MARK
By:_____ Date:_____ By:_____ Date:_____	By:_____ Date:_____ Mohammad Sammak, City Engineer R.C.E.: 37146 Exp: 6/30/18	DESCRIPTION: SDGPS-446 FD 2" BR. DISK IN TC PER ROS 14492 "L488T18 1980 TRAVERSE POINT LS 4300 COUNTY OF SAN DIEGO" LOCATION: BRASS PLUG IN TOP OF CURB AT SOUTHEAST CORNER OF VIA DE LA VALLE AND SOLANA CIRCLE ELEV.: 62.647 DATUM: M.S.L.

CITY OF SOLANA BEACH ENGINEERING DEPARTMENT	DRAWING NO.
SITE PLAN-EXISTING CONDITION FOR: 235-245 PACIFIC AVENUE, SOLANA BEACH, CA 92075 EMERGENCY REPAIRS TO COASTAL BLUFF	SBGR- Sheet 3 of 14

Section D 241-245 Pacific Ave Existing Condition Static

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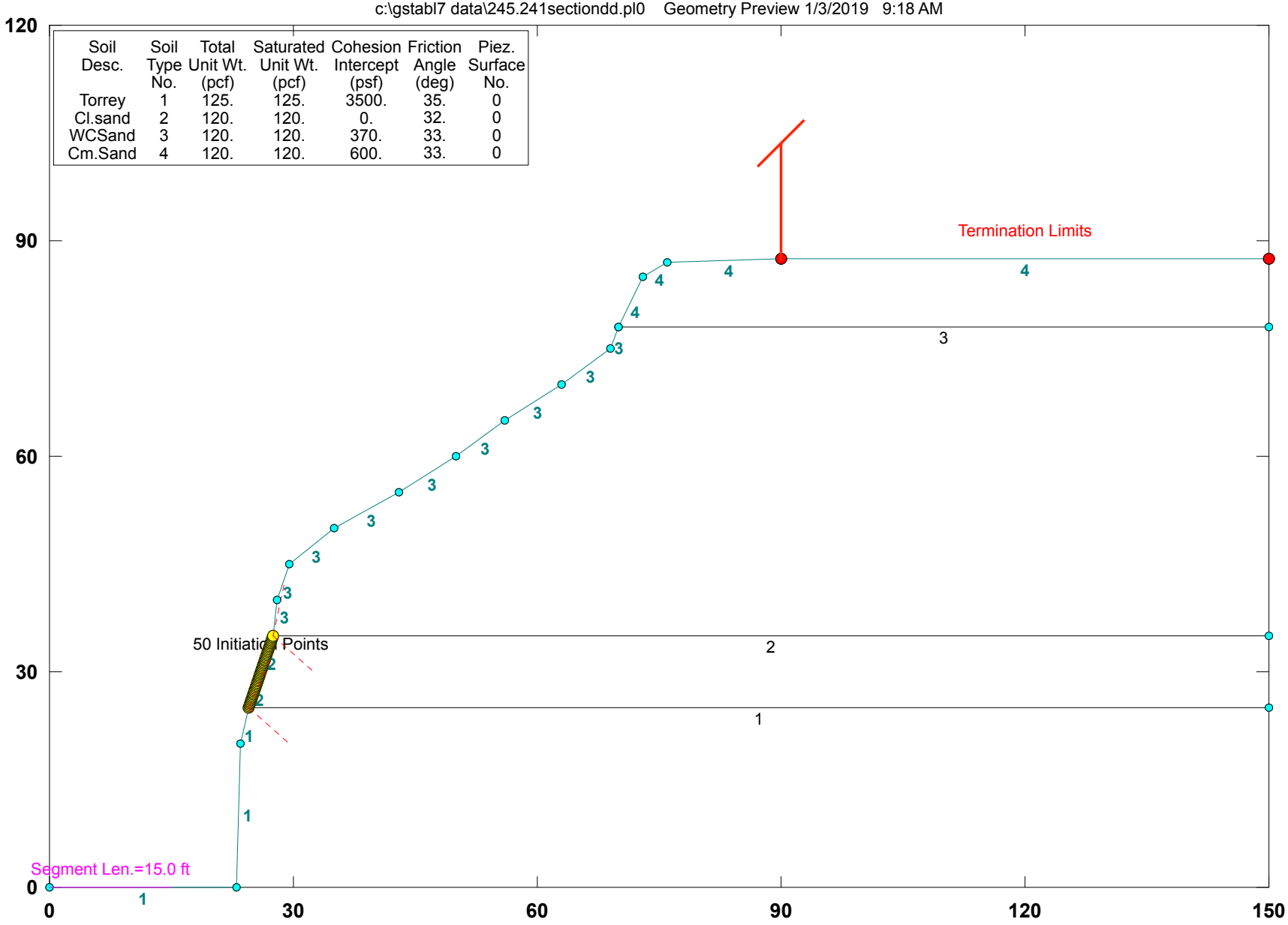

FIGURE 2

California Coastal Commission
CDP 6-18-0288-REC
Exhibit 5
Page 3 of 6

Section E 245-249 Pacific Ave Existing Condition Static

c:\gstabl7 data\245.249sectionee.pl0 Geometry Preview 1/3/2019 9:17 AM

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Torrey	1	125.	125.	3500.	35.	0
Cl.Sand	2	120.	120.	0.	32.	0
WCSand	3	120.	120.	370.	33.	0
Cm.Sand	4	120.	120.	600.	33.	0

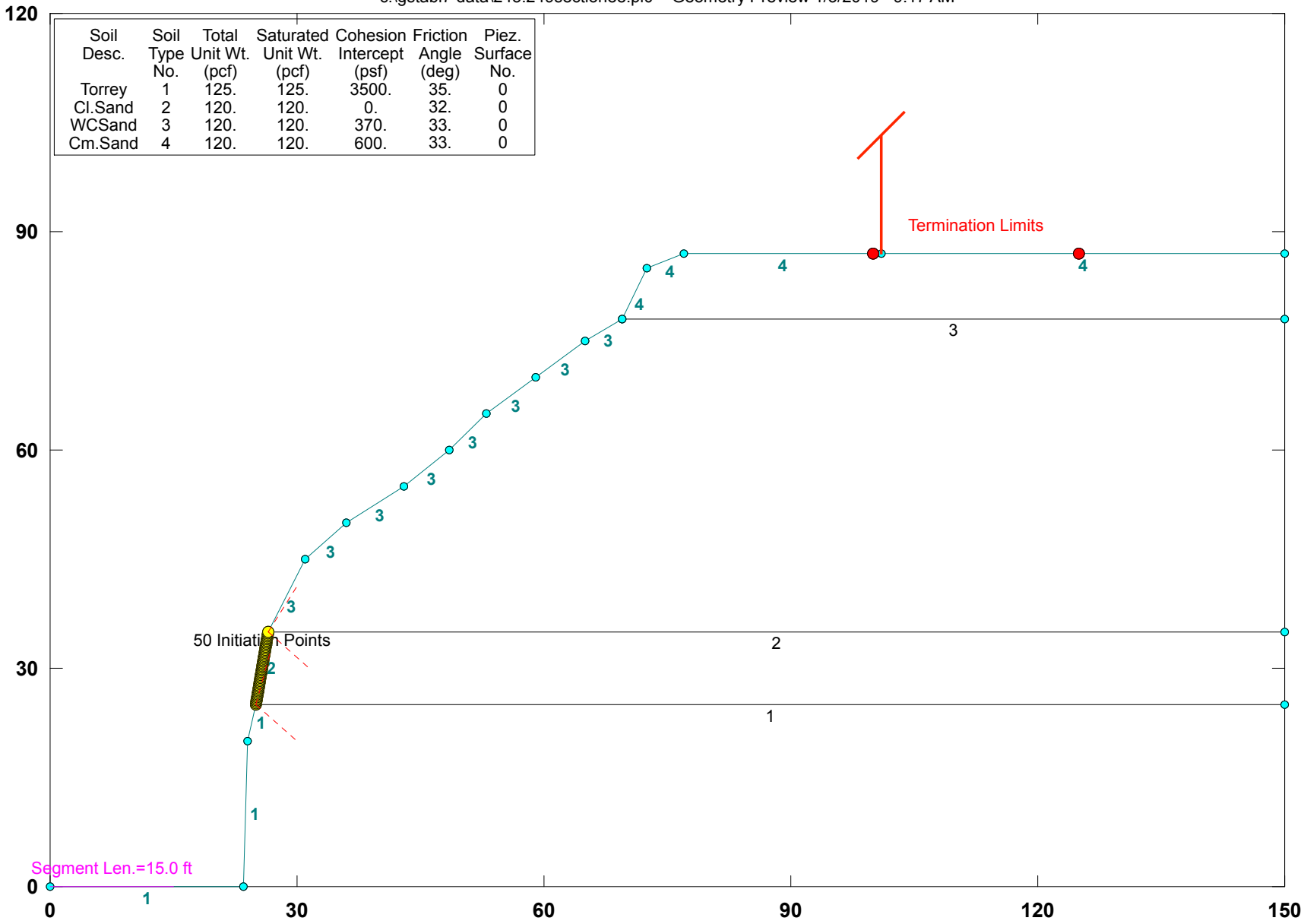

FIGURE 3
California Coastal Commission
CDP 6-18-0288-REC
Exhibit 5
Page 4 of 6

Section D 241-245 Pacific Ave Existing Condition Static

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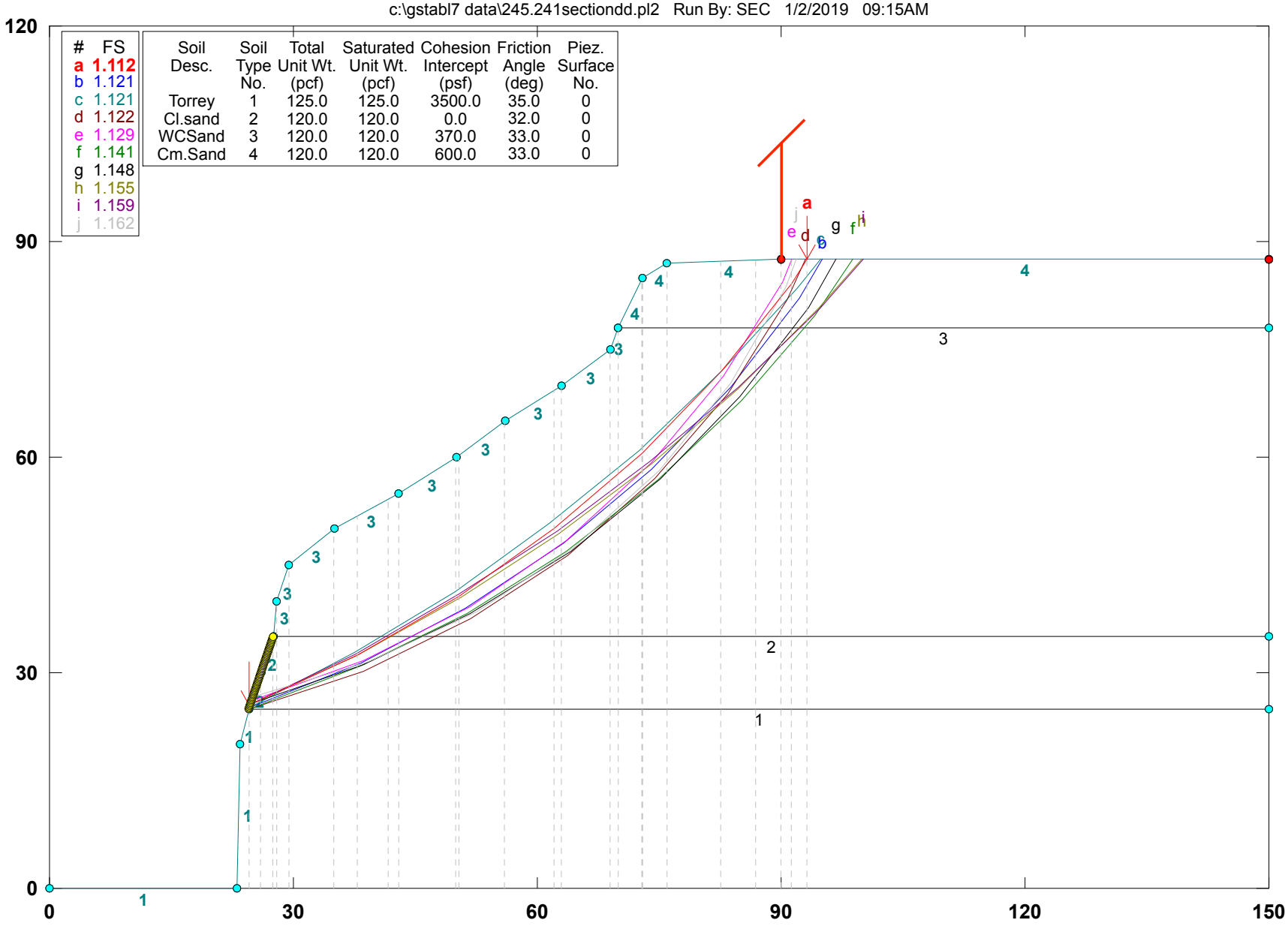


GSTABL7 v.2 FSmin=1.112

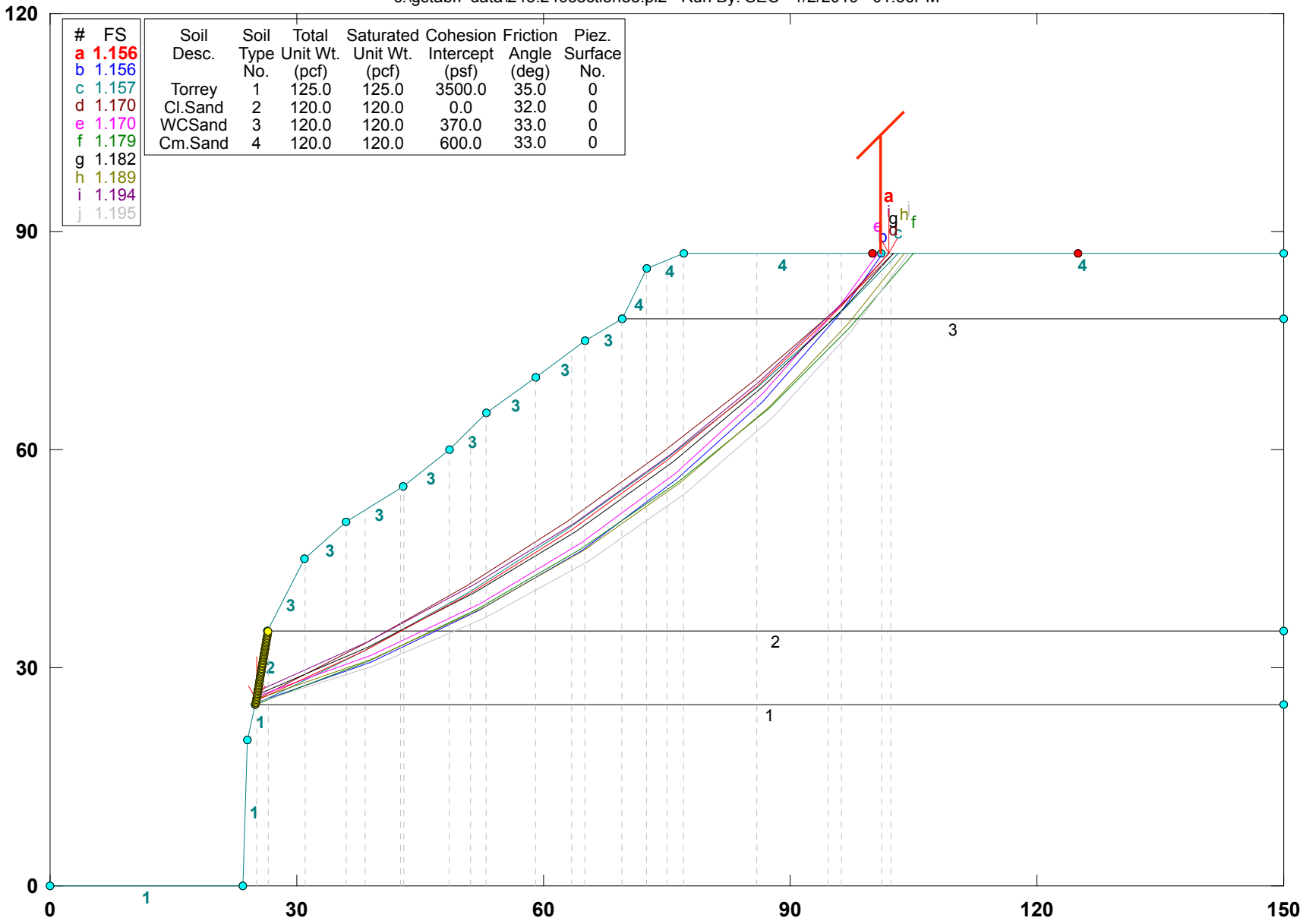
Safety Factors Are Calculated By The Modified Bishop Method

FIGURE 4

California Coastal Commission
CDP 6-18-0288-REC
Exhibit 5
Page 5 of 6

Section E 245-249 Pacific Ave Existing Condition Static

c:\gstabl7 data\245.249sectionee.pl2 Run By: SEC 1/2/2019 01:36PM



GSTABL7 v.2 FSmin=1.156

Safety Factors Are Calculated By The Modified Bishop Method

FIGURE 5

CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
7575 METROPOLITAN DRIVE, SUITE 103
SAN DIEGO, CA 92108-4421
(619) 767-2370

Th20b

Filed:	8/23/2018
270th Day:	5/20/2019
Staff:	E. Stevens-LB
Staff Report:	02/21/2019
Hearing Date:	3/07/2019

STAFF REPORT: REGULAR CALENDAR

Application No.:	**6-18-0288**
Applicant:	**DeSimone, Schrager, & Jokipii**
Agent:	Bob Trettin
Location:	245, 241, & 235 Pacific Avenue, Solana Beach, San Diego County (APN Nos. 263-312-11, 263-312-12, & 263-312-13)
Project Description:	Construct a 150 ft. long, 35 ft. high, 28 in. thick seawall on the public beach and bluff, construct an approximately 45-130 ft. wide, approximately 50 ft. high geogrid structure on the bluff face, install hydroseed and container plantings on the proposed geogrid slope, remove a portion of the existing gunite on the bluff face and install plantings on a portion of the existing gunite that is proposed to be retained.
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

Staff is recommending that the Commission **approve** the subject shoreline armoring development. The proposed protection would be located entirely on the publicly-owned beach and bluff. The applicants' geotechnical representative has demonstrated that the blufftop residential structures are in danger from erosion due to ongoing bluff collapse and exposure of the clean sand layer below the residences. The Commission's staff engineer and geologist have reviewed the applicants' geotechnical assessment and concur with its conclusions.

However, an important factor in determining whether shoreline protection should be approved is whether the development at risk is entitled to shoreline protection under Section 30235 of the Coastal Act. The homes at 235 and 241 Pacific Avenue were constructed prior to enactment of the Coastal Act. Thus, the residences are considered "existing" for purposes of requiring protection under Section 30235 of the Coastal Act. However, the northernmost home (245 Pacific Avenue) was approved by the Commission in 1996 and is not an existing structure for purposes of Section 30235 of the Coastal Act because it was originally permitted and built after 1976, thereby postdating the enactment of California Coastal Act. Furthermore, at the time of approval, the applicant chose to construct the home seaward of the 40 ft. bluff edge setback and as such, a condition of the CDP approval required that the property owners waive their rights to construct shoreline armoring to protect the portion of the home at 245 Pacific Avenue closer than 40 feet from the bluff edge. While the slope stability analysis shows that the seaward portion of the home at 245 Pacific Avenue is threatened by erosion, the analysis does not indicate that the portion of the home landward of the 40 ft. bluff setback is currently at risk. Thus, the Commission is not required to approve shoreline armoring to protect the bluff top residence at 245 Pacific Avenue.

An alternative to approving the entire 150 ft. long seawall would be to leave an unarmored 'gap' of natural bluff fronting the home at 245 Pacific Avenue and to only approve the seawall and geogrid mid and upper bluff structure fronting 235 and 241 Pacific Avenue. This approach would arguably be most consistent with the intent of the Commission's 1996 approval, which was clearly intended to preclude the construction of shoreline protection in front of the residence if the homeowner made the choice to build in a potentially hazardous location. However, while the Commission is not required to approve protection for the home 245 Pacific Avenue, because the home is adjacent to other homes that are at risk and are entitled to protection, there is no clear way to avoid some form of protection in front of 245 Pacific Avenue. A gap in the seawall would result in potential flanking of the existing permitted seawall to the north of 245 Pacific Avenue and the proposed seawall fronting 235 and 241 Pacific Avenue, thereby impacting the properties up and down coast of 245 Pacific Avenue (249 and 241 Pacific Avenue). While it is likely that armoring in front of 245 Pacific Avenue could be avoided at this time, it would only be through the construction of larger, more impactful shoreline protection on the adjacent lots. For example, east/west directed retaining walls that function as a return walls to the lower seawall below 249 Pacific Avenue and 241 Pacific Avenue might temporarily address the threat to the surrounding existing structures. However, continual monitoring and the on-going construction of additional and larger walls, geogrid, etc. would be necessary as erosion continued to occur. The Commission's senior engineer and geologist have examined the alternative of not constructing any shoreline armoring seaward of 245 Pacific Avenue and concluded that the impacts to the natural landform and visual quality of the bluff would be greater than the impacts associated with the proposed project, and would be detrimental to the adjacent properties (Exhibit 15).

Thus, staff is recommending that the proposed shoreline armoring be approved, but only for as long as the existing bluff top structures (235 and 241 Pacific Avenue) that the armoring is authorized to protect still exist. Special Conditions require the applicants to

submit a complete coastal development permit application to remove or modify the terms of authorization of the armoring when the existing structures warranting armoring are redeveloped, are no longer present, or no longer require armoring. One purpose of these conditions is to tie the life of the shoreline armoring to the structures it is approved to protect, and to waive any potential rights to augment or reconstruct the armoring to protect new development. This helps to preserve future adaptation options that may be necessary to mitigate adverse beach and public access conditions triggered by ongoing erosion and sea level rise.

The applicants have proposed to make a contribution to the mitigation program that would address the sand volume impacts from denial of sand to the littoral cell. This sand would have a value of $29,669. The beach area itself and degradation of public access to and along the beach that would be impacted due to encroachment and the area impacted by estimated passive erosion over the 20 year mitigation period will be mitigated through the City's Public Recreation Fee program. Thus, the applicants are required to pay a fee of $127,786, in-lieu of providing new beach area to replace the beach are that will be lost due to the impacts of the seawall for the an initial 20 year period. The City's Public Recreation Fee program would typically require that the fee for any seacave or notch at the base of the bluff also be paid prior to issuance of the Coastal Development Permit. However, in this case, the sand level is too high to safely investigate the extent of any seacave or notch at the site without the use of mechanized digging equipment. Therefore, within 30 days of the start of construction, the applicants is required to submit documentation of the area of any notch or seacave at the base of the bluff to the Commission and to the City and submit an additional an additional in-lieu Public Access Fee to the City for the area based on the City's Public Access Fee method.

Prior to the completion of the initial 20 year period, the applicant is required to submit an amendment application to the Commission to either remove the permitted shoreline armoring or to provide geotechnical reports with evidence that the shoreline armoring must be retained and to provide mitigation for the subsequent 20 year period. In subsequent mitigation periods, mitigation shall include the direct shoreline protection device encroachment and all beach area that would have otherwise been available to the public through passive erosion had the shoreline armoring not been constructed.

With the required public access and recreation mitigation, the impacts of the proposed shoreline protection on regional sand supply and public access and recreation will be mitigated to the extent feasible. To ensure that any future redevelopment, additions, or major structural alterations of these properties is consistent with Chapter 3 policies of the Coastal Act, this permit requires that any future development of the bluff-top properties may not rely upon this shoreline armoring to determine site suitability for such development. Other conditions involve an in-depth alternatives analysis for future reauthorization of the shoreline armoring, ensuring that the appearance of the seawall matches the bluffs, and demonstrating approval from other agencies for the subject project.

Commission staff recommends **approval** of coastal development permit application 6-18-0288, as conditioned.

Standard of Review: Chapter 3 policies of the Coastal Act, with the certified LUP used as guidance.

TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 6-18-0288 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 **6-18-0288** *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 or interpretation of any condition will be resolved by the Executive Director or the Commission.

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

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

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 applicants shall submit, for review and written approval of the Executive Director, one full-size set of the revised final plans, that substantially conform with the plans submitted to the Commission, titled 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by Soil Engineering Construction, Inc., received August 22, 2018 and the plans titled, Landscape Improvement Plans for 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by George Mercer Associates Inc., received April 17, 2018, except that they shall be modified to reflect all of the following:

   (a) The geogrid structure on the bluff face shall be constructed to undulate to closely match the appearance of the nearby natural bluff face. The geogrid structure shall include variable thicknesses to provide visual undulations that mimic the nearby natural bluff conditions. At a minimum, the geogrid structure shall include 5 non-evenly spaced, tapered, undulating drainage features, with non-linear edges, that are approximately 2 feet deep and approximately 5 feet wide.

   (b) The existing gunite on the bluff face fronting 235 Pacific Avenue shall be removed in its entirety and a licensed civil or geotechnical engineer shall be onsite at all times that the gunite is being removed. If during removal, the onsite engineer identifies any safety or bluff stability concerns, evidence of the hazardous conditions and need for retention of the gunite shall be submitted for the review and written approval of the Executive Director, who may allow for retention of some or all of the gunite without an amendment to this permit. If any gunite is retained, it shall be colored to match the adjacent natural bluff.

   (c) Any existing permanent irrigation system located on the subject sites that drains anywhere on or over the bluff top and face shall be removed or capped.

   (d) All runoff from impervious surfaces on the top of the bluff shall be collected and directed away from the bluff edge towards the street.

   (e) A final site plan shall be submitted that includes the bluff top structures and square footage of all bluff top structures and property lines for the subject sites. In addition, all existing accessory improvements (e.g. decks, patios, walls, windscreens, etc.) located in the geologic setback area on the residential sites shall be detailed and drawn to scale on the final approved site plan and shall include

measurements of the distance between the accessory improvements and the bluff edge (as defined by Section 13577 of Title 14, California Code of Regulations) taken at three or more locations. The locations for these measurements shall be identified through permanent markers, benchmarks, survey position, written description, or other method that enables accurate determination of the location of structures on the site. No modifications or removal or replacement of any existing accessory structures is authorized by this permit and any such actions shall require a separate coastal development permit or permit amendment.

The permittees shall undertake development in conformance with the approved final plans unless the Commission amends this permit or the Executive Director determines that no amendment is legally required for any proposed minor deviations.

2. **Shoreline Structure Authorization, Design, Monitoring and Maintenance.**

(a) **Shoreline Structure Terms.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit, for the review and written approval of the Executive Director, a final revised plan for the authorized shoreline structure. The revised plans shall, prior to submittal to the Executive Director, be reviewed and certified by a licensed civil or geotechnical engineer to ensure they are consistent with the Commission's approval and the following specific requirements:

i. **Authorization Terms.** This CDP authorizes the shoreline structure pursuant to all of the following terms:

A. **Expiration**. This authorization expires when the blufftop residence at 235 Pacific Avenue or the blufftop residence at 241 Pacific Avenue is (1) redeveloped as defined in Special Condition 3; (2) is no longer present; or (3) no longer requires shoreline armoring, whichever occurs first. No later than 180 days prior to the anticipated expiration of the permit or in conjunction with redevelopment of either of the properties, the permittees shall apply for a new CDP or amendment to this CDP to remove the shoreline armoring or to modify the terms of its authorization, including with respect to any necessary mitigation.

B. Extension of Authorization and Mitigation. If either permittee intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period (beginning on the building permit completion certification date) the permittees shall submit a complete application for a CDP or amendment to this CDP to reassess mitigation for the on-going impacts of the structure, including an evaluation of actions to reduce or eliminate those impacts. The complete application shall be submitted no later than 6 months prior to the end of the mitigation period. Any amendment application shall conform to the Commission's permit filing regulations at the time and shall also include the following at a minimum:

1. An analysis, based on the best available science and updated standards, of beach erosion, wave run-up, sea level rise, inundation, and flood hazards prepared by a licensed civil engineer with expertise in coastal engineering, and a slope stability analysis prepared by a licensed Certified Engineering Geologist, Geotechnical Engineer, or Registered Civil Engineer with expertise in soils;

2. An evaluation of alternatives that would maintain stability of the pre-Coastal Act structures for their remaining life or site any new development to an inland location, such that further alteration of natural landforms or impact to adjacent City-owned bluffs and beach, tidelands, or public trust lands is avoided;

3. An analysis of the condition of the existing shoreline armoring and all impacts it is having or is likely to have on public access and recreation, scenic views, sand supply, and other coastal resources;

4. An evaluation of the opportunities to remove or modify the existing shoreline armoring in a manner that would eliminate or reduce the impacts, taking into consideration the requirements of the Solana Beach certified LCP and all applicable Chapter 3 policies of the Coastal Act;

5. For amendment applications to extend the authorization period, a proposed mitigation program to address all unavoidable impacts; and

6. A legal description and graphic depiction of all subject property lines and the mean high tide line surveyed by a licensed surveyor within the previous two years, along with written evidence of consent to the amendment application by all landowners, including the City of Solana Beach, the State Lands Commission, and any other entity.

The permittees shall undertake development in conformance with the approved final plans unless the Commission amends this permit or the Executive Director determines that no amendment is legally required for any proposed minor deviations.

(b) **Structure Color and Texture.** The color and texture of the structure shall be compatible with the nearby unarmored natural bluffs**,** including, at a minimum, that:

i. the structure will be designed, including shaped, contoured and textured, as necessary to match the adjacent landforms; and

ii. the color, contours, and texture will be maintained throughout the life of the structure.

(c) **Monitoring and Maintenance.**

i. **Monitoring Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit a monitoring plan, prepared by a licensed geologist, civil engineer, or geotechnical engineer for the review and written approval of the Executive Director. The plan shall be sufficient to assess the condition of the seawall and geogrid structure and shall include at a minimum:

A. A description of the approved shoreline protection device;

B. A discussion of the goals and objectives of the plan, which shall include observations of whether the seawall remains in its approved state;

C. Provisions for taking measurements of the distance between the bluff top structures protected by the seawall and the top of the bluff, including identification of exactly where such measurements will be taken in accordance with Section 13577 of Title 14 of the California Code of Regulations, e.g. by reference to benchmarks, survey positions, points shown on an exhibit, etc., and the frequency with which such measurements will be taken;

D. Mean High Tide Line Monitoring. Monitoring pegs or markers flush with the seawall and suitable to withstand a marine environment shall be installed at ten foot intervals along the face of the entire seawall at the same elevation of the MHTL and at an elevation of five feet above the MHTL. The placement of the monitoring pegs or markers shall be certified by a licensed surveyor. The monitoring pegs or markers shall be inspected regularly and any missing pegs or markers shall be replaced within a month from the time that the missing peg or marker is noticed; and

E. Provisions for submission of "as-built" plans, showing the permitted structure in relation to the existing topography and showing the measurements described in subsection (c)i.C. of this condition, within 30 days after completion of construction.

ii. **Monitoring Requirement**. By May 1 of each third year from the date of approval and for the life of the structure, the permittees shall submit a monitoring report that has been prepared by a licensed geologist, civil engineer, or geotechnical engineer. Each monitoring report shall contain the following, at a minimum:

A. An evaluation of the condition and performance of the approved shoreline protection device, including an assessment of whether any weathering or damage has occurred that could adversely impact future performance of the device;

B. All measurements taken in conformance with the approved monitoring plan;

C. An analysis of erosion trends, annual retreat, or rate of retreat of the bluff based upon the measurements and in conformance with the approved monitoring plan; and

D. Recommendations for repair, maintenance, modifications or other work to the device.

If the monitoring report contains recommendations for repair, maintenance or other work, including maintenance of the color of the structure to ensure a continued match with the surrounding native bluffs, the permittees shall contact the Executive Director to determine whether a coastal development permit or an amendment to this permit is legally required, and, if required, shall subsequently apply for a coastal development permit or permit amendment for the required maintenance within 90 days of the report submittal.

iii. Additional monitoring reports to the City and Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration, which evaluate whether or not the shoreline protection device is still required to protect the existing structure it was designed to protect. Within six months of a determination that the shoreline protection device authorized by this permit is no longer required to protect the existing structures it was designed to protect, the permittees shall submit a CDP application to remove the shoreline protection device.

3. **Reliance on Permitted Shoreline Armoring.** No future development that is not otherwise exempt from coastal development permit requirements, including additions, major structural alterations, or redevelopment of the structures on the subject blufftop properties, may rely on the permitted shoreline armoring 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, or shall not be permitted. As used in this condition, "redeveloped" or "redevelopment" means:

(a) Development that consists of alterations including (1) additions to an existing structure, (2) exterior and/or interior renovations, or (3) demolition or replacement of an existing home or other principal structure, or portions thereof, which results in:

i. Alteration (including demolition, renovation or replacement) of 50% or more of major structural components including exterior walls, floor structure, roof structure or foundation, or a 50% increase in gross floor area. Alterations under this definition 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, and as further defined in the Solana Beach LUP as approved by the Commission;

OR

ii. Alteration (including 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 greater than 50% of the floor area, taking into consideration previous additions approved on or after the date of certification of the LUP.

4. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the applicants acknowledge and agree (i) that the site may be subject to hazards, including but not limited to waves, storms, flooding, landslide, bluff retreat, erosion, and earth movement, many of which will worsen with future sea level rise; (ii) to assume the risks to the permittees and the properties that are the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

5. **State Lands Commission Approval**. PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and written approval, 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 applicants with the State Lands Commission for the project to proceed without prejudice to the determination.

6. **Future Response to Erosion.** If the permittees intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period or if in the future the permittees seek a coastal development permit to construct additional bluff or shoreline protective devices, the permittees agree, by acceptance of this permit, to include in the permit application information concerning specific alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, public access and recreation, and shoreline processes. Alternatives shall include, but not be limited to: relocation of all or portions of the principal structures that are threatened; structural underpinning; and other known remedial measures capable of protecting the principal residential structures and allowing reasonable use of the properties without constructing additional bluff or shoreline stabilization devices. The information concerning these alternatives must be sufficiently detailed to enable the Coastal Commission or the applicable local government implementing a certified Local Coastal Plan to evaluate the feasibility of each alternative and whether each alternative is capable of protecting the relevant existing principal structures for the remainder of their economic lives. No additional bluff or shoreline protective devices may be constructed unless and until the alternatives required above are demonstrated to be infeasible. Any additional shoreline protective devices may be constructed only to protect existing principal structures. Any future redevelopment on the lots may not rely on the subject shoreline protective devices to establish geological stability or protection from hazards.

7. **Mitigation for Impacts to Public Access and Recreational Opportunities/Sand Supply**.

   (a) PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, a fee of $127,786 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing new beach area to replace the beach are that will be lost due to the impacts of the seawall for the an 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.

   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 Capital Improvement Projects (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.

   (b) WITHIN 30 DAYS OF THE START OF CONSTRUCTION, the applicants shall submit documentation of the area (i.e., the depth and width between the rear of the notch or seacave and the bluff drip line) of any notch or seacave at the base of the bluff to the Commission and to the City and shall submit an

additional an additional in-lieu Public Access Fee to the City for the area based on the City's Public Access Fee method.

(c) PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of $29,669 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing the total amount of sand to replace the sand that will be lost due to the impacts of the seawall for the an 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.

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 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.

8. **Storage and Staging Areas/Access Corridors.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants 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, at a minimum:

(a) No overnight storage of equipment or materials may occur on sandy beach or at the Fletcher Cove Parking Lot, and the use of other public parking spaces shall be minimized. The permittee may 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 may be placed, stored or otherwise located in the intertidal zone at any time, except for the minimum necessary to construct the seawall. Construction equipment may not be washed on the beach or public parking lots or access roads;

(b) Construction access corridors shall be located in a manner that has the least impact on public access to and along the shoreline;

(c) No work may occur on the beach on weekends or holidays or between Memorial Day weekend and Labor Day of any year;

(d) The applicants shall submit evidence that the approved plans and plan notes have been incorporated into construction bid documents; and

(e) The permittees shall remove all construction materials and equipment from the staging site and restore the staging site to its prior-to-construction condition within 72 hours following completion of the development.

The permittees 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.

9. **Water Quality--Best Management Practices.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit for review and written approval of the Executive Director a Best Management Practices Plan that ensures no shotcrete or other construction byproduct will be allowed onto the sandy beach or allowed to enter into coastal waters. The Plan shall apply to both concrete pouring/pumping activities as well as shotcrete/concrete application activities. During shotcrete/concrete application specifically, the Plan shall at a minimum provide for all shotcrete/concrete to be contained through the use of tarps or similar barriers that completely enclose the construction area and that prevent shotcrete/concrete contact with beach sands and coastal waters. All shotcrete and other construction byproduct shall be properly collected and disposed of off-site.

   The applicants 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.

10. **Encroachment Agreement.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicants shall submit to the Executive Director for review and approval documentation demonstrating that the applicants have executed an Encroachment Agreement with the City, recognizing that the seawall is located on property owned by the City and is subject to removal by request of the City at any time, or evidence that an Encroachment Agreement is not required by the City. Within 90 days of the City's request for removal, the applicants shall submit an amendment to this CDP proposing removal of the encroachment in its entirety. Permittees may remove the encroachment only after the Commission issues the CDP amendment.

11. **As-Built Plans.** WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit two copies of As-Built Plans showing all development completed pursuant to this coastal development permit; all property lines; and all residential development inland of the seawall structure. The As-Built plans shall include the depth of any notch in the bluff as documented according to the requirements of Special Condition 7(b). The As-Built Plans shall be substantially consistent with the approved project plans described in Special Condition 1, including providing for all of the same requirements specified in those plans. The As-Built

Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD) 88. The As-Built Plans shall include color photographs that clearly show all components of the as-built project, with a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be taken from representative viewpoints of beaches located upcoast, downcoast, and seaward of the project site. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, whose qualifications are acceptable to the Executive Director. The engineer shall verify that the shoreline armoring has been constructed in conformance with the approved final plans.

12. **Public Rights.** The Coastal Commission's approval of this permit shall not constitute a waiver of any public rights that exist or may exist on the property. By acceptance of this permit, the applicants acknowledge, on behalf of him/herself/itself and his/her/its successors in interest, that issuance of the permit and construction of the permitted development shall not constitute a waiver of any public rights that may exist on the property.

13. **Deed Restriction.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall submit to the Executive Director for review and approval documentation demonstrating that the landowners have executed and recorded against their respective 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.

14. **Construction Site Documents & Construction Coordinator.** DURING ALL CONSTRUCTION:

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

    (b) **Construction Coordinator**. A construction coordinator shall be designated to be

contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and the coordinator's contact information (office address, office and mobile phone numbers, e-mail address) for the duration of construction shall be conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with an indication that the construction coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 72 hours of receipt of the complaint or inquiry.

(c) **Notification.** The permittee shall notify planning staff of the Coastal Commission's San Diego Coast District Office at least three working days in advance of commencement of construction or maintenance activities, and immediately upon completion of construction or maintenance activities.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The proposed development involves the construction of a 150 ft. long, 35 ft. high, 28 in. wide structural shotcrete tied-back seawall to fully armor the entirety of the unarmored publicly-owned coastal bluff area between an existing seawall to the north (Ref: CDP 6-13-0437/ Presnell/Graves LLC.) and an existing seawall to the south (Ref: CDP 6-09-033/Garber et al.). The proposed seawall would be located on city-owned public beach and the bluff face of an 85 ft.-high coastal bluff fronting three existing single family residences located at 235, 241, and 245 Pacific Avenue in the City of Solana Beach. The project also includes construction of an approximately 45-130 ft. wide, approximately 50 ft. high geogrid structure on the bluff face, largely below the two homes at 235 and 241 Pacific Avenue (Exhibits 3-7) . Additionally, the applicants propose to remove failing portions of old, fragmented gunite located on the upper bluff beneath 235 Pacific, and install landscaping within both the new geogrid structure and the remaining intact portion of the existing gunite(Exhibit 11). The project location is approximately 600 ft. north of Fletcher Cove, the one the City's primary beach parks and accessways (Exhibits 1-2).

Site History (235 Pacific Avenue)

- The existing 1,382 sq. ft. single family bluff top home was constructed prior to the Coastal Act, in 1954.
- In September 1975, the San Diego Coast Regional Commission approved a remodel and a 505 sq. ft. addition to the home, resulting in a total of 1,382 sq. ft. (F2877/Myers).

- Photographs of the site between 1972 and present show concrete gunite on the upper bluff. Recent photographs of the concrete gunite appear to show that it is failing.
- There is no shoreline armoring fronting the subject site (aside from the failing concrete gunite).
- The existing home is currently located approximately 11 ft. from the bluff edge.

Site History (241 Pacific Avenue)

- The existing 3,419 single family bluff top home was constructed in the mid-1950s.
- In April of 1989, the Commission approved a remodel and a 2,040 sq. ft. second story addition to the residence, resulting in a total of 3,419 sq. ft. (CDP 6-89-029/Haggerty).
- In October of 2008, the Commission approved the construction of nine drilled pier concrete caissons (approximately 30 in. diameter, 45 ft. depth and placed 8-ft. on center) with a grade beam on top supported with 6 tiebacks located approximately 5 ft. seaward of the existing residence (6-07-132/Hawkins). The bluff seaward of the caissons failed soon after installation and the caissons are currently exposed (Exhibit 11).
- The exposed caissons represent the only shoreline armoring fronting the site.
- The existing home is currently located approximately 3 ft. from the bluff edge.

Site History (245 Pacific Avenue)

- In May of 1996, the Commission approved a Coastal Development Permit for the demolition of an existing 1,135 sq. ft. single-family residence and an existing 186 sq. ft. detached garage and construction of the 3,951 sq. ft. tri-level single-family residence on the bluff-top lot. The applicant chose to construct the home seaward of the 40 ft. bluff edge setback and as such, a condition of the CDP approval required that the applicant waive his right to construct shoreline armoring to protect the portion of the home closer than 40 feet from the bluff edge (CDP 6-96-021/Ratkowski) (Exhibit 13).
- The existing home is currently located approximately 22 ft. from the bluff edge and there is no shoreline armoring fronting the site.

The Commission has certified the City's Land Use Plan (LUP). However, the City does not yet have a certified Implementation Plan. Therefore, the Chapter 3 policies of the Coastal Act are the standard of review, with the certified LUP used as guidance.

Other Shoreline Armoring in the Surrounding Area

There is a significant amount of existing shoreline protection adjacent to the subject site. A similar seawall to that proposed fronts the bluff for the next five homes to the south of the unarmored bluff gap (Ref: CDP 6-09-033/Garber et al.) and a continuous seawall has been constructed fronting 24 properties to the north (Ref: seawalls from south to north -

CDP 6-13-0437/ Presnell & Graves LLC.; 6-99-100/ Presnell et al.; 6-03-126/Corn & Hajjar; 6-00-036/ Corn & Scism; 6-00-138/Greenbberg & Kinzel; 6-02-002/Gregg & Santina; 6-13-025/Koman et al.; 6-02-084/Scism; 6-08-073/Cummings & DiNoto, et. al.; 6-04-083/Cumming & Johnson; 6-08-68/Hamilton Trust; 6-07-134/Brehmer, Matchinske, & Caccavo) (Exhibit 10).

B. GEOLOGIC CONDITIONS AND HAZARDS

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 certain LUP policies for guidance as relevant.

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

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

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

The following describes the types of preferred bluff retention systems to protect the lower bluff only:

[…]

***Higher Seawall/Clean Sand Lens Encapsulation (See Appendix B Figure 2)** – If the clean sand lens has been exposed, it may be necessary to build a seawall high enough* [sic] *cover this segment of the bluff face. This method consists of a structurally engineered seawall (with tiebacks into the sandstone) approximately 35' high to protect and encapsulate the clean sand lens at the base of the terrace deposits. The wall is required to have a textured face mimicking the existing material. If treated at this stage, the bluff retention system will minimize or prevent the need for future mid or upper bluff stabilization.*

***Policy 4.17:** New development shall be set back a safe distance from the bluff edge, with a reasonable margin of safety, to eliminate the need for bluff retention devices to protect the new improvements. All new development, including additions to existing structures, on bluff property shall be landward of the Geologic Setback Line (GSL) as set forth in Policy 4.25. This requirement shall apply to the principal structure and accessory or ancillary structures such as guesthouses, pools, tennis courts, cabanas, and septic systems, etc. Accessory structures such as decks, patios, and walkways, which are at-grade and do not require structural foundations may extend into the setback area no closer than five feet from the bluff edge. On lots with a legally established bluff retention device, the required geologic analysis shall describe the condition of the existing seawall; identify any impacts it may be having on public access and recreation, scenic views, sand supply and other coastal resources; and evaluate options to mitigate any previously unmitigated impacts of the structure or modify, replace, or remove the existing protective device in a manner that would eliminate or reduce those impacts. In addition, any significant alteration or improvement to the existing structure shall trigger such review (i.e. the analysis of the seawall) and any unavoidable impacts shall be mitigated.*

***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.*

***Policy 4.23:** Where setbacks and other development standards could preclude the construction of a home the City may consider options including but not limited to reduction of the two car onsite parking space requirement to a one car onsite parking requirement or construction within five feet of the public right of way front yard setback for all stories as long as adequate architectural relief (e.g., recessed windows or doorways or building articulation) is maintained as determined by the City. The City may also consider options including a caisson foundation with a minimum 40 foot bluff top setback to meet the stability requirement and avoid alteration of the natural landform along the bluffs. A condition of the permit for any such home shall expressly require waiver of any rights to new or additional buff*

retention devices which may exist and recording of said waiver on the title of the bluff property.

***Policy 4.45**: The City has adopted preferred bluff retention solutions (see Appendix B) to streamline and expedite the City permit process for bluff retention devices. The preferred bluff retention solutions are designed to meet the following goals and objectives:*

(1) Locate bluff retention devices as far landward as feasible;

(2) Minimize alteration of the bluff face;

(3) Minimize visual impacts from public viewing areas;

(4) Minimize impacts to adjacent properties including public bluffs and beach area; and,

(5) Conduct annual visual inspection and maintenance as needed. […]

***Policy 4.47:** All proposed development on a beach or along the shoreline, including a shoreline protection structure located within the jurisdiction of the State Lands Commission: (1) must be reviewed and evaluated in writing by the State Lands Commission and (2) may not be permitted if the State Lands Commission determines that the proposed development is located on public tidelands or would adversely impact tidelands unless State Lands Commission approval is given in writing*

***Policy 4.49:** Coastal structures shall be approved by the City only if all the following applicable findings can be made and the stated criteria satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first 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.

(1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure.

(2) The coastal structure is more likely than not to preclude the need for a larger coastal structure or upper bluff retention structure. Taking into consideration any applicable conditions of previous permit approvals for development at the subject 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:

- *A Seacave/Notch Infill;*
- *A smaller coastal structure; or*
- *Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure, which might include 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;*

(3) The bluff property owner did not create the necessity for the coastal structure 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.

(4) The location, size, design and operational characteristics of the proposed coastal structure 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 coastal structure and the coastal structure is the minimum size necessary to protect the principal structure, 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 coastal structure shall meet City Design Standards, which shall include the following criteria to ensure the coastal structure will be:

(1) Constructed to resemble as closely as possible the natural color, texture and form of the adjacent bluffs;

(2) Landscaped, contoured, maintained and repaired to blend in with the existing environment;

(3) Designed so that it will serve its primary purpose of protecting the bluff home or other principal structure, provided all other requirements under the implementing ordinances are satisfied, with minimal adverse impacts to the bluff face;

(4) Reduced in size and scope, to the extent feasible, without adversely impacting the applicants' bluff property and other properties; and

(5) Placed at the most feasible landward location considering the importance

of preserving the maximum amount of natural bluff and ensuring adequate bluff stability to protect the bluff home, City facility, or City infrastructure.

(C) Mitigation for the impacts to shoreline sand supply, public access and recreation and any other relevant coastal resource impacted by the coastal structure is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the coastal structure beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the coastal structure to lessen the coastal structure's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of CDP issuance until CDP expiration, which evaluate whether or not the coastal structure is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized coastal structure within six months of a determination that the coastal structure is no longer required to protect the existing structure it was designed to protect.

***Policy 4.52**: An upper bluff system shall be approved only if all the following applicable findings can be made and the stated criteria will be satisfied. The permit shall be valid until the currently existing structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and subject to an encroachment/removal agreement approved by the City.*

(A) Based on the advice and recommendation of a licensed Geotechnical or Civil Engineer, the City makes the findings set forth below.

(1) A bluff failure is imminent that would threaten a bluff home, city facility, city infrastructure, and/or other principal structure in danger from erosion and, that

(2) The bluff home, city facility, city infrastructure, and/or principal structure is more likely than not to be in danger within one year after the date an application is made to the City.

Taking into consideration any applicable conditions of previous permit approval for development at the subject site, determination must be made based on a detailed alternatives analysis that none of the following alternatives to the upper bluff system are then currently feasible, including:

- *No upper bluff system;*

- *Vegetation;*
- *Controls of surface water and site drainage;*
- *A revised building footprint and foundation system (e.g., caissons) with a setback that avoids future exposure and alteration of the natural landform;*
- *A smaller upper bluff system;*
- *Other remedial measures capable of protecting the bluff home, city facility, non-city-owned utilities, and/or city infrastructure which might include tiebacks, other feasible 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, the public beach, and, contiguous bluff properties; and,*
- *Removal and relocation of all, or portions, of the affected bluff home, city facilities or city infrastructure.*

(3) The bluff property owner did not create the necessity for the upper bluff system 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.

(4) The location, size, design and operational characteristics of the proposed upper bluff system 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 upper bluff system and the upper bluff system is the minimize size necessary to protect the existing principal structure, 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 upper bluff system shall meet City Design Standards applicable to bluff retention devices, including ensuring the natural bluff face is preserved to the greatest extent feasible, by using soft systems such as Geogrid, Geoweb, and planted with native species. The upper bluff system shall be designed to minimize alterations of natural landforms and shall not have a material adverse visual impact. The upper bluff slope shall be designed to have both vertical and horizontal relief.

(C) All upper bluff systems shall be subject to the same permitting time frames as specified for a coastal structure, and may be subject to removal based upon the same time frames and similar criteria set forth for removal of coastal structures, as reasonably determined by the City.

(d) Mitigation for the impacts to shoreline and sand supply, public access and recreation and any other relevant coastal resource impacted by the upper bluff system is required and shall be assessed in 20-year increments, starting with the building permit completion certification date. Property owners shall apply for a CDP amendment prior to expiration of each 20-year mitigation period, proposing mitigation for coastal resource impacts associated with retention of the upper bluff system beyond the preceding 20-year mitigation period and shall include consideration of alternative feasible measures in which the permittee can modify the upper bluff system to lessen the upper bluff system's impacts on coastal resources. Monitoring reports to the City and the Coastal Commission shall be required every five years from the date of the CDP issuance until CDP expiration, which evaluate whether or not the upper bluff system is still required to protect the existing structure it was designed to protect. The permittee is required to submit a CDP application to remove the authorized upper bluff system within six months of a determination that the upper bluff system is no longer required to protect the existing structure it was designed to protect.

Policy 4.53: *All permits for bluff retention devices shall expire when the currently existing blufftop structure requiring protection is redeveloped (per definition of Bluff Top Redevelopment in the LUP), is no longer present, or no longer requires a protective device, whichever occurs first and a new CDP must be obtained. Prior to expiration of the permit, the bluff top property owner shall apply for a coastal development permit to remove, modify or retain the protective device. In addition, expansion and/or alteration of a legally permitted existing bluff retention device shall require a new CDP and be subject to the requirements of this policy.*

The CDP application shall include a re-assessment of need for the device, the need for any repair or maintenance of the device, and the potential for removal based on changed conditions. The CDP application shall include an evaluation of:

- *The age, condition and economic life of the existing principal structure;*
- *changed geologic site conditions including but not limited to, changes relative to sea level rise, implementation of a long-term, large scale sand replenishment or shoreline restoration program; and*
- *any impact to coastal resources, including but not limited to public access and recreation.*

The CDP shall include a condition requiring reassessment of the impacts of the device in 20-year mitigation periods pursuant to Policies 4.48 and 4.51.

No permit shall be issued for retention of a bluff retention device unless the City finds that the bluff retention device is still required to protect an existing principal structure in danger from erosion, that it will minimize further

alteration of the natural landform of the bluff, and that adequate mitigation for coastal resource impacts, including but not limited to impacts to the public beach has been provided.

***Policy 4.62**: Existing bluff retention devices which are not considered preferred bluff retention solutions and do not conform to the provisions of the LCP, including the structural or aesthetic requirements may be repaired and maintained to the extent that such repairs and/or maintenance conform to the provisions of the LCP…*

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

The Coastal Act and certified LUP acknowledge that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion alter natural landforms and natural shoreline processes resulting in a variety of negative impacts on coastal resources, including adverse effects on sand supply, public access and recreation, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, including ultimately resulting in the loss of beach. Thus, such devices may be constructed only to protect principal structures or public beaches in danger from erosion, and only when designed to eliminate or mitigate adverse impacts on local sand supply.

In the majority of the City of Solana Beach there is a "clean sand" lens located between the Torrey Sandstone and Marine Terrace deposits at approximately elevation +25 to +35 feet Mean Sea Level (MSL). This clean sand lens consists of a layer of sand with a limited amount of capillary tension and a very minor amount of cohesion, which causes

the material to erode easily, making this clean sand lens, once exposed, susceptible to windblown erosion and continued sloughing as the sand dries out and loses the capillary tension that initially held the materials together. Geotechnical reports associated with developments near this site have stated that minor disturbances such as gentle sea breezes, landing birds or vibrations from low-flying helicopters, can be sufficient triggers of small- or large-volume bluff collapses, since the loss of the clean sand eliminates the support for the overlying, slightly more cemented, terrace deposits. Because of the cohesionless character of the clean sand, once deposits are exposed, they continue to slump on an ongoing basis as a result of very small triggers such as traffic vibrations or wind erosion. Continued sloughage results in the further exposure of more clean sand, and ongoing upper bluff collapse. This cycle occurs so quickly (over months or days, rather than years) that the upper bluff may never achieve a stable angle of repose. Unless the base of the bluff is afforded shoreline protection and the clean sand lens is contained, additional bluff failures can further expose the layer of clean sand and result in a potential upper bluff failure and an immediate threat to the structures at the top of the bluff.

The factor of safety is an indicator of slope stability where a value of 1.5 is the industry-standard value for geologic stability of new development placed on a slope. In theory, failure should occur when the factor of safety drops to 1.0, and no slope area with a proposed new-development footprint should have a factor of safety less than 1.5.

At the subject site, an ~10 ft. thick clean sand layer is exposed across a 74 ft. long section of the bluff. The slope stability analysis performed by the applicants' engineer indicates that further collapse of the upper bluff would threaten the structures at the top of the bluff. Slope static/pseudostatic stability analyses for the bluff at 235 Pacific, 241 Pacific, and 245 Pacific demonstrate a factor of safety of 1.22/0.95, 1.12/0.90, and 0.99/0.80, respectively. These factors of safety alone may not necessitate shoreline protection. However, when taken in combination with the exposure of the clean sand layer, the Commission senior engineer and geologist agree that the applicants' geotechnical analysis conclusion that each of the three residences are at risk, and that shoreline protection is warranted.

However, one factor in determining whether shoreline protection should be approved is whether the development at risk is entitled to shoreline protection under Section 30235 of the Coastal Act. The home at 235 Pacific Avenue, which is the southernmost of the three subject properties, was constructed prior to enactment of the Coastal Act, and aside from a small addition in 1975, no other major improvements to the property have been undertaken. Thus, the structure is considered "existing" for purposes of requiring protection under Section 30235 of the Coastal Act.

The adjacent home to the north at 241 Pacific Avenue was also constructed prior to enactment of the Coastal Act, although an addition constructed in 1989 resulted in a greater than 50% increase in the size of the home (1,379 sq. ft. to 3,419 sq. ft.). As described in the Commission's 2015 Sea Level Rise Policy Guidance, the Commission interprets the term "existing structures" in Coastal Act Section 30235 as meaning structures that were in existence on January 1, 1977—the effective date of the Coastal Act. The Commission's draft Residential Adaption Policy Guidance Interpretive

Guidelines further suggest that pre-Coastal Act structures that have been altered in such a way that greater than 50% of the structure is replaced or structures that have been increased in size by greater than 50% should be considered new development or redevelopment and not an existing structure pursuant to Section 30235.

However, the City of Solana Beach certified LUP defines blufftop redevelopment as cumulative alterations or additions greater than 50% approved on or after the date of certification of the LUP (2012), not the enactment of the California Coastal Act of 1976. Thus, the residence is considered "existing" for purposes of requiring protection under Section 30235 of the Coastal Act.

The home at 245 Pacific Avenue is the northernmost of the three subject homes. The bluff top residence is not an existing structure for purposes of Section 30235 of the Coastal Act because it was originally permitted and built after 1976, thereby postdating the enactment of California Coastal Act. Furthermore, as identified in Project Description/Site History section of this report, when construction of the home was approved by the Commission, two options were provided to the landowner. The first option was to set the home back 40 feet from the bluff edge in a location that would have a higher likelihood to be safe for 75 years from bluff erosion. The second option was to set the home a minimum of 25 feet back from the bluff edge and waive all rights to construct any upper or lower bluff stabilization devices (other than filling of seacaves) to protect any portion of the residence located within the 40 ft. blufftop setback area, to utilize a foundation design that could be removed in the event of endangerment, and to record a deed restriction acknowledging that the portion of the home located closer than 40 ft. from the bluff edge would be removed if the bluff edge receded to within 10 ft. of the structure and that portion of the home was considered unsafe for occupancy. The landowner chose the second option and sited the home 25 feet back from the bluff edge. Thus, the Commission allowed the landowner to assume the risk of siting the home closer to the bluff edge, as long as the landowner agreed to waive the right to shoreline protection to protect the seaward portion of the home and to remove that portion of the home if it became unsafe for occupancy (Ref: Special Conditions of 6-96-021 in Exhibit 13) (Ref: CDP #6-96-021/Ratkowski).

The slope stability analysis provided by the applicant shows that the seaward portion of the home at 245 Pacific Avenue is threatened by erosion. The analysis does not indicate that the portion of the home landward of the original 40 ft. bluff setback is currently at risk). Thus, the Commission is not required to approve shoreline armoring to protect the bluff top residence at 245 Pacific Avenue.

Alternatives

The applicants' geotechnical report and subsequent correspondence include an alternatives analysis to demonstrate that no other feasible less-environmentally-damaging structural alternatives exist to address the threats to the two residential structures at the top of the bluff that are considered pre-coastal "existing structures" entitled to shoreline armoring (235 and 241 Pacific Avenue). Alternatives considered were to:

- Construct of seawall with a reduced height

The applicants have documented that the upper bluff is actively eroding and that the approximately 10 ft. high clean sand lens begins at elevation ~25 ft. MSL. Thus, construction of a seawall that does not encompass the clean sand lens would not provide adequate protection for the threatened blufftop structures.

- Place rock rip-rap alone with no seawall

These structures can be relatively quickly installed and can protect the base of the bluff. However, they also require significant maintenance to ensure they continue to function in the approved state, leading to significant adverse resource impacts each time. Because their foundations are wide, revetments normally occupy a large area of beach. Migrating boulders can also lead to isolated impacts over time, expand the loss of beach area and cumulatively can lead to larger impacts. In addition, a revetment would only protect the lower bluff from wave action and would do nothing to encapsulate the clean sand lens or address the potential for a landslide. In addition, a revetment would not provide adequate support for the lower portion of the bluff and the homes would still be threatened. Thus, a rip rap revetment would not reduce impacts to coastal resources or resolve the threat to the subject homes.

- Underpinning the western edge of the blufftop homes

Another alternative involves underpinning of the existing homes. This alternative would consist of installing drilled piers below or just seaward of the western walls of the structures. Underpinning would not stop the upper or lower bluff from continuing to erode and would result in significant adverse visual impacts as the piers became exposed. As described previously, a below-grade caisson and grade beam system was previously installed seaward of the home at 241 Pacific. Bluff erosion has exposed a portion of the piers at 241 Pacific Avenue. Additionally, the applicants contend that if piers were installed, the collapse on the site triggered by the erosion of the clean sand would continue to grow laterally, undermining the upper bluffs and eventually destabilizing adjacent bluff-top structures.

- Improved drainage and landscaping

Improved drainage and landscaping atop the bluffs is another option that is typically considered. Appropriate drainage measures coupled with planting long-rooted native bluff species can help to stabilize some bluffs and extend the useful life of setbacks. Thus, Special Condition 1 requires that all runoff from impervious surfaces on the bluff be collected and drain towards the street, so that any drainage over the bluff face will be minimized and not adversely impact bluff stability. However, these measures alone will not address the entire identified threat to the existing bluff top structures.

- Modification or Relocation of the Existing Structures to Avoid Construction of a Seawall or Mid and Upper Bluff Geogrid Structure

Relocation is another alternative that is typically considered a reasonable and feasible alternative to consider. The Commission typically requires that new homes be sited landward of the Geologic Setback Line (GSL) on bluff top sites, which consists of the combination of the current 1.5 Factor of Safety (FOS) setback and 75 years of expected erosion. On the subject sites, it would not be feasible to construct homes landward of the GSL, as the identified 1.5 FOS Setback alone is located ~10 ft. from the eastern property line at 241 Pacific Avenue and ~25-35 ft. from the eastern property line at 235 Pacific Avenue.

- Modification or Relocation of the Existing Structures with Caisson Foundations to Avoid Construction of a Mid and Upper Bluff Geogrid Structure

The LUP policies, as currently certified, require that once a property is protected by a lower seawall, if the existing principal structure on the bluff is determined to still be at risk in the future, the first and preferred means of stabilizing an existing home, must be to remove or relocate the threatened portions of the home and to install caissons underneath the structure no closer than 40 feet from the bluff edge.

The applicants assert that if the home at 235 Pacific Avenue were to be reconstructed further landward on the site, the bluff would continue to fail, which would threaten the existing pre-Coastal Act home and the permitted seawall adjacent to the south.

As a part of the Commission's 2008 approval of the below-grade caisson system for the home at 241 Pacific Avenue, a Special Condition was included that requires that if in the future the permittee seeks a coastal development permit to construct additional bluff or shoreline protective devices, the permittee will be required to include in the permit application information concerning alternatives to the proposed bluff or shoreline protection that will eliminate impacts to scenic visual resources, recreation and shoreline processes. The Special Condition further requires that the applicant analyze, and implement, if feasible, relocation of all or portions of the principal structure that are threatened by bluff erosion, as an alternative to additional bluff or shoreline protection devices (Ref: Special Condition 3 of CDP 6-07-132/Hawkins).

The applicants' alternatives analysis, dated June 27, 2018, asserts that it would not be feasible to relocate the principal bluff top structure at 241 Pacific Avenue elsewhere on the subject site. The applicants contend that this alternative would be prohibitive because the cost of removing or relocating the home would be infeasible due to the property owner's likely inability to get a loan for the work and the likelihood that the current lender would require partial or full repayment of the existing multi-million dollar loan on the property. Furthermore, the applicant asserts that if the owner of 235 Pacific Avenue is allowed to construct a seawall and geogrid structure and no armoring is permitted seaward of 241 Pacific Avenue, the bluff failure fronting 241 Pacific Avenue would continue to threaten the home at 235 Pacific Avenue and would also threaten any new shoreline armoring.

Lastly, the applicants note that the existing partially exposed below grade retention system seaward of 241 Pacific Avenue is a permitted structure. If the proposed geogrid mid and upper bluff structure is not approved, the property owner is required by the City of Solana Beach to cover the exposed sections of the caissons with colored and textured shotcrete, forming a wall over the exposed areas. In addition to the covering of the exposed sections, the applicants' engineer has identified that once up to approximately 20 ft. in height of the caissons become exposed, it might be necessary to install additional tiebacks to the caisson system (Ref. "Response to 3rd Party Review" by Soil Engineering Construction, Inc. dated April 16, 2008). This would effectively result in the construction of an upper bluff wall, which is not one of the preferred coastal bluff retention designs identified in the certified LUP.

Thus, in this particular case, the applicants have provided sufficient information for the Commission to determine that rebuilding the two existing structures further landward on the site with caisson foundations such that the proposed mid and upper bluff geogrid structure would not be required, would not be the preferred alternative and may result in an even greater visual impact and alteration of the bluff than would result with the proposed geogrid structure.

- Planned or Managed Retreat

Another option often considered is planned or managed retreat. This option has been long debated and discussed more generally and should be considered in the context of a comprehensive vulnerability assessement and LCP update. In this case, the City has not yet completed a fully certified LCP. This concept posits that instead of allowing continued armoring, once the existing structures have been removed then the shoreline is allowed to retreat. Beach formation in this respect is partly assisted by the sand-generating material in the bluffs as they erode, but more importantly there is space for the natural equilibrium between the shoreline and the ocean to establish itself and for beaches to form naturally. Over the longer run, a more comprehensive strategy to address shoreline erosion and the impacts of armoring may be developed (e.g. planned or managed retreat, relocation of structures inland, abandonment of structures, etc.). However, including as discussed above, such options are infeasible at this location at this time. In order for planned retreat to work comprehensively in the future, the removal or modification of hard armoring structures at the project location would occur in conjunction with the removal of other shore-fronting development.

- Seawall and Geogrid Structure fronting 235 and 241 Pacific Avenue Only

A final alternative would be to approve only the seawall and geogrid mid and upper bluff structure to protect 235 and 241 Pacific Avenue, and leave an unarmored 'gap' of natural bluff fronting the home at 245 Pacific Avenue. This approach would arguably be most consistent with the intent of the Commission's 1996 approval, which was clearly intended to preclude the construction of shoreline protection in front of the subject residence. However, while the Commission is not required to approve protection for the home 245 Pacific Avenue, because the home is adjacent to other homes that are at risk

and are entitled to protection, there is no clear way to avoid some form of protection in front of 245 Pacific Avenue. The applicants' engineer submitted an additional slope stability analysis memo that calculated the expected slope stability of the existing bluff top homes directly to the north and south of the home at 245 Pacific Avenue if a 'gap' of unarmored bluff remained seaward of 245 Pacific (Ref: SEC Memo, dated January 3, 2019). The applicants' engineer explained that a gap in the seawall would result in potential flanking of the seawalls, thereby impacting the properties up and down coast of 245 Pacific Avenue (249 and 241). Therefore, the engineer concluded that a continuous wall, rather than two separate walls with a gap in the middle, is necessary to protect adjacent properties on both sides of 245 Pacific Avenue. The geotechnical memo states the following:

> *"…the factors of safety (FS) against sliding at the northwestern side of 241 Pacific and the southwestern corner of 249 Pacific pose an immediate concern. A bluff failure through the clean sand lens at 245 Pacific will cause a significant adverse impact to the residential structures at 241 & 249 Pacific. The results of our analyses indicate a 1.11 FS at the 241 property and a 1.16 FS at the 249 property. The results of our analyses are attached as Figures 4 & 5. It should be noted that the calculated FS's are conservative since building surcharge loads were not included in our analyses. If building surcharge loads were added, the FS would be even lower than currently documented.*
>
> *It should also be noted that, absent lower bluff protection at 245 Pacific, 241 Pacific would require a midbluff side wall, extending from the seawall to the top of bluff. However, this would be a very short-term solution, as additional failure of the lower bluff at 245 Pacific would jeopardize, at a minimum, lower portions of a mid bluff side wall. Such damage would also extend to the proposed Geogrid fill at 241Pacific. If that were allowed to occur, most of the disturbed/failed fill would be required to be removed and replaced. This would be a dangerous undertaking, considering the location adjacent to a public beach, steepness of the slope, extremely difficult access, and the possibility of continued bluff failures at 245 Pacific during the work. Such a failure would also extend to the property at 249, requiring a permit to build a mid-bluff side wall with fill and geogrid to replace failed natural bluff materials. This mid-bluff side wall would also provide only short-term protection if the failing 245 Pacific bluff was left unabated…"*

The Commission's senior engineer and geologist have examined the alternative of not constructing any devices seaward of 245 Pacific Avenue and concluded that it may be feasible to avoid constructing a wall at the base of the bluff below 245 Pacific Avenue at this time (Exhibit 15). However, the scope and scale of the alternative protective structure that would then be necessary to protect 249 Pacific Avenue would have more adverse impacts to coastal resources than the proposed wall. For instance, in order to prevent lateral erosion onto the property to the north, one alternative might be the construction of an east/west directed retaining wall that functions as a return wall to the lower seawall below 249 Pacific Avenue. A similar wall could be installed for the proposed seawall below 241 Pacific Avenue, thus leaving the bluff below 245 Pacific Avenue in its natural state. However, that alternative would likely result in accelerated

erosion of the bluff below 245 Pacific Avenue, which according to the applicants' engineer, would lead to undermining of the east/west perpendicular walls creating a threat to the residences at 249 and 241 Pacific Avenue. Continual monitoring and on-going construction of additional and larger walls, geogrid, etc. would be necessary as erosion continued to occur. Both immediately and in the future, the visual appearance of alternate protection necessary would have significant impacts on the visual resources of the shoreline which could not be adequately mitigated.

For context, the Commission has been faced with the decision on whether to leave a 'gap' of unarmored bluff in Solana Beach for three previous multi-property shoreline armoring requests where one of the homes had either waived their right to shoreline protection or could achieve an adequate level of stability without shoreline armoring. In each of these previous applications, the Commission determined that approval of shoreline armoring fronting the 'gap' property was the least environmentally damaging feasible alternative (Ref: 6-99-100/ Presnell et al., 6-08-073/Cummings & DiNoto, and 6-09-033/ Garber, et al.).

In the absence of a comprehensive plan addressing blufftop development in Solana Beach, over the years the Commission has placed waivers of future shoreline protection on houses on a project-by-project basis whenever new development is proposed. However, given the amount of closely spaced, existing development on the blufftop, even with the waiver in place, the Commission's ability to avoid shoreline protection has been limited. For example, in May 2014, the Commission reviewed an application for construction of a 49-foot long, 35-foot high extension to an existing lower coastal bluff seawall on the beach and bluff fronting 249 Pacific Avenue and partially fronting 245 Pacific Avenue (6-13-0437 Presnell/Graves LLC.) After reviewing the threat to the existing structure at 249 Pacific Avenue (immediately north of 245 Pacific Avenue), the Commission determined that no portion of the proposed wall could be located in front of 245 Pacific Avenue, given that the home at 245 Pacific had agreed to a waiver and the portion of the home located 40 feet from the bluff edge was not imminently threatened by erosion. However, as detailed above, the current threat to the existing structures to the south means that construction of a wall in front of 245 Pacific Avenue could only be avoided with the construction of much larger, more impactful structures. Thus, in this case, allowing a continuous wall is the least environmentally damaging feasible alternative.

- No project alternative

This alternative is not feasible because erosion of the bluff would continue to threaten the subject blufftop structures at 241 and 249 Pacific Avenue and would likely flank the existing permitted shoreline armoring to the north of the subject site which supports existing residential structures and would also flank the shoreline armoring proposed to protect the homes at 235 and 241 Pacific Avenue.

The Commission's geologist and engineer have reviewed the geotechnical information provided by the applicants and concur that the proposed shoreline armoring is necessary to protect the blufftop structures. Following construction of the proposed seawall and

geogrid structure, the applicants' engineer has demonstrated that the factor of safety for the structures will be increased to an adequate level. Thus, substantial evidence has been provided to document that the proposed seawall and geogrid structure are the least environmentally damaging feasible alternative.

Duration of Armoring Approval

While the Commission is required to approve shoreline armoring to provide protection for the subject bluff top structures, the proposed shoreline armoring fronting the subject sites will impede public access to and along the shoreline, impact beaches and related habitats, and visually impair the coastal area. Thus, it is important to limit the life of the shoreline armoring to that of the structures it is required to protect.

Sections 30235 and 30253 require new development on a bluff top lot to be sited and designed so that it does not require the construction of new shoreline armoring or reliance on existing shoreline armoring. However, when the approval of shoreline armoring is not expressly linked to a particular bluff top structure, shoreline armoring can remain long after the structure it was required to protect has been removed, and therefore may encourage the construction of new structures and additions to existing structures in an unsafe location while continuing to adversely affect resources, including sand supply and recreation. Therefore, Special Condition 2 limits the duration of the subject CDP approval to when the bluff top structures requiring protection (235 Pacific and 241 Pacific) are redeveloped (as defined in Special Condition 3), are no longer present (i.e. demolished), or no longer require the shoreline armoring approved under this CDP, whichever occurs first. Approval of this permit requires all of the applicants to apply for a new CDP or amendment to this CDP to remove the shoreline armoring or to modify the terms of its authorization, if either blufftop structure no longer qualifies for protection. Special Condition 3 requires that redevelopoment of the blufftop properties on the site shall either be sited and designed to be safe without reliance on shoreline armoring to establish geologic stability or protection from hazards or shall not be permitted.

Special Condition 3 defines redevelopment according the requirements of the LUP, 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) 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 applicants 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 applicants 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.

Even when a residence is not being entirely demolished and rebuilt, improvements that increase the economic life of the structure in a hazardous location are inconsistent with the Coastal Act and the certified LUP and can reduce the incentive to move the structure landward to reduce risk and the need for shoreline protection. Significant improvements that extend the life of a non-conforming structure in its current location must be limited to those that would not result in the need for future shoreline protection to be consistent with Chapter 3 policies, particularly improvements to portions of blufftop structures located seaward of the Geologic Setback Line (GSL).

Neither the City nor the Commission is required to approve bluff top development projects even when the proposed alterations remain below the 50% bluff top redevelopment threshold. This is especially critical when proposed improvements to non-conforming structures would increase the degree of non-conformity. If bluff top properties are allowed to increase the degree of non-conformity of bluff top structures by undertaking substantial improvements seaward of the GLS and thus extending the life of the structures indefinitely, eventually the structures will require shoreline protection. As the coastline of Solana Beach continues to become more fortified and sea levels continue to rise, it will be even more likely that the public beach fronting the bluffs will become inaccessible at all but the lowest tides. Therefore, consistent with certified LUP Polices 4.17 and 4.18, Special Condition 3 also requires that additions and major structural alterations to the blufftop properties on the site shall be sited and designed to be safe without reliance on shoreline armoring to establish geologic stability or protection from hazards, or shall not be permitted..

If the permittees intends to keep any portion of the shoreline structure in place beyond the 20 year mitigation period or in the future the permittees seek a coastal development permit to construct additional bluff or shoreline protective devices, Special Condition 6 requires the applicants to include the submittal of sufficient information for the Commission to consider the need and potential alternatives.

Monitoring and Maintenance

Additional conditions of approval ensure that the applicants and the Commission know when repairs or maintenance are required, by requiring the applicants to monitor the condition of the seawall at three-year intervals. The monitoring will ensure that the applicants and the Commission are aware of any damage to or weathering of the seawall and can determine whether repairs or other actions are necessary to maintain the seawall in its approved state. Special Condition 2 requires the applicants to submit a monitoring report that evaluates the condition and performance of the seawall and overall site stability, and to submit recommendations, if any, for necessary maintenance, repair, changes or modifications to the project. Special Condition 2 also requires that the applicants install monitoring pegs or markers at ten foot intervals along the face of the entire seawall at the same elevation of the Mean High Tide Line (MHTL) and at an elevation of five feet above the MHTL to be used to monitor sand levels and to identify times when the MHTL intersects the face of the seawall. The placement of the monitoring

pegs shall be certified by a licensed surveyor. Special Condition 2 also requires that the applicant provide monitoring reports every five years from the date of CDP issuance that evaluate whether the seawall is still required to protect the bluff top structures it was designed to protect. If it is determined that the seawall is no longer needed to protect the blufftop structures, the applicant must submit a CDP application within six months to remove the seawall. In addition, the condition requires the applicants to perform necessary repairs through the coastal development permit process, when required.

Special Condition 1 requires the applicants to submit a final approved site plan that includes the bluff top structures and square footage of all bluff top structures and property lines for the subject sites. In addition, final plans for the project must indicate that the seawall conforms to the bluff contours. The final plans shall also detail the location of any existing accessory improvements on the site. In addition, all runoff from the subject site shall be directed towards the street. Special Condition 5 requires that, prior to issuance of this CDP, the applicants must submit a copy of any required permits from the California State Lands Commission to ensure that no additional requirements are placed on the applicants that could require an amendment to this permit.

To assure the proposed shoreline armoring has been constructed properly, Special Condition 11 requires that, within 30 days of completion of the project, as built-plans and certification by a registered civil engineer be submitted that verifies the proposed seawall has been constructed in accordance with the approved plans. Special Condition 14 requires that during all construction, copies of the signed coastal development permit and approved construction plan shall be maintained on-site and that a construction coordinator be designated. Special Condition 12 acknowledges that the issuance of this permit does not waive any public rights that may exist on the property.

Deed Restriction and Waiver of Liability

Due to the inherent risk of shoreline development, Special Condition 4 requires the applicants to waive liability and indemnify the Commission against damages that might result from the proposed shoreline devices or their construction. The risks of the proposed development include that the proposed shoreline devices will not protect against damage to the blufftop structures from bluff collapse and erosion. In addition, the structure itself may cause damage either to the blufftop structures or to neighboring properties by increasing erosion of the bluffs. Such damage may also result from wave action that damages the seawall. Although as conditioned, the project minimizes these risks, the risks cannot be eliminated entirely. Given that the applicants have chosen to construct the proposed shoreline device despite these risks, the applicants must assume the risks.

To ensure that future buyers of the subject properties receive notice of the CDP and its various restrictions, Special Condition 14 requires the property owners of 235, 241, and 245 Pacific Avenue to record deed restrictions that incorporate a legal description of each affected parcel and all standard and special conditions required by this CDP.

In summary, given the low factor of safety on the subject bluff, the exposed clean sand lens, and the close proximity of the existing structures to the bluff edge, the Commission

finds that the existing primary blufftop structures are in danger from erosion and that the proposed seawall and geogrid structure is necessary to protect the existing bluff top structures (which were originally constructed prior to the Coastal Act's enactment, 235 and 241 Pacific Avenue). Since the proposed seawall will deplete sand supply, occupy public beach and bluff and fix the back of the beach, Special Condition 7 requires the applicants to make a payment to offset this impact. The proposed project is the least environmentally damaging feasible alternative, with no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment. Therefore, the Commission finds that the proposed shoreline armoring, as conditioned, is consistent with Sections 30235 and 30253 of the Coastal Act.

C. PUBLIC ACCESS AND RECREATION

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

> ***30210.*** *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> ***30211.*** *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*
>
> ***30212.*** *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects*
>
> ***30221.*** *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*
>
> ***30223.*** *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

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

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 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.

The City's LUP policies related to public access state:

Policy 4.50: *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 – The City and the CCC have developed a method for calculating a Public Recreation Fee for the City of Solana Beach. To mitigate for

impacts to public access and recreation resulting from loss of beach area, for all development involving construction of a bluff retention device, a Public Access and Recreation Fee shall be collected by the City which shall be deposited in an interest-bearing account designated by the City Manager of Solana Beach in lieu of providing beach area to replace the public access and coastal recreation benefits that would be lost due to the impacts of any proposed protective structure. The method used to determine the appropriate mitigation fee has been approved by the CCC and is contained in LUP Appendix C. The funds shall solely be used to implement projects which augment and enhance public access and coastal recreation along the shoreline, not to fund other public operations, maintenance or planning studies.

Project applicants have the option of proposing a public recreation/access project in lieu of payment of Public Recreation Fees 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.

Section 30235 of the Coastal Act requires that shoreline protection be designed to eliminate or mitigate adverse impacts on local shoreline sand supply. An issue of major concern facing California today is the fast pace of disappearing beaches due to natural processes (i.e. erosion, subsidence and storm events) and anthropogenic factors (coastal development and sand supply interruptions). Seawalls, revetments, and other types of hard armoring have long been used to protect backshore development from erosion and flooding, but future accelerated sea level rise and extreme storm events will heighten the rate of beach loss and potential exposure of the backshore to hazards. Hard armoring already results in unintended ecological and public access consequences, such as loss of biodiversity and ecosystem services and displacement of recreational beach area with protective structures.

Some of the effects of a shoreline protective structure on the beach, such as scour, end effects and modification to the beach profile are temporary or difficult to distinguish from all the other actions that modify the shoreline. Seawalls also have non-quantifiable effects on the character of the shoreline and visual quality. However, some of the effects which a structure may have on natural shoreline processes can be quantified. Three of the effects from a shoreline protective device which can be quantified are: 1) loss of the beach/bluff area on which the structure is located; 2) the long-term loss of beach/bluff which will result when the back beach/bluff location is fixed on an eroding shoreline; and 3) the amount of material that would have been supplied to the beach if the back beach or bluff were to erode naturally.

Loss of beach material and loss of beach area are two separate concerns. A beach is the result of both sandy material and a physical area between the water and the back beach. Thus, beach area is not simply a factor of the quantity of sandy beach material.

In recent years the Commission has calculated and required separate mitigation for both the direct losses of beach area and the losses of beach sand. The Commission's mitigation approach for sand loss has been relatively straightforward. The sand mitigation fee quantifies lost sand volume and the cost of the replacement sand. The proposed seawall will halt or slow the retreat of the entire bluff face. The bluff consists of a significant amount of compacted sand. As the bluff retreated historically, this sand was contributed to the littoral sand supply to nourish beaches throughout the region. The proposed seawall will halt this contribution to the littoral cell. Based on bluff geometry and the composition of the bluff materials, the applicants estimated that the seawall will prevent approximately 2,170 cubic yards of sand from reaching the littoral cell (based on a bluff erosion rate of 0.4 ft. /yr. and an initial 20 year mitigation period). At estimated sand cost of $13.67 per cubic yard (provided by the applicant, and based on three estimates from local contractors); this sand would have a value of $29,669 (Exhibit 8).

This loss of beach area has impacts on public access and recreation. The project site is located on a public beach that is utilized by local residents and visitors for a variety of recreational activities, such as swimming, jogging, walking, surf fishing, beachcombing and sunbathing. The site is located just north of the Fletcher Cove Beach Park. The beach fronting the subject site is narrow, and at high tides throughout the year it is inundated with water and inaccessible. The proposed seawall will be constructed on the public beach that would otherwise be available for public use and, therefore, will have both immediate and long-term adverse impacts on public access and recreational opportunities.

Public Trust

In addition to the Coastal Act policies that support public access and equal opportunities for recreation, the Commission has the responsibility to protect the public trust and public trust uses.[1] Coastal Act regulations[2] define public trust lands as "all lands subject" to the common law public trust and associated with trust purposes, including recreation. In the common law, the doctrine traditionally protects in-water uses such as fishing and navigation, but has been extended to protect the environment (*Marks v. Whitney* (1971) 6 Cal.3d 251, 259-260), and associated resources that affect trust lands, such as non-navigable tributaries supplying water to a lake (*Nat'l Audubon Soc. v. Super. Ct.* (1983) 33 Cal. 419, 436-437). In some jurisdictions, the doctrine explicitly protects "dry sand"

[1] The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds and manages these lands for the benefit of all people of the State for statewide purposes consistent with the common law Public Trust Doctrine ("public trust"). In coastal areas, the landward location and extent of the State's sovereign fee ownership of these public trust lands are generally defined by reference to the ordinary high water mark (Civil Code, §670), as measured by the mean high tide line (*Borax Consol. v. City of Los Angeles* (1935) 296 U.S. 10); these boundaries remain ambulatory, except where there has been fill or artificial accretion.

[2] Cal. Code of Regs., title 14, § 13577(f).

recreation adjacent to public trust lands (*Matthews v. Bay Head Improvement Assn.* (1984) 95 N.J. 306, 331-332), on the rationale that "reasonable enjoyment" of the shore and sea cannot be realized without some use of the dry sand area (*id.* at p. 325).[3] California recognizes access as a component of public trust resources. A July 2017 report by the Stanford Center for Ocean Solutions explains that agencies "may not undertake or authorize uses of uplands without appropriate safeguards for nearby public trust resources and uses."[4] The State Lands Commission, which administers leases on public trust lands, analyzes the entire area of public trust impacts, including impacts on upland recreation.[5] Thus, use of dry land adjacent to the public trust may not interfere with recreation and other public trust uses.

The concern is complicated by the effects of sea level rise. As sea levels rise, and beaches and bluffs migrate inland, maintaining residential development adjacent to the shoreline will in many cases cause the narrowing and eventual loss of beaches, dunes and other shoreline habitats as well as the loss of offshore recreational areas. This narrowing, often referred to as the "coastal squeeze," can occur when shoreline protection or other fixed development prevents the landward migration of the beach that would have otherwise occurred.

As discussed above, the proposed seawall will take up the public beach, and as a result will impact the ability of the public to recreate on the beach, interfering with public trust uses. A tourist website[6] describes nearby Fletcher Cove Beach as Solana Beach's "main" central beach, nicknamed Pillbox for the historic gunnery installations on the bluff. Activities include surfing, bodyboarding, fishing, swimming, kayaking, and whale watching. The beach has stayed wide enough so far that when the tide is up, passive recreation is still available, including the ability to walk to Tide Beach Park to the north and Del Mar North Beach to the south. Tide Beach Park[7] similarly offers swimming, surfing, and bodyboarding, along with scuba diving, tide pooling, and fishing. At high tide during various points in the year, however, the beach is confined to a cove below the bluffs.

In addition to the loss of recreation and cramping of access, hard armoring can also result in nuisance conditions for neighbors who suffer increased flooding or erosion as a result of nearby seawalls. Other detrimental impacts may include negative visual impacts and interference with ecosystem functions. The effectiveness of hard armoring to protect development will also be reduced as sea level rises and storm intensity and frequencies

[3] In a 2005, the same court affirmed *Matthews* and described access over uplands as "integral to the public trust doctrine." (*Raleigh Ave. Beach Assn. v. Atlantis Beach Club, Inc.* (2005) 185 N.J. 40, 53.)
[4] Center for Ocean Solutions, Stanford Woods Institute for the Environment, The Public Trust Doctrine: A Guiding Principle for Governing California's Coast Under Climate Change (2017), p. 5.
[5] See e.g., Section 3.2.4, Public Trust Impact Analysis, Broad Beach Restoration Project Revised Analysis of Impacts to Public Trust Resources and Values, July 2014, including discussion of long-term impacts on recreational use at pp. 3.2-23 to 26. Available at http://www.slc.ca.gov/Info/Reports/Broad_Beach/3.2_Recreation.pdf.
[6] See https://www.californiabeaches.com/beach/fletcher-cove-beach/.
[7] See https://www.californiabeaches.com/beach/tide-beach-park/.

increase. Relatedly, shoreline armoring costs will increase over time as coastal hazards and storms cause elevated levels of damage and increasing need for repair and maintenance.

Appropriate mitigation for the subject development 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, such that there is not private beach area available for purchase. Therefore, on November 28, 2018, the Commission certified an in-lieu fee method to quantify and then mitigate for recreational losses due to encroachment by a seawall and then long-term beach loss due to fixing the back of the beach in the city of Solana Beach (Ref: LCP-6-SOL-16-0020-1). The City previously had an interim program in place that required applicants proposing shoreline armoring to make a $1,000/linear ft. deposit for shoreline armoring until such time that the aforementioned Public Recreation Fee method was finalized. The Commission has accepted the City of Solana Beach's interim mitigation program for numerous seawall projects (Ref. CDP Nos. 6-02-039-A1/Seascape Chateau, 6-07-134/Brehmer, Matchinske, & Caccavo, 6-03-33-A5/Surfsong, 6-08-73/Cummings & DiNoto, et. al., 6-08-122/Winkler, 6-09-033/Garber et. al., 6-13-025/Koman et al., 6-13-0437/Presnell & Graves, 6-13-0948/Bannasch, and 6-16-0281/Winkler & Lucker). Each of these recent coastal development permits for seawalls were also conditioned to require the applicants to apply for an amendment to their coastal development permit within six months of the Commission's certification of the City's economic study in order to reassess the in-lieu mitigation fee.

The Public Recreation Fee method is included in the City's certified Land Use Plan (LUP). LUP Policy 4.50 requires applicants to pay a mitigation fee for public access and recreation impacts caused by bluff retention devices, consistent with the mitigation method detailed in Appendix C of the LUP (Exhibit 14). Appendix C summarizes the proposed public recreation mitigation method, and includes a fee schedule to determine the required Public Recreation Fee to mitigate for impacts to public beach access and recreation that are expected to result from the construction of a coastal structure or non-erodible seacave/notch infill over a 20 year mitigation period.

The City's public recreation mitigation method was derived using certain economic concepts that primarily depend on 1) choice of a proxy, or 'stand-in', for recreational value of the beach per visitor per day (also called the beach day use value), 2) estimated numbers of beach visitors annually, and 3) the area of beach impacted by shoreline armoring. The day use value was estimated using surveys that assessed the amount of time visitors spent traveling to get to and from the beach and the estimated cost of travel (including time value based on income). The seasonal beach day use value per person per day for Solana Beach is $35.56 (2016 dollars) in the summer and $21.00 (2016 dollars) in the winter. This number was then multiplied by the estimated total number of adult visitors to the beach per year to derive the annual recreational value of the entire beach. The value of the City's Junior Lifeguard Program was then added to obtain the total estimated beach recreation value. Thus, the key variables that are used to calculate the Solana Beach annual recreational value are day use value and attendance:

Annual Recreational Value ($/yr) = Day Use Value ($/person) x attendance (people/yr) + Jr. Lifeguard Program ($)

Because the Public Recreation Fee method uses annual recreation value to determine the loss in recreational value associated with loss of beach area, another key variable for the Public Recreation Fee calculations is the size of the beach. Thus, the method divides its proxy for the annual recreational value by the size of the beach to get a dollar value per square foot of beach area. This metric allows valuation per square foot of beach lost due to a coastal structure or non-erodible seacave/notch infill.

Annual Recreational Value per sq ft ($/yr per sq ft) = Annual Recreational Value ($/yr) / Area of Solana Beach (sq ft)

The Public Recreation Fee is then applied in roughly the same manner as the Commission has done in the past, in that the mitigation calculation is based on the direct encroachment by the bluff retention device (Encroachment loss) and beach area that would have formed due to passive erosion over a 20 year mitigation period (Passive erosion loss). The City's Public Recreation Fee method also requires that the area of existing notches or seacaves located landward of a proposed seawall be included as a part of the encroachment area.

Public Recreation Fee ($/20 years) = Encroachment loss ($) + Passive erosion loss ($)

Appendix C of the LUP includes the following public recreation impact mitigation fee schedule:

Table 1 - Public Recreation Impact Mitigation Fee Schedule

Permit Year	Initial Area Rate (Per SF)	Bluff Retreat Rate (Per LF)
2016	$121	$600
2017	$124	$630
2018	$126	$662
2019	$129	$698
2020	$131	$737
2021	$134	$780
2022	$136	$825
2023	$139	$874
2024	$142	$926
2025	$145	$982
2026	$148	$1,044

The Initial Area Rate in Table 1 represents the use value of one sq. ft. of beach area over a 20-year period and this use value is multiplied by the total area of encroachment of a Bluff Retention Device (Initial Area) to determine the fee. The use value is increased

each year to reflect an estimated 2% Consumer Price Index (CPI). The use value is also subject to a 2% Present Value (PV), which offsets the CPI over the 20 year mitigation period.

The Bluff Retreat Rate (Per Linear Ft.) in Table 1 is equal to one linear ft. (Bluff Retreat Length) multiplied by 20 years of estimated erosion multiplied by the use value of one sq. ft. of beach. It represents the use value of the expected beach area that would otherwise be available for public use through passive erosion if the Bluff Retention Device was not constructed. An erosion rate of 0.4 ft. per year is assumed between 2016 and 2025 and an erosion rate of 0.673 is assumed between the years 2026 and 2046. The use value increases each year to reflect an estimated 2% CPI.

The length of the proposed seawall is 150 feet and the width of the proposed seawall is 2.33 feet. As identified in the table above, for permit year 2019, the Initial Area Rate is $129/sq. ft. and the Bluff Retreat Rate is $698/sq. ft. The following calculations are used to determine the Public Recreation Fee for the proposed seawall:

Initial Area (Seawall) = 150 ft. x 2.3 ft. = 349.5 sq. ft.
Initial Area Rate = 349.5 sq. ft. x $129 = $45,086
Bluff Retreat Rate = 150 ft. X $698 = $104,700
Public Recreation Fee = $45,086 + $104,700 = $149,786

In this case, a previous property owner at 241 Pacific Avenue already paid $22,000 into the City's interim mitigation program pursuant to the City's approval of the caisson and grade beam upper bluff retention system (Ref: City of Solana Beach CUP 17-07-15). The City determined that the 50 ft. long retention system and the two eight ft. lateral returns were subject to the $1,000 per linear ft. mitigation deposit, resulting in a total assessed mitigation deposit of $66,000. However, the City only required that 1/3 of the deposit be paid at the time of permit issuance and conditioned that the remainder of the fee would be paid annually until the year 2081. The property owner made the initial payment of $22,000, but did not make any of the subsequent annual payments. The amount paid into the interim fee program can be deducted from the total calculated Public Recreation Fee ($149,786 - $22,000) for a total fee of $127,786 (Exhibit 9).

Special Condition 7 requires the applicants to provide evidence, in a form and content acceptable to the Executive Director, that a fee of $127,786 has been deposited in a Shoreline Account established by the City of Solana Beach, in-lieu of providing new beach area to replace the beach are that will be lost due to the impacts of the seawall for the an 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.

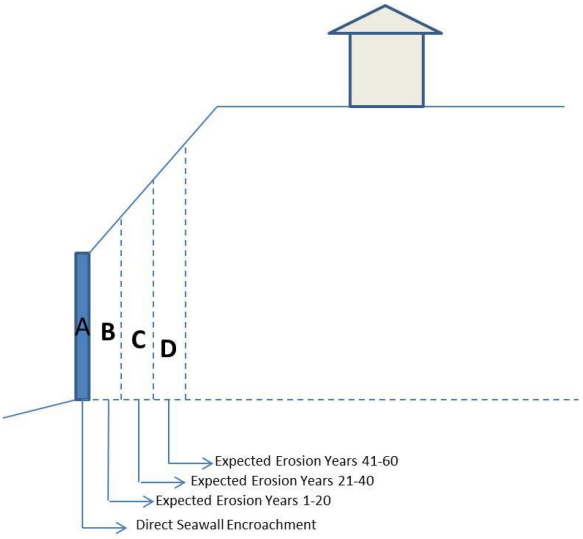
The City's Public Recreation Fee program would typically require that the fee for any seacave or notch at the base of the bluff also be paid prior to issuance of the Coastal Development Permit. However, in this case, the sand level is too high to safely investigate the extent of any seacave or notch at the site, without the use of mechanized

digging equipment. Therefore, Special Condition 7 also requires that within 30 days of the start of construction, the applicants submit documentation of the area of any notch or seacave at the base of the bluff (i.e., the depth and width between the rear of the notch or seacave and the bluff drip line) to the Commission and to the City and submit an additional an additional in-lieu Public Access Fee to the City for the area based on the City's Public Access Fee method.

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 Capital Improvement Projects (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.

Prior to the completion of the initial 20 year period, the applicant is required to submit an amendment application to the Commission to either remove or modify the permitted shoreline armoring or to provide a geotechnical reports with evidence that the shoreline armoring must be retained and to provide mitigation for the subsequent 20 year period. As shown in Figure 1 (which is part included in Appendix C of the LUP), in subsequent mitigation periods, mitigation shall include the direct shoreline protection device encroachment and all beach area that would have otherwise been available to the public through passive erosion had the shoreline armoring not been constructed.

Figure 1



Mitigation Period	Mitigation Area
1st Mitigation Period (Pay in Year 1)	A + B
2nd Mitigation Period (Pay in Year 21)	A + B + C
3rd Mitigation Period (Pay in Year 41)	A + B + C + D

Additionally, the proposed project directly encroaches on public property. Special Condition 10 requires that, prior to commencement of construction; the applicants must execute an Encroachment Agreement approved by the City (consistent with Policy 4.48 of the City's approved LUP). Pursuant to the encroachment agreement, the applicant shall recognize that the proposed seawall is located on City property and that the City may require that the seawall be removed at any time. If the City requires removal, the permittees shall submit an amendment to this CDP within 90 days proposing removal of the encroachment in its entirety, and may only remove the encroachment after the Commission issues the CDP amendment.

The use of the beach or public parking areas for staging of construction materials and equipment can also impact the public's ability to gain access to the beach. Special Condition 8 requires that the applicants submit a construction staging and material storage plan for the subject development. Special Condition 8 prohibits the applicants from storing vehicles on the beach overnight, using any public parking spaces at the Fletcher Cove Parking Lot overnight for staging and storage of equipment, and prohibits washing or cleaning construction equipment on the beach or in the parking lot. The special condition also prohibits construction on the sandy beach during weekends and holidays and between Memorial Day to Labor Day of any year.

In summary, while the proposed shoreline construction will reduce available public beach area and sand supply, the project has been designed and conditioned to minimize these impacts to the public beach. Therefore, as conditioned, the proposed development can be found to be consistent with the public access and recreation policies and Section 30235 of the Coastal Act and the City's certified LUP.

D. ENVIRONMENTALLY SENSITIVE HABITAT/WATER QUALITY

The following Chapter 3 policies of the Coastal Act are most applicable to this development:

Section 30230 of the Coastal Act states:

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

Section 30240 of the Coastal Act states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

(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.

The following policies of the City of Solana Beach certified Land Use Plan protect environmentally sensitive habitats:

Policy 3.8: *ESHA shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.*

Policy 3.22: *Development adjacent to ESHAs shall minimize impacts to habitat values or sensitive species to the maximum extent feasible...*

The following policies of the City of Solana Beach certified Land Use Plan protect coastal water quality:

Policy 3.84: *New development shall not result in the degradation of the water quality of groundwater basins or coastal surface waters including the ocean, coastal streams, or wetlands. Urban runoff pollutants shall not be discharged or deposited such that they adversely impact groundwater, the ocean, coastal streams, or wetlands, consistent with the requirements of the RWQCB's municipal stormwater permit and the California Ocean Plan.*

Policy 3.85: *Development must be designed to avoid or minimize to the maximum extent feasible, the introduction of pollutants of concern into coastal waters. To meet the requirement to minimize "pollutants of concern," new development shall incorporate a BMP or a combination of BMPs best suited to reduce pollutant loading to the maximum extent feasible.*

A negligible amount of native flora currently exists on the face of the bluff where the seawall and geogrid structure are proposed to be installed. However, the wall will be located on the sandy beach. Sandy beach ecosystems are unique--their intrinsic biota and ecological functions are not provided by any other coastal ecosystem. Sandy beaches are comprised of three different biological zones: the supra-littoral zone, the mid-littoral zone, and the surf zone, each of which provides critical habitat, food and/or breeding grounds for many species. These zones provide functions that include buffering and absorption of wave energy by stored sand, filtration of large volumes of seawater, extensive detrital and wrack processing and nutrient recycling, and the provision of critical habitat and resources for declining and endangered wildlife, such as shorebirds and pinnipeds.

The effects of shoreline armoring on sandy beach ecosystems are increasingly recognized, though difficult to quantify. Armoring directly encroaches upon the beach and fixes shoreline position, constraining the possible responses and evolution of beach ecosystems to adjust to changes in sea level and other dynamic coastal processes. This

loss of the scope and ability of beaches to respond to coastal processes results in the reduction of overall width and the elimination of habitat zones and the space needed by biota to adjust to changing swell, tide and beach conditions. As pressure to develop the coast continues, and sea level rise and coastal erosion accelerates, the need to understand the ecological consequences of armoring on coastal ecosystems is increasingly urgent.

Quantitatively assessing effects of armoring on ecological components and functions potentially altered or lost on a given stretch of sandy beach is complex. One option for mitigating ecological impacts of coastal armoring is to use the cost of restoring suitable natural habitat, either at that site or nearby as a proxy for ecological value. A fundamental assumption to the replacement cost method is that the restored ecosystem function is equivalent to the natural function lost and is the least costly way to regain that natural function.[8,9] The replacement cost approach relies on determining proportional and appropriate ecological restoration for identifying equitable mitigation and thus requires a robust set of suitable restoration projects to draw upon for valuation.

However, a replacement cost approach is only one alternative to delving into the array of methods for identifying, replicating, and monitoring lost ecological components of a specific stretch of beach and still requires further study before a mitigation methodology can be devised and implicated. Thus, the Commission finds that the full ecological impacts of shoreline armoring on beach habitat may not be fully identified, or mitigated at this time. Research continues and staff anticipates this issue will be resolved in the future. The Commission finds that it is not feasible at this time mitigate for the loss of the biological productivity of a given stretch of beach.

Special Condition 8 requires that during the construction of the project, the permittee may not store any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. Additionally, to further assure that the subject development will not result in the pollution of the ocean waters, Special Condition 9 requires the applicants to submit a Best Management Practices Plan that incorporates structural and nonstructural Best Management Practices (BMPs), for Executive Director approval, for the construction of the proposed seawall. Construction methods must be devised to assure that shotcrete material does not mix with or pollute ocean waters. With appropriate BMPs, the potential for this polluted material from the site making its way into the ocean will be eliminated. Therefore, as conditioned, the Commission finds the proposed development consistent with the marine and water quality protection policies of the Coastal Act.

As conditioned, the Commission finds that the proposed project, as conditioned, will ensure that all environmental impacts will be minimized to the maximum extent feasible.

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[8] US National Research Council. 2005. *Valuing Ecosystem Services: Toward Better Environmental Decision- Making.* The National Academies Press. Washington, DC. http://www.nap.edu/catalog/11139.html

[9] Bockstael, N.E., A.M. Freeman, R.J. Kopp, *et al*. 2000. On measuring economic values for nature. *Environ. Sci.Technol.* 34: 1384–1389.

Therefore, the proposed project can be found consistent with resource protection policies of the Coastal Act and the City's certified LUP.

E. VISUAL RESOURCES/ALTERATION OF NATURAL LANDFORMS

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 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, provides 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.

Policy 4.55*: To achieve a well maintained, aesthetically pleasing, and safer shoreline, coordination among property owners regarding maintenance and repair of all bluff retention devices is strongly encouraged. This may also result in cost savings through the realization of economies of scale to achieve these goals by coordination through an assessing entity. All bluff retention devices existing as of the date of certification of the LCP, to the extent they do not conform to the requirements of the LCP, shall be deemed non-conforming. A bluff property owner may elect to conform his/her/its bluff property or bluff retention device to the LCP at any time if the City finds that an existing bluff retention device that is required to protect existing principal structures in danger from erosion is structurally unsound, is unsafe, or is materially jeopardizing contiguous private or public principal structures for which there is no other adequate and feasible solution, then the City may require reconstruction of the bluff retention device.*

Much of the bluff along the Solana Beach coastline has been armored at its base, primarily by seawalls, all of which substantially alter the appearance of the bluffs, particularly those that have not been camouflaged to replicate the of a natural bluff face. However, the technology in design of seawalls has improved dramatically over the last two decades. Seawalls now typically involve sculpted and colored concrete that upon completion closely mimic the natural surface of the lower bluff face. As proposed, the seawall will match the appearance of the adjacent walls to the north and south, which were designed to conform as closely as possible to the natural contours of the bluff using color and textured concrete. The visual treatment proposed is similar to the visual treatment approved by the Commission in recent years for shoreline devices along the Solana Beach shoreline.

Although much of the Solana Beach shoreline does contain seawalls at the base of the bluff, the natural, largely unaltered, face of the bluff that extends along the approximately 1 ½ mile long shoreline in Solana Beach provides an important visual amenity to residents and coastal visitors alike. The Commission has previously approved several geogrid structures along the Solana Beach shoreline. However, the results of the majority of the installed geogrid structures are *"…near-barren, featureless slopes which have little in common with the visual appearance of pre-failure coastal bluffs."* (Ref. Letter from Soil Engineering Construction, Inc., dated October 14, 2009). In the Commission's most recent geogrid structure approval in Solana Beach, at 341-355 Pacific Avenue, it required that the geogrid reinforced slope reconstruction be constructed to mimic the natural undulating bluff landforms in the vicinity to the maximum extent feasible. Although, the reconstructed slope at this site still pales in comparison to an unaltered bluff face, it resulted in a more natural appearance than previous geogrid bluff structures. Therefore, Special Condition 1 requires that revised plans be submitted such that the geogrid structure will be constructed to include variable thicknesses to provide visual undulations that mimic the nearby natural bluff conditions. At a minimum, the geogrid structure shall include 5 non-evenly spaced, tapered, undulating drainage features, with non-linear

edges, that are approximately 2 feet deep and approximately 5 feet wide. The applicant has also proposed to install hydroseed and container plantings on the proposed geogrid structure.

The existing failing gunite on the bluff face fronting 235 Pacific Avenue adversely impacts the visual quality of the bluff and may also pose a safety risk for beach goers as large pieces of concrete continue to break off in the future (Exhibit 12). However, the applicants are only proposing to remove approximately 1/3 of the existing gunite, limited to the portions that have already broken off and are isolated on the bluff face. In relation to the need to retain the majority of the existing gunite, the applicants' representative states:

> *"…Retention of the undamaged upper portion of gunite has been recommended to avoid upper bluff erosion due to wind and rain, but it serves no useful purpose in protecting the residential structure from ongoing failure of the coastal bluff."* (The Trettin Company, October 27, 2017 memo).

The applicants' representative further asserts that they believe the unbroken section of gunite near the top of the bluff provides better protection against future top of bluff erosion than would exist if the gunite were removed. In addition, the representative further contends that the gunite may be covering some form of bonded/grouted material used to fill a void in the bluff and that removal of the gunite may destabilize this material. However, the applicants have not provided any evidence to support the argument that removal of the entirely of the gunite would destabilize the bluff. The Commission's senior coastal engineer and geologist believe that the gunite likely can be safely removed, and this would be visually preferable to retention of the gunite, even as colored. Therefore, Special Condition 1 requires that the applicants remove the entirety of the existing gunite on the bluff face fronting 235 Pacific Avenue and requires that a licensed civil or geotechnical engineer shall be onsite at all times that the gunite is being removed. If during removal, the onsite engineer identifies any safety or bluff stability concerns, the Executive Director of the Commission may allow for retention of some of the gunite without returning to the Commission for an amendment to this permit. If any gunite is retained, it shall be colored to match the adjacent natural bluff.

In addition, Special Condition 2 requires the applicant to monitor and maintain the proposed shoreline armoring in its approved state. Thus, the proposed seawall and geogrid structure will be maintained so as to effectively mitigate its visual prominence.

Therefore, as conditioned, the Commission finds that potential visual impacts associated with the proposed development have been reduced to the maximum extent feasible and the proposed development will include measures to prevent impacts that would significantly degrade the adjacent park and recreation area. Thus, the project is consistent with Sections 30240 and 30251 of the Coastal Act and the City's certified LUP.

F. LOCAL COASTAL PLANNING

Section 30604(a) also 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 City's Local Coastal Program Land Use Plan was effectively certified in June 2013. However, the City has not yet developed implementing ordinances; thus, a complete LCP has not yet been certified.

The location of the proposed shoreline armoring is designated for Open Space Recreation in the City of Solana Beach LUP and General Plan. As conditioned, the subject development is consistent with these requirements. Site-specific geotechnical evidence has been submitted indicating that the existing principal structures at the top of the bluff are in danger. 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 coastal resources will be mitigated.

Thus, 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. These issues of shoreline planning will need to continue to be addressed in a comprehensive manner in the future through the City's LCP certification process

G. CALIFORNIA ENVIRONMENTAL QUALITY ACT

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 City of Solana Beach found that the proposed development was exempt pursuant to CEQA Guidelines sections 15269(b)(c) [prevention of emergencies]. 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).

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

- City of Solana Beach Certified LUP
- California Coastal Commission Sea Level Rise Policy Guidance Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits, Adopted August 12, 2015
- DRAFT California Coastal Commission Residential Adaption Policy Guidance Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs, Revised March 2018
- Site Plans titled 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by Soil Engineering Construction, Inc., received August 22, 2018
- Landscape Improvement Plans for 235-245 Pacific Avenue, Solana Beach, CA 92075 Emergency Repairs to Coastal Bluff, by George Mercer Associates Inc., received April 17, 2018
- Response to 3rd Party Review, by Soil Engineering Construction, Inc. dated April 16, 2008
- Coastal Bluff Evaluation and Basis of Design Report 235-249 Pacific Avenue, Solana Beach, California, by TerraCosta Consulting Group, dated November 4, 2010
- Coastal Hazard Discussion for Proposed Shore Protection 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated November 6, 2017
- Response to 3rd Party Review by Geopacifica Dated October 16, 2017, 2018 Repairs to Coastal Bluff – Shoreline Stabilization 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated November 24, 2017
- Response to 3rd Party Review by Geopacifica Dated February 26, 2018 Repairs to Coastal Bluff – Shoreline Stabilization 245, 241, 245 Pacific Avenue, Solana Beach, by Soil Engineering Construction, Inc., dated February 28, 2018
- Response to California Coastal Commission (CCC) May 16, 2018 Letter Concerning CDP #6-18-0288, Proposed Shore Protection 245, 241, 245 Pacific Avenue, Solana Beach, by Geo Soils, Inc., dated June 15, 2018
- Additional Slope Stability Analyses Justification for Bluff Stabilization Measures 235-245 Pacific Avenue, Solana Beach, California, by Soil Engineering Construction, Inc., dated January 3, 2019
- Resolution 2018-039, City of Solana Beach
- CDP Nos:
    - 6-96-021/Ratkowski
    - 6-89-029/Haggerty
    - 6-99-100/ Presnell et al.
    - 6-00-036/ Corn & Scism
    - 6-00-138/Greenbberg & Kinzel
    - 6-02-002/Gregg & Santina
    - 6-02-039/Seascape Chateau
    - 6-02-039-A1/Seascape Chateau

- 6-02-084/Scism
- 6-03-126/Corn& Hajjar
- 6-07-132/Hawkins
- 6-07-134/Brehmer, Matchinske, & Caccavo
- 6-03-33-A5/Surfsong
- 6-04-083/Cumming & Johnson
- 6-08-68/Hamilton Trust
- 6-08-73/Cummings & DiNoto, et. al.
- 6-08-122/Winkler
- 6-09-033/Garber et. al.
- 6-13-025/Koman et al.
- 6-13-0437/Presnell & Graves
- 6-13-0948/Bannasch
- 6-16-0281/Winkler & Lucker
- LCP-6-SOL-16-0020-1

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February 21, 2019

GEOTECHNICAL REVIEW MEMORANDUM

To: Eric Stevens, Coastal Program Analyst

From: Joseph Street, Staff Geologist
Lesley Ewing, Senior Coastal Engineer

Re: 235, 241 and 245 Pacific Ave., Solana Beach (DeSimone, Schrager and Jokipi Residences), Coastal Development Permit No. 6-18-0288

Summary

Based on our review of the applicants' geotechnical reports and other relevant information, we conclude that the principal structures at 235 and 241 Pacific Ave., and the seaward portion of the house at 245 Pacific Ave., are, or soon will be, in imminent danger from on-going bluff erosion and slope failures, and that shoreline protection and/or bluff stabilization measures are warranted. Furthermore, we agree with the additional analysis demonstrating that bluff failures originating on the 245 Pacific Ave. property could threaten existing structures on the neighboring properties at 241 and 249 Pacific. A project alternative which does not include the proposed lower bluff seawall and geogrid structure at 245 Pacific Ave. would eventually require the inland extension of shore protection on neighboring properties.

Introduction

In connection with the above-referenced coastal development permit application, we have reviewed the following documents directly related to the subject properties:

1) Soil Engineering Construction, Inc. (SEC), 2009, "Repairs to Upper Bluff, Hawkins Residence, 241 Pacific Avenue, Solana Beach, California 92075", as-built project plans dated August 23, 2009, signed by R.D. Mahony.
2) TerraCosta Consulting Group, Inc. (TerraCosta), 2010, "Coastal Bluff Evaluation and Basis of Design Report, 235 – 249 Pacific Avenue, Solana Beach, California", report dated November 4, 2010, and signed by D.B. Nevius, B.R. Smillie and W. F. Crampton.
3) TerraCosta, 2012, "Coastal development permit application, Proposed shoreline stabilization, 245-249 Pacific Avenue, Solana Beach, California", letter report dated July 6, 2012 and signed by W.F. Crampton.
4) GeoSoils, Inc., (GeoSoils) 2017a, "Coastal Hazard Discussion for Proposed Shore Protection 235, 241 and 245 Pacific Avenue, Solana Beach, San Diego County, California", dated November 6, 2017, signed by D.W. Skelly.
5) SEC, 2017a, "Emergency Repairs to Coastal Bluff, 235 – 245 Pacific Avenue, Solana Beach, CA 92075", project plans, dated June 30, 2017, signed by R.D. Mahony.
6) SEC, 2017b, "Response to 3rd Party Review by Geopacifica Dated October 16, 2017, Repairs to Coastal Bluff – Shoreline Stabilization, 235, 241, 245 Pacific Avenue, Solana Beach", dated November 24, 2017, signed by J.W. Niven and R.D. Mahony.

7) GeoSoils, 2017b, "Memorandum – Sand Fee Worksheet 235, 241 and 245 Pacific Avenue, Solana Beach", dated November 27, 2017, signed by D.W. Skelly.
8) SEC, 2018a, "Response to 3rd party Review by Geopacifica Dated February 26, 2018, Repairs to Coastal Bluff – Shoreline Stabilization, 235, 241, 245 Pacific Avenue, Solana Beach", dated February 28, 2018, signed by J.W. Niven and R.D. Mahony.
9) SEC, 2018b, "2018 Upper Bluff Retention System/Coastal Bluff Monitoring Report, 241 Pacific Avenue, Solana Beach, California 92075", report dated June 5, 2018, signed by J. Niven and B. Trettin.
10) GeoSoils, 2018, "Response to California Coastal Commission (CCC) May 16, 2018 Letter Concerning CDP #6-18-0288, Proposed Shore Protection 235, 241 and 245 Pacific Avenue, Solana Beach, San Diego County, California", dated June 15, 2018, signed by D.W. Skelly.
11) SEC, 2019, "Additional Slope Stability Analyses – Justification for Bluff Stabilization Measures, 235 – 245 Pacific Avenue, Solana Beach, California", dated January 3, 2019, and signed by J. Niven.

We have also reviewed a previous review memorandum (dated April 22, 2014) prepared by the Commission's retired staff geologist, Dr. Mark Johnsson, in relation to a prior CDP application (#6-13-0437) involving the property at 245 Pacific Ave. In addition, Dr. Street has visited the base of the coastal bluff at this site, most recently on October 10, 2018.

The purpose of this memo is to evaluate the degree of danger from erosion and bluff instability to the principal structures across the three subject properties, and to provide commentary on a possible project alternative that would exclude the construction of the lower bluff seawall and geogrid structure at 245 Pacific Ave.

Geologic Background

TerraCosta (2010) (Ref. 2) provides a description of the geologic conditions and erosional threats to the principal structures at 235 - 245 Pacific Avenue. Typical of the Solana Beach coastline, the coastal bluff at these sites consists of a lower bluff approximately 25 - 30 feet high composed of relatively dense, well-cemented bedrock of the Eocene-aged Torrey Sandstone, overlain by an upper bluff consisting of less consolidated sands and gravels, collectively referred to as marine terrace deposits. The lower ten feet of these deposits are comprised of very well-sorted, unconsolidated, cohesionless sands that form very unstable slopes when exposed in the coastal bluff. Overlying this "clean sand lens" are approximately 50 feet of late Pleistocene-aged sands and gravels, often referred to as the Bay Point Formation or "older paralic deposits."

Cycles of bluff retreat in Solana Beach are typically triggered by wave-driven notching and collapse of the Torrey Sandstone bedrock, followed by the exposure and failure of the much weaker clean sand lens immediately above the bedrock. Once exposed, the clean sand lens is extremely vulnerable to subaerial erosion (e.g., wind & runoff), leading in relatively quick succession to the progressive failure of the overlying terrace deposits. Many structures north and south of the subject sites have required protection from this cycle of bluff failure through the construction of seawalls, usually designed to protect the bluff toe from marine erosion and encapsulate the clean sand lens, and/or upper bluff retention devices.

At the subject site, the applicants have proposed the construction of a 150-foot long, 35-foot high lower bluff seawall and an approximately 45- to 130-foot wide, approximately 50-foot high upper bluff geogrid structure in order to protect against marine erosion and on-going upper bluff instability.

Existing Site Conditions & Danger from Erosion

The need for the proposed bluff protection is justified in the applicants' geotechnical reports by the ongoing nature of upper bluff failures on all three parcels and quantitative slope stability analyses which show low factors of safety for cross sections through all three properties. To varying degrees, each of the three properties has experienced on-going upper bluff erosion and periodic slope failures related to the surface exposure of the mid-bluff clean sand lens. However, as described in greater detail below, the degree of threat to the principal structures is not uniform across the project site.

235 & 241 Pacific Ave.

TerraCosta (2010) (Ref. 2) reports that the 241 Pacific Ave. property, in particular, experienced severe lower bluff erosion during 1997-98 winter storms, which subsequently exposed the clean sand lens and triggered progressive upper bluff failure. In 2008, the Commission approved emergency and regular CDPs for a drilled-pier upper bluff retention system intended to stabilize the upper bluff and protect the existing home at 241 Pacific Ave. However, the Commission recognized at the time of approval that there was a high likelihood that additional protective measures would be needed in the future. The zone of upper bluff failure at 241 Pacific Ave. has subsequently expanded both landward and laterally across the bluff face below both 235 and 245 Pacific Ave. (Refs. 2, 6, 9). SEC (2018b) (Ref. 9) has documented 8 to 12 feet of retreat in the clean sand lens and upper bluff below 241 Pacific over the past decade, and reports that the drilled piers have been exposed to depths of over 20 feet, with visible flanking of the system occurring on either side. The expanding slope failure has also severely undermined and fractured a pre-Coastal Act gunite surface covering a portion of the upper bluff below 235 Pacific Ave. (Ref. 2).

TerraCosta (2010) (Ref. 2) provides the results of a slope stability analysis for a bluff cross-section at 235 Pacific Ave. This analysis, using the Modified Bishop Method, indicates that the bluff at this site may be vulnerable to slope failures originating in the mid-bluff clean sand lens, with a minimum factor of safety of 1.22 under static conditions, and 0.95 under pseudostatic (or seismic) conditions, assuming a ground-shaking intensity of 0.15g. The modeled critical failure surfaces daylight approximately eight feet inland of the bluff edge, and just a few feet seaward of the existing house at 235 Pacific Ave. based on the project plans provided in Ref. 5. The slope stability analysis indicates that the bluff at this site is only marginally stable, and that the next major slope failure could undermine the seaward portion of the existing home.

Slope stability analyses conducted for 241 Pacific Ave. provided by TerraCosta (2010) (Ref. 2) and SEC (2018a) (Ref. 8) report low minimum factors of safety (1.12 static / 0.90 seismic; Ref. 8) along critical surfaces daylighting approximately 20 feet inland of the bluff edge, which, as noted above, had by 2018 retreated to the margins of the existing drilled pier system (Ref. 10). Neither of these analyses included the existing piers and any stability benefits the system may still afford,[1] making it difficult to evaluate the actual stability of the bluff under existing conditions. Nonetheless, the balance of the available evidence, including the low calculated factors of safety, the continued exposure of the clean sand lens, the recent upper bluff failures which have exposed the upper portions of the caissons, the fact that the caissons were originally embedded to an elevation (+40 feet MSL) that is above the elevation of the clean sand lens (Ref. 1), and the observed degree of undercutting at the bluff toe (3 – 4 feet, Ref. 9), indicate that the site remains very vulnerable to erosion and slope failure. Further undercutting or collapse of the lower bluff is likely to occur in the foreseeable future, triggering cycles of upper bluff instability that could undermine the caisson

[1] SEC (2017b) (Ref. 6) states that the caisson system has reached its "maximum design exposure", and that the slope stability analyses "assume that the existing upper bluff retention system … would be undercut in a bluff collapse rendering it useless in protecting the residential structure above."

system and threaten the existing house, which is located less than five feet inland of the bluff edge (Ref. 5).

Based these considerations we concur that the principal structures at 235 and 241 Pacific Ave. are at presently at risk from erosion, and that shoreline protection at these sites is warranted.

245 Pacific Ave.
Similar to the neighboring properties, the bluff at 245 Pacific Ave. has in recent decades experienced lower bluff notching and block failures, exposure of the clean sand lens, and progressive sub-aerial erosion of the upper bluff (Ref. 2). The slope stability analysis provided by TerraCosta (2010) (Ref. 2) indicates a high risk of slope instability, with minimum factors of safety of 0.99 and 0.80 for the static and seismic conditions, respectively. In contrast to the neighboring sites, where the existing houses are located closer to the bluff edge, the house at 245 Pacific Ave. (constructed in 1996) is currently 22 to 28 feet inland of the bluff edge. The critical failure planes with the minimum factors of safety daylight only 7 to 8 feet landward of the bluff edge, indicating that the most likely bluff failure would still leave the new bluff edge some 14 to 21 feet from the principal structure. Thus, the degree of risk to the house at 245 Pacific Ave. may be less than at the neighboring properties. However, we also note that the calculated factors of safety remain very low (1.06 static/0.83 seismic) along a modeled failure plane daylighting approximately 20 feet inland of the bluff edge (Ref. 2), suggesting that the bluff at the seaward edge of the house remains vulnerable to a large slope failure event, with a factor of safety well below the 1.2 (static) threshold often used by the Commission in assessing slope stability hazards. TerraCosta (2012) (Ref. 3) reports that the failure plane corresponding to a 1.2 factor of safety daylights approximately 40 feet inland of the bluff edge.

In summary, though the most likely slope failure at this site would not appear to threaten the principal structure at 245 Pacific Ave., we conclude that the seaward portions of the house are presently at risk from a larger slope failure, and that a series of smaller failures could place the seaward edge of the house at risk within the next several years. At this juncture, we do not see any evidence that the more landward portions of the house (greater than 40 feet from the bluff edge) face imminent danger from erosion or slope instability.

Vulnerability of Neighboring Sites to Bluff Failures at 245 Pacific Ave.
At the request of Commission staff, SEC (2019) (Ref. 11) provided an additional slope stability analysis to evaluate the degree to which the stability of the principal structures at 241 and 249 Pacific Ave. would depend on the construction of a lower bluff seawall and bluff retention at 245 Pacific Ave.[2] SEC evaluated slope stability along oblique cross-sections intersecting the base of the bluff at 245 Pacific, and the top of the bluff at 241 and 249 Pacific, respectively. The analysis indicates that there is currently a minimum factor of safety (static) of 1.11 along the 245 - 241 Pacific cross-section, and a minimum factor of safety of 1.16 along the 245 – 249 Pacific cross-section. In both cases, the critical failure planes daylight inland of the seaward edge of the existing structures. SEC concludes that a "bluff failure through the clean sand lense at 245 will cause a significant adverse impact to the residential structures at 241 & 249 Pacific." Based on the provided analysis, we agree that, absent other remedial measures, constructing the seawall and geogrid structures only at 235 –

[2] Per the special conditions of CDP #6-96-021, the house at 245 Pacific Ave. is not entitled to construct any upper or lower bluff stabilization devices to protect the portion of the residence located seaward of the 40 ft. blufftop setback, and the construction of a seawall across the unprotected "gap" at this property would only be allowable if (a) it is necessary to alleviate an imminent threat to structures on the neighboring properties, and (b) if the seawall were the least damaging feasible alternative.

241 Pacific Ave. and leaving an unprotected "gap" in the shoreline armoring at 245 Pacific would leave the structures on the neighboring properties vulnerable to bluff failure.

Alternative to Shore Protection at 245 Pacific Ave.
One alternative to the proposed seawall and geogrid structure, which would cross all three of the subject properties, would be to provide armoring for only 235 and 241 Pacific Ave., leaving an approximately 50-foot wide gap in the shore protection along the 245 Pacific Ave property. Such a gap is easier to address at the time that the adjacent structures are being constructed, but it is not necessary that the gap always be part of the armoring design. The following discussion about ways to maintain protection for the properties on either side of the gap, while allowing the gap to erode, is general in nature and should not be the basis for design decisions. The actual measures to maintain the gap while protecting the adjacent properties would be designed to address the circumstances that occur at the site.

While the gap appears to be a linear opening in a line of armoring, the opening will eventually become a three-dimensional space as the shoreline at the gap segment continues to retreat inland in response to marine erosion. The lower bluff will erode inland of the up- and down-coast seawalls, and eventually some form of protection to prevent scour and erosion of the material behind the seawalls will be needed. This protection would most likely consist of a vertical seawall that would be perpendicular to the main wall and that could be extended overtime to address further inland retreat.

The proposed lower bluff shore protection will go up to about elevation +35' NAVD, and should be high enough to encompass the exposed clean sand lens. It is likely that the protection within the gap would likewise be high enough to enclose the clean sands. This protection of the clean sand layer should help minimize retreat of the upper bluff material, but it is not likely to prevent all upper bluff retreat. Eventually the protective side walls within the gap would likely need to extend higher to protect the upper bluff material or other measures might be needed, such as plugs of erodible concrete.

Conclusion
In summary, we concur with the applicants' analysis that the principal structures at 235 and 241 Pacific Ave. are in danger from bluff erosion and slope failure, and that shoreline protection and bluff stabilization measures are necessary. We also conclude that the seaward portion of the house at 245 Pacific Ave. is in danger from erosion and slope failure. The additional analysis provided by SEC (2019) (Ref. 11) demonstrates that structures at 241 and 249 Pacific Ave. are at risk from bluff failures originating on the slope at 245 Pacific. As a result, a project alternative which does not include the proposed lower bluff seawall and geogrid structure at 245 Pacific Ave. would eventually require the inland extension of shore protection on neighboring properties.

Please do not hesitate to contact us with any further questions.

Sincerely,


Signature

Joseph Street, Ph.D., PG
Staff Geologist


Signature

Lesley Ewing, Ph.D., PE, F.CE
Senior Coastal Engineer

Stevens, Eric@Coastal

From: Street, Joseph@Coastal
Sent: Wednesday, May 15, 2019 3:14 PM
To: Stevens, Eric@Coastal
Subject: DeSimone et al reconsideration

Follow Up Flag: Follow up
Flag Status: Completed

Eric,

At your request, I have revisited the available geological reports and slope stability analyses for the properties at 235, 241, 245, and 249 Pacific, Solana Beach. I don't see any new information that would lead me to disagree with Mark Johnsson's previous conclusions about the 245 property, from the Presnell/Graves (6-13-0437) geologic review memo, from 2014. No major bluff edge retreat has been documented for this property over the last five years, and it is notable that SEC did not see a need to change or redo the previous TerraCosta slope stability analysis for this property. In other words, the "input" conditions for the slope stability analysis are basically the same.

Vulnerability to slope failure is a matter of degree, of course; the FoS of 1.21/0.93 indicates only marginal stability. I don't think one can rule out the possibility that a single large failure could affect portions of house at 245 Pacific, possibly even those portions greater than 40 feet inland of the bluff edge. But I do agree with Mark that the likelihood of this is relatively low, and with his assessment of the TerraCosta slope stability analysis. A relatively small failure (7-8 feet of bluff edge retreat) is most likely; larger failures are still possible, but increasingly less likely with increasing size.

I think it is also worth pointing out that risk to the structure at 245 Pacific would increase with each successive failure. Just one or two of the smaller, more likely failure events could amplify the risk to the house, including the landward portions (>40 ft from edge), to the point that we would conclude it is in imminent danger. The timing of such failures is, of course, unpredictable, but they could occur in short order, for example, next winter during a high wave and/or high precipitation event.

Best,
Joe

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22 April 2014

GEOTECHNICAL REVIEW MEMORANDUM

To: Eric Stevens, Coastal Program Analyst
From: Mark Johnsson, Staff Geologist
Re: Presnell/Graves LLC Application (6-13-0437)

In connection with the above-referenced permit application, I have reviewed the following documents:

1) TerraCosta Consulting Group, 2012, "Coastal bluff evaluation and geotechnical basis of design report, 245-249 Pacific Avenue, Solana Beach, California", 22 p. geotechnical report dated 6 January 2012 and signed by D. B. Nevius (GE 2789), B. R. Smillie (CEG 207) and W. F. Crampton (GE 245).

2) TerraCosta Consulting Group, 2012, "Coastal development permit application, Proposed shoreline stabilization, 245-249 Pacific Avenue, Solana Beach, California", 3 p. letter report dated 6 July 2012 and signed by W. F. Crampton (GE 245).

3) TerraCosta Consulting Group, 2012, "Response to review comments, Proposed shoreline stabilization, 245-249 Pacific Avenue, Solana Beach, California", 6 p. letter report dated 19 October 2012 and signed by W. F. Crampton (GE 245).

4) TerraCosta Consulting Group, 2013, "Coastal Development Permit Application, Proposed shoreline stabilization, 249 Pacific Avenue, Solana Beach, California", 4 p. letter report dated 14 June 2013 and signed by W. F. Crampton (GE 245).

5) TerraCosta Consulting Group, 2013, "Response to Coastal Commission staff comments, Proposed shoreline stabilization, 249 Pacific Avenue, Solana Beach, California", 6 p. letter report dated 20 August 2013 and signed by W. F. Crampton (GE 245).

In addition, I have visited the site on several occasions, most recently on 28 February 2014. I also have had numerous conversations with the principal project consultant, Mr. Walt Crampton, regarding site conditions and the proposed project.

Reference (1) provides a description of the site conditions and proposed solutions to the perceived erosional threats to the principal structures at 245 and 249 Pacific Avenue, Solana Beach. Like all of the Solana Beach coastline, the coastal bluff at the site consists of a lower bluff approximately 30 feet high composed of relatively dense bedrock of the Torrey Sandstone, overlain by an upper bluff consisting of less consolidated sands and gravels, collectively referred to as marine terrace deposits. The lower ten feet of these deposits are very well sorted, unconsolidated sands that form very unstable slopes when exposed in the coastal bluff. Overlying this "clean sand lens" is approximately 50 feet of sands and gravels, previously referred to as the Baypoint Formation (now general referred to as "older paralic deposits.") The report documents ongoing slope failures in the upper bluff that have exposed the clean sand lens.

These failures result in landslide and erosion scarps that encroach toward the structures on the bluff top. Such failures, often triggered by collapse of the more resistant Torrey Sandstone, are the dominant failure mode for the coastal bluffs in Solana Beach. Numerous properties north and south of the subject site have been protected from such failures by the construction of approximately 35-foot high seawalls which serve to protect the lower bluff from marine erosion, support the Torrey Sandstone by tiebacks, and encapsulate the clean sand lens. The report proposes a similar solution at the subject site. The need for this protection is justified in the report by the ongoing nature of upper bluff failures on both parcels (as well as the one to the south, at 241 Pacific Avenue), and quantitative slope stability analyses which show very low factors of safety (approximately 1.0) for cross sections through both properties. However, the most likely failure planes showing such low factors of safety daylight only 7 to 8 feet landward of the bluff edge. I concur with the soil strength parameters and methodology used in these analyses. The structures both are located approximately 22 to 27 feet from the bluff edge. Accordingly, the most likely failure would still leave the new bluff edge some 14 to 19 feet from the structures.

Reference (2) supports the CDP application for a seawall extending across both parcels at 245 and 249 Pacific Avenue. It documents erosion of the upper bluff from 2010 to 2012. It notes that the northern portion of the parcel at 249 Pacific Avenue is protected by a previously permitted and constructed seawall, but that the southern half of the property, and all of the bluff at 245 Pacific Avenue, is subject to ongoing erosion. Further slope stability analyses show that the location of the structures have factors of safety of approximately 1.1. Again, I note that a failure extending 22-27 feet back from the bluff edge is not the most likely failure surface on either parcel. The report provides additional slope analyses demonstrating, to my satisfaction, that a factor of safety of 1.2 exists 40 feet from the current bluff edge. The report opines that such a low factor of safety indicates that a seawall or other shoreline protective structure is justified *for structures landward of the 40 foot setback line.* Further analyses show that, following the most likely failure modeled above (loss of 7-8 feet of bluff top), the factors of safety are correspondingly reduced at both structures. Although the report concludes that such a low factor of safety requires protection from bluff collapse for structures *landward* of the 40 foot setback line, it is my opinion that it will be many years before lower and upper bluff collapses will cumulatively extend 40 feet from the current bluff edge. Thus, I conclude that a shoreline protective device is not warranted at this time to protect the portion of the structure landward of the 40-foot setback line at 245 Pacific Avenue.

Reference (3) was produced to answer Commission Staff questions about the proposed project and the nature of expected bluff retreat at this location. Asked for examples of previous bluff failures that have resulted in 40 feet of bluff retreat under similar geologic conditions, qualitative descriptions of ongoing failures near the site were provided, but it is my opinion that they do not demonstrate any imminent danger to portions of the structure located 40 feet from the bluff edge. Ongoing discussions with the project engineer, Walt Crampton, raised the issue of outflanking of the proposed seawall and increased risk of the home at 249 Pacific Avenue if at least a portion of the proposed seawall extension at 245 Pacific Avenue is not constructed. I agree with this assessment, but cannot provide an estimate of the amount of time before such outflanking would put the structure at 249 Pacific Avenue in danger from erosion.

After consultation with Commission staff, who explained the problems with shoreline protection for 245 Pacific Avenue due to a deed restriction, the CDP application in reference (4) was submitted. Documenting additional failures at 241 Pacific Avenue that have migrated to the north and south, the application is for a seawall extending across the remaining unprotected part of 249 Pacific Avenue, and the northern 25 feet of the bluff at 245 Pacific Avenue. The purpose of the extension onto the bluff below 245 Pacific Avenue would be to delay outflanking of the seawall at 249 Pacific Avenue, ensuring that the structure at 249 Pacific Avenue would remain protected. The report states that "[w]ith over 60 feet of marginally stable terrace deposits atop the cliff-forming Torrey Sandstone, the typical zone of influence affected by flanking would be 50% of this height, or 30+ feet." This formula is not supported by references, and I am not familiar with such a "typical zone of influence." I do agree, however, that extending the seawall 25 feet south of the property line above the bluff fronting 249 Pacific Avenue (a total extension of 49 feet) would protect the threatened bluff-top structure at 249 Pacific Avenue for a greater period of time than extending the seawall only to the southern border of 249 Pacific Avenue. However, in the short term, extending the proposed seawall only 24 feet to the southern border of 249 Pacific Avenue will provide adequate protection from coastal bluff erosion to the threatened bluff top structure at 249 Pacific Avenue. Thus, extending the seawall onto the bluff fronting 245 Pacific Avenue is not required, at this time, to protect the existing structure on 249 Pacific Avenue from erosion. Reference (5) answers some additional questions from Commission staff, but does not add substantially to my analysis above.

To summarize, I concur that the structures at 245 and 249 Pacific Avenue are threatened by coastal erosion. The degree of risk appears to be increasing as upper bluff failures continue. The fact that such failures are continuing leads me to conclude that the risk to the structures is marginally at the level that the Commission adopts when finding that a threat is "imminent" or likely within the next 2 to 3 years. The useful life of the 26 foot-long portion of the existing seawall fronting 249 Pacific Avenue will be increased by being protected from outflanking by the extension proposed on the southern half of the property at 249 Pacific Avenue. Likewise, the useful life will be further increased, as will the proposed seawall, if a further extension is constructed on the northern half of 245 Pacific Avenue. It is not possible to quantify authoritatively the length of time that the useful life would be increased, but, based on my experience in geologically similar areas of Solana Beach, it is my opinion that it would likely be at least 10 years, and perhaps 20 or more years.

I hope that this review is helpful. Please do not hesitate to contact me with any further questions.

Sincerely,

Mark Johnsson, Ph.D., CEG, CHG
Staff Geologist