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Item W15f

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 Stand State

# STAFF REPORT: REGULAR CALENDAR

| APPLICATION NUMBER:  | 5-01-179   |
|----------------------|--|
| APPLICANT:           | Buena Vista Townhomes, LLC   |
| AGENT:               | Frank Montesinos, Architect  |
| PROJECT LOCATION:    | 1105 Buena Vista, San Clemente, Orange County  |
| PROJECT DESCRIPTION: | Demolition of an existing 5-unit apartment complex and<br>construction of a new 4-unit condominium complex with a<br>subterranean parking garage, hardscape and landscaping on a<br>coastal blufftop lot. The project involves grading of approximately<br>796 cubic yards of material for garage excavation and site<br>preparation. The project also involves approval of a Tentative<br>Tract Map for the creation of condominiums. |
| LOCAL APPROVALS:     | City of San Clemente Approval-in-Concept dated May 10, 2001,<br>Tentative Tract Map 16049 and Cultural Heritage Permit 00-77<br>approved by the City of San Clemente City Council on March 21,<br>2001.  |

### SUMMARY OF STAFF RECOMMENDATION:

Staff recommends the Commission **DENY** the proposed development. The subject site is a coastal blufftop lot located between the first public road and the sea in the City of San Clemente. The proposed four-unit condominium complex and subterranean parking garage would violate the Coastal Act provisions requiring the minimization of risks from geologic hazards, the assurance of stability, and the protection of visual resources. Similarly, the proposed development does not conform to the blufftop setback policies contained in the certified LUP, as the new structure encroaches into the required 25-foot minimum structural setback from the bluff edge. The proposed development encroaches approximately 10-15 feet into the required setback area along the southernmost portion of the site. However, the applicant disputes staff's interpretation of "top of bluff" and asserts that the proposed development is sited at least 25 feet from the bluff edge. The primary issue addressed in the staff report is assurance that the proposed development is appropriately set back from the bluff edge to be consistent with the geologic hazard and visual resource policies of the Coastal Act.



### SUBSTANTIVE FILE DOCUMENTS:

City of San Clemente Certified Land Use Plan (LUP); *Geotechnical Investigation Report, Proposed Multi-Family Residence, 1105 Buena Vista, Lot 15, Tract 794, San Clemente, California* prepared by Petra Geotechnical dated March 22, 2001.

Coastal Development Permits: 5-00-424 (Spriggs); 5-00-081 (Cramer); 5-00-034 (McKinley-Bass); 5-99-351 (McMurray); 5-99-231 (Smith); 5-99-204 (Brown)---application withdrawn; 5-98-508 (Desert Cities Properties); 5-98-469 (Ferber); 5-98-300 (Loughnane); 5-98-273-G (McKinley & Bass); 5-98-210 (Nelson); 5-98-178 (McMullen); 5-98-082 (Westberg); 5-98-064 (Barnes); 5-98-020 (Conrad); 5-97-371 (Conrad); 5-97-270 (Noah); 5-97-269 (Noah); 5-97-256 (Noah); 5-97-185 (Schaeffer); 5-97-107 (Spruill); 5-95-121 (Watson); 5-95-069 (Westberg); 5-94-256 (Colony Cove); 5-94-243 (Gilmour), 5-94-213; 5-94-199 (Westberg); 5-93-307 (Ackerly); 5-93-304 (Rosenstein); A5-DPT-93-275 (La Ventana); 5-93-243 (La Ventana); 5-93-143 (Mertz & Erwin); 5-93-254-G (Arnold); 5-93-181 (Driftwood Bluffs); P-3967 (Cypress West); Engineering geologic report by C. Michael Scullin, California titled Engineering Geological Feasibility of Design for a Single Family Residence, Lot 35, Tract 897, 2014 Calle de Los Alamos, San Clemente, California (Project #79149) dated July 22, 1979; Draft Environmental Impact Report Elmore Ranch, 1978, Final Soil Engineering and Engineering Geologic Grading Report P3967; "Mass Movement and Seacliff Retreat along the Southern California Coast" by Antony R. Orme in Bull. Southern California Acad. Sci. 1991; "Greatly Accelerated Man-Induced Coastal Erosion and New Sources of Beach Sand, San Onofre State Park and Camp Pendleton, Northern San Diego County, California" by Gerald G. Kuhn in Shore and Beach. 1980: "High-Quality. Unbiased Data are Urgently Needed on Rates of Coastal Erosion" by Wendell Gayman.

#### LIST OF EXHIBITS:

- 1. Vicinity Map
- 2. Assessor's Parcel Map
- 3. Coastal Access Points Map
- 4. Project Plans
- 5. Cross Sections
- 6. Bluff Edge Delineations on Topographic Survey & Plot Plan
- 7. Memorandum from Mark Johnsson, Staff Geologist

### I. STAFF RECOMMENDATION OF DENIAL:

Staff recommends that the Commission adopt the following resolution. The motion passes only by affirmative vote of a majority of the Commissioners present.

### A. <u>Motion</u>

# *I move that the Commission approve Coastal Development Permit No. 5-01-179 for the development proposed by the applicant.*

### B. <u>Staff Recommendation of Denial</u>

Staff recommends a <u>NO</u> vote. Failure of this motion will result in denial 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.

#### C. <u>Resolution to Deny the Permit</u>

The Commission hereby **DENIES** a coastal development permit for the proposed development on the ground that the development will not conform with the policies of Chapter 3 of the Coastal Act and will 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 would not comply with the California Environmental Quality Act because there are feasible mitigation measures or alternatives that would substantially lessen the significant adverse impacts of the development on the environment.

#### II. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

#### A. PROJECT DESCRIPTION AND LOCATION

#### 1. Project Location

The project site is located at 1105 Buena Vista, a coastal blufftop lot between the first public road and the sea in the City of San Clemente, Orange County (Exhibits 1 and 2). The subject site is currently developed with a five-unit apartment building constructed prior to passage of the Coastal Act. The site is surrounded to the north by a single-family residence, to the south by a public stairway leading to the beach, to the east by the frontage street (Buena Vista) and to the west by an approximately 90 foot high coastal bluff. The bluff slope descends to the Orange County Transportation Authority (OCTA) railroad and sandy beach below.

The coastal bluffs in San Clemente are not subject to direct wave attack because they are separated from the beach by the railroad tracks and right-of-way. The railroad tracks have a rip-rap revetment which protects the tracks from erosion and wave overtopping. Though not subject to direct wave attack, the bluffs are subject to weathering caused by natural factors such as wind and rain, poorly structured bedding, soils conducive to erosion and rodent burrowing. Bluffs may also be subject to erosion from human activities, such as irrigation, improper site drainage and grading.

The nearest vertical coastal access is available directly south of the subject site via a stairway at the El Portal public access point (Exhibit 3). Lateral public access is located seaward of the railroad right-of-way at the beach below the subject site.

#### 2. Project Description

The proposed project involves the demolition of an existing 2-story, 5-unit apartment complex and construction of a new 9,059 square foot, 3-story (2 stories above grade), 4-unit condominium complex with an attached 477 square foot, 2-car garage (at street level), subterranean 4,257 square foot, 9-space parking garage, hardscape improvements and landscaping on a coastal bluff top lot. The project involves grading of approximately 796 cubic yards of material for garage excavation and site preparation. Excavated material will be disposed of at a site outside of the coastal zone. The project also involves approval of a Tentative Tract Map for the creation of condominiums.

The project plans contend that the proposed condominium will be set back in accordance with the 25-foot structural setback specified in the City's certified Land Use Plan (LUP). In addition, the plans show the proposed concrete patio to be sited in accordance with the typically applied 10-foot hardscape setback. Therefore, theoretically, all new development is shown to conform to the minimum setback requirements of the LUP. This reflects a greater setback than was previously applied at this site, as the existing "pre-Coastal" apartment complex is located





approximately 15 feet from the bluff edge at its central point (an area where staff and the applicant agree as to the location of bluff edge) and existing decks extend beyond the bluff edge.

While the plans submitted show all new development to be set back from the bluff edge in accordance with the requirements of the LUP, the bluff edge is improperly depicted on the project plans. As such, the structural and hardscape setbacks are improperly depicted. Whereas the applicant depicts the 88-foot contour as the edge of bluff along the southernmost (downcoast) portion of the site, the Commission's methodology places the bluff edge at approximately the 90-foot contour. Using the 90-foot contour to establish the minimum bluff setback, a portion of the proposed structure encroaches approximately 10 feet into the required 25-foot setback and the proposed concrete patio encroaches approximately 4 feet into the typically applied 10-foot hardscape setback.

As recommended by the geotechnical consultant, the structure will be supported by deep continuous footings. The geotechnical consultant did not recommend a greater setback than currently proposed for either the structure or the patio. Blufftop stability and appropriate setbacks will be discussed further in Section B (Blufftop Stability) and Section C (Scenic Resources) of the current staff report.

The project also involves landscaping. A preliminary landscaping plan has been submitted which demonstrates that landscaping will consist of native shrubs and groundcover in the rear yard area and a mix of native and ornamental plants in the front yard area. Existing vegetation on the bluff slope will remain undisturbed. The plan notes that no permanent, in ground irrigation is to be placed at the bluff side of the lot. However, temporary on-grade drip irrigation is proposed to establish plantings.

#### 3. Prior Commission Actions in Subject Area

Many of the residential structures in the immediate vicinity were constructed prior to passage of the Coastal Act. As such, there are few examples of Commission actions on new residential development along this stretch of Buena Vista. However, as discussed below, there have been several coastal development permits issued for multi-unit projects on blufftop lots north (upcoast) of the subject site and one approved for development south (downcoast) of the project site. There has also been a recent emergency permit application for slope repair at 1203 Buena Vista, two lots upcoast.

#### Projects on Buena Vista

On November 20, 1997, the Commission approved Coastal Development Permit No. 5-97-256 for construction of a 25' high, three-story, 7082 square foot, four-unit apartment building with a 1991 square foot garage at 1511 Buena Vista, upcoast of the subject site. The project also included 798 cubic yards of grading and landscaping. The project conformed to the 25' setback requirement. The Commission imposed special conditions regarding assumption of risk, conformance with geotechnical recommendations, submittal of revised landscaping plans to show use of native plants, removal of temporary structures in the setback area if threatened by bluff erosion and future improvements.

On December 10, 1997, the Commission approved Coastal Development Permits No. 5-97-269 and No. 5-97-270. CDP No. 5-97-269 allowed the construction of a 30-ft. high, three-story, 6906 square foot four-unit apartment building with a 2079 square foot garage with nine parking spaces at 1509 Buena Vista. The project also included 752 cubic yards of grading and landscaping. CDP No. 5-97-270 allowed the construction of a 30-ft. high, three-story, 6672 square foot four unit apartment building with a 2533 square foot garage with nine parking spaces at 1513 Buena Vista. The project also included 807 cubic yards of grading and landscaping. The projects conformed to the 25' setback requirement. On both of these permits, the Commission imposed special conditions regarding assumption of risk, conformance with geotechnical recommendations, submittal of revised landscaping plans to show use of native plants, removal of temporary structures in the setback area if threatened by bluff erosion and future improvements.

On March 12, 2001, the Commission approved 5-00-424 for demolition of an existing duplex and construction of a new 8,920 square foot three-unit apartment complex with partially subterranean parking garage, side yard retaining walls and rear yard patios on a coastal blufftop lot. The project conformed to the stringline setback requirement specified in the LUP. The Commission imposed conditions requiring submittal of final plans showing evidence of conformance with geotechnical recommendations; recordation of an assumption of risk deed restriction; recordation of a no future blufftop protective device deed restriction; recordation of a future improvement deed restriction deed restriction; submittal of a drainage and run-off control plan which demonstrates that rooftop run-off will be taken to the street; and submittal of a final landscaping plan which shows that only drought-tolerant natives will exist in the rear yard area and restricts any in-ground irrigation.

On October 24, 2001, Commission staff received a coastal development permit application for *"water proofing the slope"* at 1203 Buena Vista. The application was followed by an emergency permit application on November 1, 2001. The proposed project involved application of a stucco type mortar and "Theroseal" waterproofing to a recently constructed free-standing rebar and mesh frame adjacent to the bluff face where a portion of the existing gunite wall had failed. The project also included construction of a drainage device at the base of the gunite wall. The project has been completed as originally proposed without benefit of a permit. As such, the water-proofing project is regarded as unpermitted development and the emergency permit request is moot. Staff is continuing to process the application as an after-the-fact development.

### B. BLUFFTOP STABILITY

Blufftop development poses potential adverse impacts to the geologic stability of coastal bluffs, to the preservation of coastal visual resources, and to the stability of residential structures. Blufftop stability has been an issue of historic concern throughout the City of San Clemente. Coastal bluffs in San Clemente are composed of fractured bedding which is subject to block toppling and unconsolidated surface soils which are subject to sloughing, creep, and landsliding. The Commission has traditionally followed a set of setback and stringline policies as a means of limiting the encroachment of development seaward to the bluff edges on unstable bluffs and preventing the need for construction of revetments and other engineered structures to protect development on coastal bluffs, as per Section 30253 of the Coastal Act.

1. Coastal Act and City of San Clemente Certified Land Use Plan (LUP) Policies

Section 30253 of the Coastal Act states:

New development shall:

(I) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30235 of the Coastal Act states, in relevant 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 of San Clemente Certified LUP contains policies limiting new development on coastal bluff faces to public staircases and policies establishing stringlines for purposes of limiting the seaward encroachment of development onto eroding coastal bluffs. Although the standard of review for projects in San Clemente is the Coastal Act, the policies of the Certified LUP are used as guidance. These policies include the following:

#### Policy VII.13:

Development shall be concentrated on level areas (except on ridgelines and hilltops) and hillside roads shall be designed to follow natural contours. Grading, cutting, or filling that will alter landforms (e.g.; bluffs, cliffs, ravines) shall be discouraged except for compelling reasons of public safety. Any landform alteration proposed for reasons of public safety shall be minimized to the maximum extent feasible.

Policy VII.14 states:

Proposed development on blufftop lots shall be set back at least 25 feet from the bluff edge, or set back in accordance with a stringline drawn between the nearest corners of adjacent structures on either side of the development. This minimum setback may be altered to require greater setbacks when required or recommended as a result of a geotechnical review.

#### Policy VII.16 states:

In a developed area where new construction is generally infill, no part of a proposed new structure, including decks, shall be built further onto a beachfront than a line drawn between the nearest adjacent corners of the adjacent structures. Enclosed living space in the new unit shall not extend further seaward than a second line drawn between the most seaward portions of the nearest corner of the enclosed living space of the adjacent structures.

Policy VII.17 of the LUP also limits the type of development allowed on bluff faces. It states:

New permanent structures shall not be permitted on a bluff face, except for engineered staircases or accessways to provide public beach access where no feasible alternative means of public access exists.

Section 30253 of the Coastal Act requires new development to minimize risks and assure geologic stability. The primary issue addressed in the following section is the appropriate siting of the proposed multi-family structure based on geologic hazard concerns and the required setback from the top of bluff. The Commission recognizes that there is a dispute regarding the bluff edge determination and proper blufftop setback at the subject site. The Commission's district staff and staff geologist have identified the bluff edge at approximately the 90' contour along the downcoast portion of the property, whereas the applicant's surveyor and architect have identified the bluff edge to be located at the 88' contour.

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4.4

The Coastal Act does not specify a particular blufftop setback, but instead requires that development be sited so as to *"assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site..."* (Section 30253). The primary issue before the Commission is the appropriateness of approving the proposed multi-family structure based on geologic hazard concerns, the preservation of scenic resources, and determining the top of bluff and the proper setback. In this case, the delineation of the blufftop and the application of a setback are central in determining if the proposed project can be approved.

When approving development with a blufftop setback, the Commission typically applies the standard set forth in Section 13577 paragraph (h), of Title 14 of the California Code of Regulations to determine where the bluff edge is located. Section 13577 states, in relevant part:

Bluff line or edge shall be defined as the upper termination of a bluff, cliff, or seacliff. In cases where the top edge of the cliff is rounded away from the face of the cliff as a result of erosional processes related to the presence of the steep cliff, the bluff line or edge shall be defined as that point nearest the cliff beyond which the downward gradient of the surface increases more or less continuously until it reaches the general gradient of the cliff. In a case where there is a steplike feature at the top of the cliff face, the landward edge of the topmost riser shall be taken to be the cliff edge.

Mirroring the definition provided in Section 13577 of the California Code of Regulations, Section 17.88.030C of the City of San Clemente Municipal Code defines edge as follows:

8. "Edge" means the upper termination of a bluff, canyon of cliff. When the top edge is rounded away from the face as a result of erosional processes related to the presence of the steep bluff face, canyon, or cliff face, the edge shall be defined as that point nearest the face beyond which the downward gradient of the land surfaces increases more or less continuously until it reaches the general gradient of the bluff, canyon, or cliff face, the top of the bluff face, canyon, or cliff face, the landward edge of the topmost riser shall be taken as bluff edge, canyon edge, or cliff edge.

The San Clemente LUP allows for application of either a 25-foot setback or stringline setback when siting new development on blufftop lots. The 25-foot setback policy is being applied in the current situation. The Commission also recognizes that in a developed area, where construction is generally infilling and is otherwise consistent with the Coastal Act policies, no part of the proposed new structure, including decks, should be built further seaward than a line drawn between the nearest adjacent corners of the adjacent structures (stringline setback). The subject site is an oddly-shaped, undulating parcel, which is not located directly adjacent to residential structures on both sides. The El Portal public accessway is located directly downcoast of the subject site. Due to the configuration of the subject parcel, the Commission's stringline concept cannot be applied in establishing a setback requirement for development at the subject site.

### 2. Bluff Stability and Erosion

This section includes a general discussion of the causes of bluff erosion in the southern California region, particularly San Clemente, and specific bluff erosion at the project site.

a. Generalized Findings on Bluff Erosion

In general, bluff erosion is caused by environmental factors and impacts caused by man. Environmental factors include seismicity, wave attack, drying and wetting of soils, wind erosion,

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salt spray erosion, rodent burrowing, percolation of rain water, poorly structured bedding, and soils conducive to erosion. Factors attributed to man include bluff oversteepening from cutting roads and railroad tracks, irrigation, over-watering, building too close to the bluff edge, improper site drainage, use of impermeable surfaces to increase runoff, use of water-dependent vegetation, pedestrian or vehicular movement across the bluff top and toe, and breaks in water or sewage lines. In addition to runoff percolating at the bluff top site, increased residential development inland also leads to increased water percolation through the bluff. Over-watering and improper irrigation often contribute to this increased water percolation.

There are numerous articles about seacliff retreat and bluff erosion in coastal literature. Much of this literature pertains to bluffs subject to wave attack and to large-scale landsliding. Antony R. Orme wrote a paper entitled "Mass Movement and Seacliff Retreat along the Southern California Coast" published in the Bulletin of the Southern Academy of Science in 1991. He states that there are other factors in bluff erosion besides wave attack, including weathering of coastal cliffs by salt spray evaporation. The coastal bluffs at the project location are subject to wind-borne salt spray from the ocean. In conclusion Orme states:

Seacliff retreat is a natural process which, if unheeded, threatens human life and livelihood, and which can be aggravated by human activity. It will continue to occur and therefore responsible coastal management must require that human activity be set back an appropriate distance from cliff tops and diverted from unstable and potentially unstable terrain.

According to Orme, a major source of bluff instability in the Los Angeles area was the construction of the Pacific Coast Highway and the railroad. Like the bluffs in Los Angeles, the coastal bluffs in the City of San Clemente were disrupted by the construction of the Pacific Coast Highway and the railroad. Wherever the railroad tracks removed the toe of a coastal bluff, that coastal bluff became unstable. The bluff at the subject site is separated from the ocean by the railroad. However, the railroad construction activity happened early in the century, and although the coastal bluffs in San Clemente were impacted by the railroad construction, they are still natural coastal bluff landforms up to 100 feet high. These coastal bluffs would be eroding with or without the railroad construction. As stated in the focused EIR for Marblehead Bluffs (1991),

In the case of the Marblehead site, the geomorphic process responsible for bluff erosion is no longer wave action. El Camino Real has been constructed along the base of the bluff, with the AT&SF railroad and housing also having been built between the road and the shoreline. Instead of erosion by wave action, the bluffs continue to erode partly due to oversteepening that resulted from construction of the railroad and El Camino Real.

The Marblehead Bluffs are located approximately 0.75 miles north of the subject site, but the composition of the coastal bluffs in San Clemente is similar. There are railroad tracks located at the base of the coastal bluffs at the project location. The tracks contribute to coastal bluff erosion by not allowing talus and landslide materials to accumulate and by causing vibration in the bluffs due to passing trains.

There were two major coastal bluff stabilization projects in the City of San Clemente (La Ventana and Colony Cove) where residences on coastal bluffs have either been destroyed or endangered by bluff failure [CDPs 5-93-243 (San Clemente), A5-DPT-93-275 (Dana Point)]. Other residences on coastal bluffs in San Clemente have received permits to install caissons or other foundation protection measures (CDPs 5-00-034 (McKinley-Bass); 5-99-351 (McMurray); 5-93-181 (Driftwood Bluffs), 5-93-307 (Ackerly), and 5-93-143 (Mertz & Erwin)) because existing decks or residences were threatened by bluff erosion. The owner of the property two lots north of the subject site has also applied for an emergency permit for slope repair.

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Landsliding of coastal bluffs below La Ventana Street in the City of Dana Point resulted in the destruction of five homes. Landsliding of the bluffs below Colony Cove resulted in the undermining of terrace walls and patio structures. The primary cause of the La Ventana Landslide was water infiltration into the bluff along a deep seated slope failure line. The report states that water seepage onto the bluff face was longstanding and that landscaping on the rear yards of some bluff top homes may have contributed to the accumulation of water in the slopes.

Additionally, in a letter dated October 1, 1999 discussing a bluff repair project at 327 and 327 ½ Paseo De Cristobal [5-00-034 (McKinley-Bass)], Stoney-Miller Consultants made the following general observation regarding San Clemente: "The failure was the result of seepage flows along the lithologic contact between the Terrace Deposit and Bedrock. This contact is a geologic feature that underlies the majority of the City of San Clemente east of the shoreline bluff to the Interstate 5 Freeway. Irrigation and rainfall throughout this area provides recharge to the perched water at this contact."

The Commission has received many application requests to resolve geotechnical problems and protect existing structures on coastal bluffs and coastal canyons in San Clemente which were caused by inadequate drainage systems, i.e., broken irrigation lines, overwatering, directing uncontrolled runoff to the bluff slopes, and differential settling due to improperly compacted fill.

An emergency permit was issued in 1990 for massive grading of unstable bluffs at the Marblehead site. Landsliding in 1990 had caused repeated closures of the Pacific Coast Highway at the base of the bluffs. Unlike the La Ventana and Colony Cove sites, there was no development on the Marblehead bluffs. The Marblehead Bluffs erosion problem was created in part by the construction of the railroad and the Pacific Coast Highway, which resulted in oversteepening of the bluffs. The Marblehead geological report by Zeiser Kling Consultants, Inc., discusses the process of bluff retreat:

The oversteepened bluffs fail due to erosion, such as wave action along the base of the bluff, and due to other environmental factors such as water saturation during periods of abundant rainfall. Fallen debris accumulates at the foot of the slopes where it forms an unstable talus pile. Secondary failures occur as the talus erodes. As more failures occur, the bluff retreats landward. In its mature state, the landform no longer has the appearance of a bluff. The talus pile grows into a large "apron" that buries the bluffs, but continues to fail intermittently as it seeks its angle of repose. The landform may become temporarily stable when the talus apron is large enough to cover the bluff face, protecting the otherwise steep slopes from exposure and possibly buttressing the base of the slopes.

The Marblehead and other geotechnical reports state that the process of coastal bluff erosion can be slowed by landscaping, setting buildings back from the blufftop and constructing impact barriers at the base of the bluff, or by grading and terracing the slope.

The Colony Cove, La Ventana, and Marblehead bluff stabilization projects are located north of the project site. However, there are bluff stability problems along the entire stretch of San Clemente coastal bluffs as evidenced by applications for foundation support systems for residences on coastal bluffs and by foundation support systems built prior to passage of the Coastal Act. Much of the development on coastal bluffs prior to the Coastal Act was constructed close to the bluff top edge and later required support systems for failing patios, decks and other improvements.

In addition to documentation of the instability of coastal bluffs in San Clemente, Gerald G. Kuhn published an article entitled "Greatly Accelerated Man-Induced Coastal Erosion and New Sources of Beach Sand, San Onofre State Park and Camp Pendleton, Northern San Diego County, California," in which it is noted that 80% of the cliffs between the San Onofre Nuclear

Power Plant and Target Canyon have experienced landslides. Camp Pendleton is approximately three miles south of the project site.

#### b. <u>Site Specific Geotechnical Data</u>

As the discussion in the prior section indicates, development on Southern California coastal bluffs is inherently hazardous. To address the feasibility of constructing the project in this potentially hazardous area, the applicant submitted a *Geotechnical Investigation Report for Proposed Multi-Family Residence, 1105 Buena Vista, Lot 15, Tract 794, San Clemente, California* prepared by Petra Geotechnical dated March 22, 2002.

The report presents the results of the field investigation and laboratory testing and provides geotechnical recommendations based on the design of the proposed structure. The report included a review an aerial photographs and stability analyses to evaluate the stability and potential for retreat of the coastal bluff edge located in the property. The consultant reviewed published and unpublished literature and geotechnical maps with respect to active and potentially active faults located in proximity to the site.

The geotechnical report describes the property as a roughly trapezoidal-shaped lot with existing residential structures where the developed portion of the site is situated on an elevated marine platform overlooking the Pacific Ocean. The undeveloped portion of the lot includes an approximately 80-foot high bluff that descends to the railroad tracks below. According to the consultant, the northwestern half of the slope is virtually unaltered bluff. The upper portion of the slope has an average slope ratio of approximately 1:1 (horizontal to vertical) with some portions as steep as 0.5:1 (horizontal to vertical). The lower portion of the slope is more gentle, descending at an approximate slope gradient of 1.6:1 (horizontal to vertical) to the toe. As stated in the geotechnical report, "this portion of the slope is significantly different than the slope that lies within the southeastern portion of the property, adjacent to the public beach access. The coastal bluff edge recedes in this area, marking the location of a former stream that breached and recessed the bluff top." Cross sections of the rear yard bluff are provided in Exhibit 5.

The geotechnical consultant assessed previous grading and historic bluff retreat at the subject site in order to quantify bluff retreat rates. Based on the consultant's review of oblique aerial photography, the blufftop in the area of the subject property has been modified by grading of Buena Vista and other adjacent roadways and the filling of an incised stream channel along the southeastern portion of the property to support the Buena Vista roadway. Initial grading activities were noted as early as 1931. Backfilling of the incised stream channel was performed between 1959 and 1967. As stated in the report, *"the stream channel fill was regraded between 1975 and 1977, and the existing stairs to the beach were visible in the 1980 and later photographs."* The geotechnical report documents various activities that affect the current location and configuration of the top of bluff.<sup>1</sup>

While the bluff has been previously altered by human activities, the geotechnical consultant found no evidence of gross failure of the coastal bluff below the subject site and its general vicinity. During the period covered by the aerial photographs reviewed by the consultant, the bluff appeared to be unchanged, except for the backfilling of the former incised stream channel to the southeast. As stated in the report, *"it appears that there is no discernible change in position of the bluff top at the site since 1959 (a 42-year period).* The consultant believes that any changes or bluff retreat greater that 8 to 12 feet should have been measurable. As such, they conclude that no more than 8 to 12 feet of bluff-top retreat has occurred within the last 42 years.

<sup>&</sup>lt;sup>1</sup> The southeastern half of the rear yard descending slope is the focus of the current bluff edge disagreement.

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The geotechnical report includes a discussion of slope stability. As described in the report, the southwestern rear yard descending slope consists of a *"virtually unaltered 80-foot high bluff comprised of resistant bedrock capped with approximately 10 to 17 feet of terrace deposits and artificial fill."* The southeastern half of the rear yard descending slope has been altered during the backfilling of the incised stream channel and construction of the adjacent park site with beach access stairs. The report states that the slope along the southwestern edge of the property is considered to be grossly stable and free from mass movement and excessive erosion.

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Due to the minimal amount of bluff retreat and the results of the slope stability analyses, the consultant concludes that the proposed setback is appropriate. The geotechnical report states that the proposed building has a "minimum structural setback of 25 feet away from the top of the coastal bluff edge. The coastal bluff edge defined herein is the former top of native terrace deposits, and excludes the presence of the existing artificial fill slope above." The report also cites the Uniform Building Code (UBC) recommendation that foundations for residences be deepened, as necessary, such that a "minimum horizontal distance equal to one-third of the total slope height is maintained between the outside bottom edges of the footings and face of the slope." Based on this requirement, a minimum horizontal setback of 25 feet will be needed between the outride bottom edges of proposed building footing and the face of the adjacent slope. In addition, the consultant recommends that the proposed residence be set back beyond an imaginary plane projected from the toe of the coastal bluff (from the surface of the bedrock and exclusives of any overlying talus) upward through the Capistrano Formation bedrock at a slope ratio of 1.5:1, horizontal to vertical. The consultant concludes that the proposed building setback will conform to the stringline method of setback, the setback criteria recommended by the UBC and will also extend beyond an imaginary 1.5:1 (horizontal to vertical) setback plane projected upward from the toe of the adjacent bluff. As such, the consultant asserts, "the proposed structural setback of the residence from the coastal bluff is, therefore, considered acceptable from a geotechnical standpoint, and is anticipated to provide adequate protection of the residence during the lifetime of the project (at least 50 years)."

The consultant concludes that, from a soils engineering and engineering geologic point of view, the subject site is considered suitable for the proposed development and construction provided certain recommendations are incorporated into the design criteria and project specifications. Recommendations include those related to grading, site preparation, site drainage, structural design of foundations and slabs and hardscape design and construction. While the Commission recognizes that the site is developable given sufficient engineering mechanisms, the proposed structure is not appropriately designed and sited to minimize potential geologic hazards and visual impacts (the latter to be discussed in subsequent section).

A topographic survey provided by the applicant depicts the top of slope to be located at the 88' contour along the southern portion of the property. The proposed structure is sited 25 feet from that point. However, based on the Commission's methodology for determining the top of bluff, Commission staff believes the bluff edge to follow the 90-foot contour in this location of the property (Exhibit 6). The 90-foot contour depicts the landward edge of the top of slope in an area of the site where substantial disturbance and erosion has occurred. There are various plateaus (step-like features) within the southern portion of the property. As observed during site visits, the slope in this area has retreated to the foundation of a patio retaining wall and elevated wooden walkways have been constructed to allow passage between the southern area of the existing building and the rear patio. The 88-foot contour is located in a vegetated area of the site located approximately 5-10 feet seaward of the patio foundation and makeshift walkway. Consequently, the 88-foot contour does not meet the definition of "edge" established by Section 13577 of the California Code of Regulations, which states that the *"landward edge of the topmost riser shall be taken to be the cliff edge."* While staff and the applicant disagree about the location of the bluff edge in the southernmost portion of the site, an agreement has

been reached regarding the location of the bluff edge along the central and northern portions of the site.

The Commission's staff geologist has reviewed the geotechnical information submitted and conducted a site visit. As stated in the Geotechnical Review Memorandum to district staff (Exhibit 7), *"identification of the 90-foot contour as the bluff edge approximates the topographic break in slope that occurs in the artificial fill material overlying the natural bluff edge. Although this topographic break does not represent a natural bluff edge, the 25-foot setback from the natural bluff edge believed to lie below also will serve to protect the structure and any ancillary structures from instability due to slumping or raveling of the artificial fill, a process that is currently ongoing." The natural bluff edge is difficult to determine due the extent of historical grading and "appreciable amount of artificial fill," as described by the staff geologist. However, in the absence of additional information regarding the configuration of the terrace deposits beneath the fill, the Commission finds that the bluff edge is the prominent topographic break roughly coincident with the 90-foot contour.* 

Applying the Commission's criterion for determining the bluff edge, the southwestern corner of the proposed structure is sited approximately 15 feet from the bluff edge, with the patio located 4 feet from the bluff edge. The northwestern corner of the structure is sited 25 feet from the bluff edge. Therefore, the southwestern portion of the site will encroach into the 25-foot structural and 10-foot deck setback areas by 10 feet and 4 feet respectively. As discussed previously, the City of San Clemente LUP requires proposed development on blufftop lots to be set back at least 25 feet from the bluff edge, or set back in accordance with a stringline drawn between the nearest corners of adjacent structures on either side of the development. The Commission has typically imposed a minimum 25-foot setback on new blufftop developments in San Clemente and approved the LUP requirement as consistent with the policies in the Coastal Act. Application of the 25-foot setback from the 90-foot contour line in this instance will provide for greater protection from potential hazard resulting from bluff failure.

#### 3. Conclusions and Determination of Inconsistency

Although the *Geotechnical Investigation* concludes that the proposed project is feasible from the engineering perspective, the Commission notes that, given sufficient engineering, virtually any project can be constructed. However, the requirements of Section 30253 of the Coastal Act establish the standard for evaluating the proposed development. Section 30253 prohibits new development that requires the use of protective devices that would substantially alter natural landforms along bluffs and cliffs. Consequently, the fact that a project could technically be built at this location is not sufficient to conclude that it is consistent with Section 30253 or that it *should* be undertaken. This proposed project would be incompatible with Section 30253 as it has not been sited and designed to prevent the need for the use of protective devices (such as continuous deepened footings and retaining walls), which would alter natural landforms. In fact, the proposed development requires grading and removal of material for site preparation and garage excavation. The impact of the proposed development on Scenic Resources will be discussed in the following section.

While the bluff at the subject site is considered grossly stable, in years past, bluff instability and erosion have detrimentally affected nearby properties along Buena Vista due to soil saturation and high groundwater activity correlating to heavy rainfall. The problems were exacerbated by poor drainage conditions. The geotechnical consultant concludes that the subject development will not be subject to the same instability issues if the recommended design measures are adhered to. Additionally, staff has conducted a site visit and observed that the bluff face supports a moderate amount of vegetation, which indicates that less surface area is open to erosion from the wind, salt spray, exposure to the sun, and wetting and drying. The vegetation also means that there are root systems adding cohesion to the soils.

#### 5-01-179 (Buena Vista Townhomes, LLC) Page 13 of 15

As has been noted in this staff report, bluff failures have occurred within the subject area and throughout San Clemente. Bluff failures are often unpredictable and episodic. Failures in the Buena Vista neighborhood have been attributed to over-watering, broken irrigation lines, broken water lines, and inadequate drainage systems. These types of failures in some instances have created the need for blufftop protective devices, such as caisson and grade beam systems to protect existing structures. The seaward portion of the proposed project will be supported by a continuous deepened footing system. If a bluff failure were to occur, the foundation may become exposed, posing a threat to the safety of the residence, as well as the entire site. Geotechnical evaluations and professional recommendations are not infallible. As such, while the site is considered stable at this time, the proposed development must be adequately set back from the designated "top of bluff" to assure stability over the life of the structure. The preferred means of minimizing potential hazards on blufftop lots is through adequate setback, rather than engineering mechanisms and protective devices.

To meet the requirements of the Coastal Act, bluff and cliff developments must be sited and designed to assure stability and structural integrity for their expected economic lifespans while minimizing alteration of natural landforms. The Commission typically requires that structures be setback at least 25 feet from the bluff edge and hardscape features (including decks and patios) be setback at least 10 feet from the bluff edge to minimize the potential that the development will contribute to slope instability. Bluff and cliff developments (including related storm runoff, foot traffic, site preparation, construction activity, irrigation, waste water disposal and other activities and facilities accompanying such development) must not be allowed to create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas which would then require stabilization measures such as caissons, pilings or bluff re-structuring.

Section 30253 of the Coastal Act states that new development shall minimize risks to life and property in areas of high geologic, flood, and fire hazard, and 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. The proposed project, as currently sited, is located too close to the bluff edge and therefore does not minimize risk to life and property. In addition, as currently sited, the proposed development does not assure stability and structural integrity and will require the construction of a protective foundation system that will alter the natural landform of the bluff. The Commission finds the proposed development inconsistent with Section 30253 of the Coastal Act. As such, the project must be denied.

#### C. SCENIC RESOURCES

Section 30251 of the Coastal Act pertains to visual resources. It states:

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...

The project is located on a blufftop lot north of the Municipal Pier and south of North Beach. The site is located inland of the OCTA railroad tracks and is highly visible from the beach below and from the adjacent El Portal public stairway (Exhibit 3). Because the new condominium complex will affect views inland from the shoreline and from a public access point, any adverse impacts must be minimized. Consequently, it is necessary to ensure that the development will be sited and designed to protect views to and along the beach area and to minimize the alteration of existing landforms.

#### 5-01-179 (Buena Vista Townhomes, LLC) Page 14 of 15

The project involves the construction of a new three-story multi-unit residential structure with hardscape and landscaping on a highly visible blufftop lot. As proposed, the structure and hardscape features encroach into the required setback areas by approximately 5-10 feet. The project is therefore more visible from the public stairway and beach than if sited further inland. Also, the proposed structure will be supported by a continuous deepened footing system. As stated previously, if a bluff failure were to occur, the foundation may become exposed. Not only would this create a hazardous condition, but it would also present an adverse visual impact. Therefore, although the site is considered stable at this time, the development must be appropriately sited and designed to prevent such an occurrence in the future. The Commission has typically required structural development in this area to be sited at least 25 feet from the bluff edge and hardscape features to be sited at least 10 feet from the bluff edge. A greater setback than currently proposed will reduce the visibility of the development from the shoreline below and from the EI Portal public accessway. In addition, a greater setback will allow for additional screening of the structure with vegetation.

Therefore, the Commission finds that the project, as proposed, is inconsistent with the visual resource protection policies of Section 30251 of the Coastal Act.

### D. <u>ALTERNATIVES</u>

Denial of the proposed multi-unit residential project will not deny all economically beneficial or productive use of the applicant's property or unreasonably limit the owner's reasonable investment-backed expectations of the subject property. The site is currently developed with a five-unit apartment complex and could remain in that state. In addition, the applicant is left with various design alternatives to construct a new multi-unit structure sited in conformance with a greater blufftop setback. Among those alternatives are the following (though this list is not intended to be, nor is it, comprehensive of the possible alternatives):

1. <u>No Project</u>

No changes to the existing site conditions would result from the "no project" alternative. The owner could continue to rent out the existing apartment units. This alternative would result in the least amount of effects to the environment and would not have any adverse effect on the current value of the property.

#### 2. <u>Remodeling Existing Structure</u>

One alternative to the proposed project would be to remodel the existing structure. The owner would refurbish the exterior and/or interior of the structure to modify the existing apartment units. The owner could continue to rent out the units as apartments or could request to subdivide for condominium purposes. If the remodeling activities do not result in a seaward encroachment or unallowable height increase of the existing structure, this alterative might not create adverse effects to the environment.

#### 3. Demolishing and Rebuilding Existing Structure

Another alternative to the proposed project would be to demolish and rebuild the existing apartment complex, consistent with the required setbacks from the bluff edge. In order to conform to the required setbacks, the reconstructed building would be designed with a smaller footprint than currently proposed. As such, the livable space would decrease and the number of units may decrease. However, four smaller units could still be accommodated at the subject site. In the currently proposed design, the units range in size from 1,947 square feet to 2,612 square feet. Three of the four units have three bedrooms and the fourth has two bedrooms. If the square footage/number of bedrooms of each unit is reduced or the number of units decreases, required parking would decrease. Consequently, the square footage needed to accommodate parking would also decrease and a smaller development footprint would be required.

## E. LOCAL COASTAL PROGRAM

Section 30604(a) of the Coastal Act provides that the Commission shall issue a coastal permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act. The Commission certified the Land Use Plan for the City of San Clemente on May 11, 1988, and certified an amendment approved in October 1995. On April 10, 1998, the Commission certified with suggested modifications the Implementation Plan portion of the Local Coastal Program. The suggested modifications expired on October 10, 1998. The City re-submitted on June 3, 1999, but withdrew the submittal on October 5, 2000.

The proposed development is inconsistent with the policies contained in the certified Land Use Plan, including Policy VII.14, which requires a minimum 25-foot setback from the bluff edge. Moreover, as discussed herein, the development, is inconsistent with the Chapter 3 policies of the Coastal Act. Therefore, approval of the proposed development will prejudice the City's ability to prepare a Local Coastal Program for San Clemente that is consistent with the Chapter 3 policies of the Coastal Act as required by Section 30604(a).

### G. CONSISTENCY WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 of Title 14 of the California Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

As described above, the proposed project would have significant adverse environmental impacts. There are feasible alternatives or mitigation measures available, as described in the previous section, that would substantially lessen the significant adverse impacts which the activity may have on the environment. Therefore, the proposed project is not consistent with CEQA or the policies of the Coastal Act because there are feasible alternatives which would lessen significant adverse impacts which the activity would have on the environment. Therefore, the proposed project is not consistent with Therefore, the project must be denied.

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| COASTAL COMMISSION<br>5-01-179<br>EXHIBIT #<br>PAGEOFO | PROJECT DIRECTORY       SITE ANALYSIS         PROJECT LOCATION<br>ISB BUENA VISTA<br>DAN CLEPKENTE: CA 438-7       CODE STUDY<br>NORTH<br>SUBJECT TON<br>ADVENTE: CA 438-7       SITE ANALYSIS         LEGAL DESCRPTION<br>A re edition of the subject to the subje   |   |
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EX. 4 4/10 BUENA VISTA TOWN-HOMES **∧rtek**• A-2 d c francisco p. montesinos a.i.a. 108 via zapata lic. # 13710 san clemente, california 92672 :

hlink.net

(949) 361-3520, fax (949) 361-3729



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SECOND FLOOR PLAN





EX. 4 6/10 Artek• BUENA VISTA TOWN-HOMES 1105 BUENA VISTA BAN CLEMENTE, CA 92672 A = 4 francisco p. montesinos 108 via zapata a.i.a. lic. # 13710 92672 san clemente, california

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LEFT BIDE

#### SOUTH ELEVATION

#### **GENERAL NOTES**

1. TWO PIECE SINGLE BARREL CLAY THE ROOFING, 3 TO 12 SLOPE, and TERRACOTTA COLOR. RIDGES AND FIRST ROW USE MORTAR GROUT.

2. 7/8" EXTERIOR PLASTER ON MTL. LATH, SAND (20/30) FINISH, BULLNOSED EXTERIOR CORNERS, COLOR AS MANUFACTURED BY "OMEGA PRODUCTS CORP." 10 OMEGA WHITE, AND AS APPROVED BY THE ARCHITECT.

3. 4x10 EXPOSED RAFTER TAILS, CORBELS AND ANY EXPOSED LUMBER TO BE R.S. WITH SOLID STAINED

"OLYMPIC 708", DARK BROWN OAK, OR APPROVED EQUAL, 4. W.I. RAILINGS, POTHOLDERS, GRILLS, ETC. TO BE PAINTED SOLID BLACK.

5. TRUE DIVIDED LIGHTS WOOD WINDOWS, STAINED DARK BROWN

6. WOOD DOORS WITH TRUE DIVIDED LIGHT PANELS, SINGLE LIGHT PANEL AT REAR ELEVATION FOR VIEW, STAIN TO

MATCH WINDOWS. 7. CHIMNEY STACK, 2K FRAMED WITH STUCCO FINISH AS NOTE #2. ANY OPENINGS TO BE NOT LESS THAN 2'-0" VERT. AND 10'-0" HORIZ. FROM ANY ROOF COMPONENTS. PROVIDE SPARK ARRESTORS FOR ALL FLUES.

8. USE SPANISH PAVERS (12x12) AT STAIRS AND ENTRY COURTYARD. DECO TILE FOR RISERS.

9. LIGHT FIXTURE.

10. WINDOW SHUTTERS PAINTED AS PER ARCHITECT 11. USE Zx4 FOR WINDOW SILL DETAIL AS SHOWN IN

ELEVATIONS. STUCCO OVER 12. BUILDING ADDRESS.





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RIGHT SIDE

# NORTH ELEVATION

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#### GENERAL NOTES

- 1. TWO PIECE SINGLE BARREL CLAY TILE ROOFING, 3 TO 12 SLOPE, and TEBRACOTTA COLOR. RIDGES AND FIRST ROW USE MORTAR GROUT. 2. 7/8" EXTERIOR PLASTER ON INTL. LATH, SAND (20/30)
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- 3. 4110 EXPOSED RAFTER TAILS, CORBELS AND ANY EXPOSED LUMBER TO BE R.S. WITH SOLID STAINED "OLYMPIC 708", DARK BROWN OAK, OR APPROVED EQUAL. 4. W.I. RALINGS, POTHOLDERS, GRULS, ETC. TO BE RANTED
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45 FREMONT, SUITE 2000 SAN FRANCISCO, CA 94105-2219 VOICE AND TDD (415) 904-5200

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CALIFORNIA COASTAL COMMISSION

12 March 2002

**COASTAL COMMISSION** 

5-01-179

EXHIBIT #\_

PAGE.

#### GEOTECHNICAL REVIEW MEMORANDUM

To: Anne Blemker, Coastal Program AnalystFrom: Mark Johnsson, Staff GeologistRe: CDP Application 5-01-179 (Buena Vista Town Homes)

In reference to the above application I have reviewed the following documents:

- 1) Petra 2001, "Geotechnical investigation report, proposed multi-family residence, 1105 Buena Vista, Lot 15, Tract 794, San Clemente, California", 41 p. geotechnical report dated 22 March 2001 and signed by S. Guha (RCE 58967) and R. W. Ruff (CEG 1165).
- 2) Toal Engineering, Inc. 2001, "Topographic survey, I Lot 15, Box 7, Tract 794, San Clemente, California", 1 p. topographic survey dated 6 December 2001 and signed by O. S. Meum (LS 4384).
- 3) Artek Group 2001, "Coastal Permit Application No. 5-01-179, 1105 Buena Vista, San Clemente, CA 92672", 1 p. letter dated 10 December 2001 and signed by F. P. Montesinos.

In addition, I visited the site on 14 November 2001 and on 19 February 2002.

The subject site lies at the top of a coastal bluff, and a prime concern for finding consistency with Coastal Act section 30253 is the stability of the bluff. Reference (1) contains an evaluation of both the gross and surficial stability of the site. The site is underlain by the Capistrano Formation, a unit well-known to be susceptible to landsliding, overlain by thin marine terrace deposits and artificial fill. Minor surficial slumping and erosion is evident on and adjacent to the site, but the slope stability analyses reported on in reference (1) demonstrate that the slope is grossly stable for both the static and the pseudostatic conditions. Both sets of analyses make use of strength parameters (cohesion and friction angle) that are well-documented from shear test data; the static analysis makes use of residual strength data, whereas the pseudostatic analysis makes use of peak data. This is acceptable, although perhaps not conservative. As indicated above, minor surficial instability, exacerbated by drainage adjacent to the public access stairs, is noted and will likely continue. Such erosion can be mitigated to some degree by the implementation of the drainage, vegetation, and irrigation recommendations contained in the report, but an adequate bluff-edge setback should be maintained in order to assure stability for the lifetime of the proposed

structure. A more conservative irrigation plan (e.g., no permanent irrigation after establishment of vegetation) would contribute further to mitigation of surficial instability.

Like all of coastal San Clemente, this bluff is protected from wave attack by the ATSF railroad tracks, which are in turn protected by a rock revetment. Thus, marine erosion is not likely to be a process acting on this bluff over the economic lifespan of the development. The bluff is being eroded by surficial processes, however, as is evident by a 1993 mudflow on the lot to the north, older mudflow lobes at the base of the bluff on the subject lot, and distress to concrete flatwork at the bluff top. Historic bluff retreat was addressed in reference (1) by examining aerial photographs spanning the time interval 1952 to 1999. No significant recession of the bluff was noted over that time interval, but due to the limitations of the available photography, a conservative conclusion reported in reference (1) is only that no more than 8-12 feet of erosion occurred over that interval.

Reference (1) notes that City regulations require a 25-foot setback from the bluff edge. Further, it is recommended (per UBC recommendations) that foundation elements be set back 25 feet from the face of the slope, a less restrictive recommendation than the City regulation given that the proposed foundation is to be set well below grade to allow for the construction of a basement. Finally, the report recommends that the proposed residence be set back beyond an imaginary plane projected from the toe of the coastal bluff (from the surface of the bedrock and exclusive of any overlying terrace) upward through the Capistrano formation bedrock at a slope of 1.5:1. This line is not illustrated on plate 2 (contrary to the indication in the report), but appears to be less restrictive than the bluff edge setback required by the City. I concur that a 25 foot setback from the bluff edge is adequate to assure stability of the proposed structure for its anticipated economic lifespan.

The bluff top at this site contains an appreciable amount of artificial fill, making accurate delineation of the bluff edge very difficult. The Coastal Act definition of a coastal bluff edge is set forth in \$13577, paragraph (h), of Title 14 of the California Code of Regulations. It provides in relevant part:

Bluff line or edge shall be defined as the upper termination of a bluff, cliff, or seacliff. In cases where the top edge of the cliff is rounded away from the face of the cliff as a result of erosional processes related to the presence of the steep cliff, the bluff line or edge shall be defined as that point nearest the cliff beyond which the downward gradient of the surface increases more or less continuously until it reaches the general gradient of the cliff. In a case where there is a steplike feature at the top of the cliff face, the landward edge of the topmost riser shall be taken to be the cliff edge.

EX. 7 2/4

Nothing in the Coastal Act or its regulations stipulates that a coastal bluff need be unmodified by human activities to preserve its status as a coastal bluff. If the morphology of a bluff has been changed by prior grading, the only standard by which to establish the current bluff edge is as defined in the regulation. In reference (1), the coastal bluff edge is defined "as the former top of native terrace deposits, and excludes the presence of the existing artificial fill slope above." This is appropriate and consistent with previous Commission decisions - the presence of artificial fill adjacent - or even over – a coastal bluff does not change the location of the bluff edge from it's pre-grading configuration, although the overlying fill may conceal the location of the natural bluff edge. However, a cut at the top of a bluff may very well move the bluff edge landward of its original position. Artificial fill overlying either the natural bluff edge or an artificial bluff edge created by a cut may make the location of the bluff edge very difficult to determine. This is the case at the subject site. After perusing the topographic survey (reference 2), the boring logs of test pits 2 and 3 in reference (1), the estimate of the terrace/fill contact on plate 2 of reference (1), and after visiting the site, it is my opinion that the bluff edge on the southern part of the site is approximately coincident with the 90 foot contour as depicted on reference (2). The geotechnical cross-section in reference (2) depicts a buried, inclined interface between the terrace deposits and the artificial fill that very likely represents either a cut slope at the top of the bluff face, or a rounded edge as described in the regulation cited above. Thus, it is possible that the actual bluff edge should be placed considerably landward of the 90 foot contour. In the absence of more definitive information, however, the present topographic form, used in placing the bluff edge at the 90 foot contour, seems most appropriate. Reference (3), a letter from the project architect, contains an assertion, unsupported by any argument, that the bluff edge should be placed at the 88 foot contour. Although this does represent the approximate contact between the fill and the terrace deposits on the bluff face, for the reasons outlined above this is not an appropriate point at which to place the bluff edge by the definition outlined in the regulation.

I note that the identification of the 90 foot contour as the bluff edge approximates the topographic break in slope that occurs in the artificial fill material overlying the natural bluff edge. Although this topographic break does not represent a natural bluff edge, the 25-foot setback from the natural bluff edge believed to lie below also will serve to protect the structure and any ancillary structures from instability due to slumping or raveling of the artificial fill, a process that is currently ongoing.

I cannot describe the bluff edge for the most northern part of the site (above the retaining wall), as the topographic survey (reference 2) does not extend to that portion of the site. However, I feel that, in the absence of more information as to the configuration of the terrace deposits beneath the fill, the bluff edge should be identified as the prominent topographic break roughly coincident with the 90 foot contour, barely discernible on plate 1 of reference (1).

EX. 7 3/4

Reference (1) also contains recommendations for foundation elements. I note specifically that continuous or spread footings are to be emplaced "a minimum of 12 inches into terrace deposits." I concur with this assessment; in no case should the house be founded on the artificial fill.

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

Sincerely,

Marti Ma

Mark Johnsson, Ph.D., CEG

EX. 7 4/4