CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
7575 METROPOLITAN DRIVE, SUITE 103
SAN DIEGO, CA 92108-4402
(619) 767-2370

F 9b

Addendum

August 5, 2008

To: Commissioners and Interested Persons

From: California Coastal Commission
San Diego Staff

Subject: Addendum to **Item F 9b**, Coastal Commission Permit Application **#A-6-CII-08-028 (Moss)**, for the Commission Meeting of August 8, 2008.

In response to information received from the applicant's consultants, staff recommends the following changes be made to the above-referenced staff report:

1. Page 7 of the staff report, Special Condition #12 shall be modified as follows:

12. Survey of Shoreline Protection. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit final revetment plans for the project that have been approved by the City of Carlsbad that include a survey of the existing revetment, prepared by a licensed surveyor, for the review and written approval of the Executive Director. The survey shall document that the revetment is as far inland as possible and identify permanent benchmarks from the property line or another fixed reference point from which the elevation and seaward limit of the revetment can be referenced for measurements in the future. Said plans shall be in substantial conformance with the plans submitted with the plans prepared by Zavatto Design Group dated July, 2007 and shall include the following:

[…]

2. Page 2 of the staff report, the third complete paragraph shall be modified as follows:

The City granted a variance from the front yard setback requirements (20 feet required, 0-foot setback approved). The variance allows more of the flat upper portion of the site to be used for building rather than the steeper sloping portions of the lot which minimizes grading and landform alteration consistent with coastal resource preservation. The prevailing pattern of development along Tierra Del Oro uses this approach and the City and Commission have approved it in many permit decisions. There is an existing stairway and, except for the bottom section on the revetment, it ~~the revetment~~ is a confirmed pre-coastal act stairway and no improvements are proposed on this stairway.

3. Page 12 of the staff report, the second paragraph shall be modified as follows:

The existing rock riprap revetment was initially installed prior to passage of the Coastal Act, although aerial photography indicates that the riprap revetment was enlarged sometime between May of 1979 and June of 1987; without the benefit of a Coastal Development permit. The 1979 and 1987 photos were taken during the same season, thus there should not be a large scale difference in the depth of the beach based solely on natural processes. It is likely, therefore, that the revetment was enlarged as opposed to it simply being more visible due to lack of sand supply and thus a higher level of exposure. In 1978, seven properties to the south ~~north~~ sought and received a permit from the Commission for improvements to the existing revetment in response to damaging storm waves (ref. CDP# F7529). […]

4. Page 15 of the staff report, the following shall be added directly prior to first full paragraph:

Since the development of the In-Lieu Beach Sand Mitigation Fee Program, the Commission has used a sand volume to beach area conversion, termed "v", ranging from 0.9 cubic yards/square foot to 1.5 cubic yards per square foot. The range was developed from several sources – from empirical evidence following beach nourishment efforts in southern California, from a rule-of-thumb termed the "CERC Rule", named for the US Army Corps of Engineers Coastal Engineering Research Center, and from geometric evidence. When presented with the available range, applicants or their representatives have uniformly selected the lowest value of 0.9 cubic yards per square foot as being appropriate for their site.

For the proposed project, the applicant's consultant has submitted historic shoreline surveys provided in the 1991 Coastal of California Storm and Tide Wave Study (CCSTWS): State of the Coast, San Diego Region that correlates seasonal shoreline volume with seasonal shoreline position and was used to test the CERC Rule. The report material provided by the applicant's consultant notes: " For water depths deeper than 10 feet (MLLW) and considering all data points, the correlation between volume and shoreline change is not very well defined except for the Oceanside Harbor Subreach (subreach 4 of Figure 3-14). ….. It should be noted that the accuracy of the estimated volume change for water depths greater than 10 ft (MLLW) is a function of the survey method and conditions. It is usually expected to experience more survey errors in this depth range (> 10 ft) and this could have an impact on the established relationships. It is therefore recommended to limit the results of this analysis to water depths < 10 ft below MLLW. The results can be applied to estimate the required nourishment rates for preserving a given beach width." (CCSTWS, 1991, page 3-30)

"The seasonal sediment volume changes along the Oceanside Cell presents a good correlation with the shoreline movements as shown in Figure 3-19 [not reproduced herein]. Such correlation exists for volume changes occurring along profile lengths extending to various water levels (MHHW, MSL, -10 ft, 130 ft and 140 ft). The

results of the analysis shown in Figure 3-19 indicate that the rule correlating one square foot of beach area change to volume change is as follows: (CCSTWS, 1991, page 3-51)

Ratio of Volume to Shoreline Change (v/s) cu yd/ft	Elevation of Computed Volume Change ft
0.20	MHHW
0.29	MSL
0.65	-10 ft (MLLW)
0.62	-30 ft (MLLW)
0.67	-40 ft (MLLW)

This information shows the changes in sand volume and shoreline position for a shoreline that had been long subject to shoreline erosion and a natural sand supply that was reduced due to inland trapping of sand by dams and reservoirs, upcoast trapping and diversion of sand by the Harbor at Oceanside, and reduced sand supplies by the armoring of coastal bluffs. The long-term shoreline trend for this north Oceanside Littoral Cell was "averaging approximately 5 ft/yr at Agua Hedionda Lagoon and 1 ft/year at Encinitas" (CCSTWS, page xi). The Commission has rejected the use of this table several times for prior applications because the values represent the eroded beach condition and not the volumes of sand necessary to completely fill the profile to closure. And, as noted in the support material provided, the volume changes for water depths greater than 10 feet MLLW are highly suspect. In fact, the table suggests that for only a 30 foot profile depth, the nourishment effort would be less than needed for either a 10 foot profile or a 40 foot profile depth.

The Commission has relied upon a general geometry analysis for determining the volume of sand needed to nourish a square foot of beach, similar to the volumetric analyses used by the Army Corps of Engineers to design beach berm fills and other nourishment efforts. The geometric analysis relies upon the volume of sand that would be necessary to build a parallelogram with a top area of 1 foot by 1 foot and a height going from the elevation of the dry beach to the depth of closure. For Oceanside Littoral Cell, this has been taken to be a range from -30 feet MLLW to +10 MLLW for the 1.5 cubic yards per square foot value to a -20 feet MLLW to + 5 MLLW for the 0.9 cubic yards per square foot value[1].

Since the Commission initiated the In-Lieu Beach Sand Mitigation Fee Program, the San Diego Region, in 2001, undertook a regional beach sand replenishment program which placed 2.1 million cy of sand on 12 San Diego beaches. As a condition of approval, this effort was monitored for 5 years – a period of time that proved comparable to the time period during which indications of the nourishment effort could be observed. In the 2003 Annual Monitoring Report, there was study of the shoreline improvements that were

[1] Where the -30' MLLW to +10' MLLW depth provided a parallelogram that is 40' x 1' x 1' = 40 cubic feet or 1.5 cubic yards.

achieved from the nourishment volumes. The report found: "It is noteworthy that the average shorezone volume increase of 15 cy/ft (Table 14) and average shoreline advance of 17 ft (Table 13) that occurred during the RBSP Monitoring Period are in substantial agreement with the "CERC Rule". This empirical rule of thumb states that an increase of one cubic yard in shorezone volume is accompanied by an increase of one foot in beach width. (2003 Regional Beach Monitoring Program, Annual Report, page 54). For the Oceanside Cell overall, the volume increase was 20 cy/ft with an average shoreline advance or 21 ft, for a volume per square foot value of 0.95 cy/sq ft. The Annual Monitoring also found a local closure depth in the south Carlsbad area that is about -20 ft MLLW (the lower depth of the parallelogram). Using the geometric analysis for nourishment volume, this would similarly require about 1 cubic yard per square foot of nourished beach. Thus the Commission continues to support the range of "v" as being 0.9 to 1.5 cubic yards per square foot of nourished beach, with nourishment required for through full profile depth.

5. Page 19 of the staff report, the following shall be added directly following the second complete paragraph:

> Because the City does not have a definition for bluff edge within its certified LCP, the Commission defines the bluff edge by the regulation 13577 Section (h) (2) of the Commission's Code of Regulations and states:
>
> > 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 face, 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. [emphasis added]
>
> The Commission recognizes that there is a break in the lower slope on the bluff face (approximately 20' MSL contour). However, as defined above, the top of the bluff is located at the 36' MSL contour. The applicant's consultant argues that the bluff edge corresponds with the 20' MSL contour because that is the point where a well defined break in slope occurs and the inclination of the more gently sloping marine terrace deposits increases significantly down to the beach. However, as noted above, the Commission's staff geologist has reviewed the technical reports prepared for the project and indicates that the material in which the bluff is cut has no bearing on the bluff edge determination based on the definition cited above. In other words, a break between the marine terrace deposits and bedrock does not define the bluff edge. Bluffs may be cut in a variety of materials; bedrock, marine terrace, non-marine deposits, ancient sand dune, modern sand dunes; or into combinations of these. However, these cuts or breaks do not necessarily define the edge of bluff. Therefore, using the above-cited definition of bluff edge, the most accurate location of the bluff

edge is at the 36' MSL contour, as previously determined by the Commission on the adjoining property to the north (ref. Appeal A-6-CII-07-17).

6. Page 19 of the staff report, the last paragraph shall be modified as follows:

The Commission recognizes that development on the bluff face exists at several other locations on Tierra Del Oro (ref. Exhibit #6). However, most of these projects occurred before the Commission had a geologist on staff to advise it on the location of the bluff edge; now that the bluff edge has been defined at approximately +36' MSL and given the City's LCP provisions restricting development on the face of the bluff to only public accessways (private accessways are not permitted), these types of projects located beyond the established bluff edge (36' contour) can no longer be found consistent with the City of Carlsbad's certified LCP. For example, in 2004, the City approved a Coastal Development Permit for an addition and remodel of the residence located directly south of the applicant's residence (ref. 6-CII-04-160/Viola). This CDP did not include any improvements beyond the top of the bluff, and adhered to the appropriate stringline requirements; and as such, no appeal of the City's decision was filed by the Commission. In 2005, the City issued another administrative CDP for the adjoining site to the south, which was described on the Notice of Final Action (NOFA) as construction of a pool and spa within existing patio of single-family residence (ref. 6-CII-05-176/Viola). Because the project was approved administratively and because the project description did not include that the development was proposed on a bluff top lot, Commission staff did not identify the development as potentially inconsistent with the certified LCP and an appeal was not filed by the Commission. In reviewing aerial photographs of the surrounding neighborhood, it is apparent that the development on the property south of the subject site is actually out of character with the surrounding neighborhood and should not be used as the "model" by which other development in the area should be based on. As such, Special Condition #1 requires the applicant to submit revised final plans showing the deletion of any/all development proposed past the established 36' MSL contour bluff edge (i.e., the pool, spa, patios, retaining walls, etc.) that cannot be considered ephemeral and capable of being removed. Further, Special Condition #11 requires the applicant to submit, within 60 days of completion of construction, as built plans for the development showing that the development has been completed consistent with the final approved plans.

7. Include attached exhibits # 9 & 10 to the end of the staff report.

Beach Sand Replenishment
In-lieu Fee Worksheet
Address: 5015 Tierra del Oro (Dave Skelly said in his e-mail that this address is wrong, but he did not make any changes in the address to provide correction.
CDP # A-6-CII-08-028 (Moss)

$\mathbf{V_e}$ = Volume of sand to rebuild the area of beach lost due to encroachment by the seawall; based on the seawall design and beach and nearshore profiles (cubic yards)

$\mathbf{V_e} = \mathbf{A_e}$ x v = 945 sq ft. x 0.9 cy/sq.ft. = 850.5 cy

$\mathbf{A_e}$ = The encroachment area which is equal to the width of the properties which are being protected (W) times the seaward e encroachment of the protection (E)

$\mathbf{A_e}$ = W x E = 63ft x 15 ft = 945 sq. ft.

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

E = Encroachment by seawall, measured from the toe of the bluff or back beach to the seaward limit of the protection (ft.)

v = Volume of material required, per unit width of beach, to replace or reestablish one foot of beach seaward of the seawall; based on the vertical distance from the top of the beach berm to the seaward limit of reversible sediment movement (cubic yards/ft. of width and ft. of retreat). The value of v is often taken to be 1 cubic yard per square ft. of beach. If a vertical distance of 40 feet is used for the range of reversible sediment movement, v would have a value of 1.5 cubic yards/square ft. (40 feet x 1 foot x 1 foot/27 cubic feet per cubic yard). If the vertical distance for a reversible sand movement is less than 40 feet, the value of v would be less than 1.5 cubic yards per square foot. The value of v would be less that 1.5 cubic yards per square foot. The value of v will vary from one coastal region to an another. A value of 0.9 cubic yards per square foot has been suggested for the Oceanside Littoral Cell (Oceanside Littoral Cell Preliminary Sediment Budget Report, December 1997, prepared as part of the Coast of California Storm and Tide Wave Study)

$\mathbf{V_w}$ = Volume of sand to rebuild the area of beach lost due to long-term erosion ($\mathbf{V_w}$) of the beach and near-shore, resulting from stabilization of the bluff face and prevention of landward migration of the beach profile; based on the long-term regional bluff retreat rate, and beach and nearshore pr (cubic yards)

EXHIBIT NO. 9
APPLICATION NO.
A-6-CII-08-028
Beach Sand Replenishment Worksheet
1 of 4
California Coastal Commission

$\mathbf{V_w} = \mathbf{A_w}$ x v = 519.75 sq. ft x 0.9 cy/sq.ft. = 467.8 cy

$\mathbf{A_w}$ = The area of beach lost due to long-term erosion is equal to the long-term average annual erosion rate (R) times the number of years that the back beach or bluff will be fixed (L) times the width of the property that will be protected (W) (ft./yr.)

$\mathbf{A_w}$ = R x L x W = 0.33 ft/yr x 25 yrs x 63 ft = 519.75 sq. ft.

R = The retreat rate which must be based on historic erosion, erosion trends, aerial photographs, land surveys, or other acceptable techniques and documented by the applicant. The retreat rate should be the same as the predicted retreat rate used to estimate the need for shoreline armoring

L = The length of time the back beach or bluff will be fixed or the design life of the armoring without maintenance (yr.). For repair and maintenance projects, the design life should be an estimate of the additional length of time the proposed maintenance will allow the seawall to remain without further repair or replacement

$\mathbf{V_b}$ = Amount of beach material that would have been supplied to the beach if natural erosion continued, or the long-term reduction in the supply of bluff material to the beach, over the life of the structure; based on the long-term average retreat rate, design life of the structure, percent of beach quality material in the bluff, and bluff geometry (cubic yards)

$\mathbf{V_b} = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$ = 274 cy (from applicant's submittal; not calculated from the provided equation)

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

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

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

R_{cu} = Predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming no seawall were installed (ft./yr.). This value can be assumed to be the same as R

unless the applicant provides site specific geotechnical information supporting a different value

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

V_t = Total volume of sand required to replace losses due to the structure, through reduction in material from the bluff, reduction in nearshore area and loss of available beach area (cubic yards). Derived from calculations provided above

$V_t = V_b + V_w + V_e$ $= 274 + 467.8 + 850.5 = 1592.3$ cy

M $= V_t \times C = 1592.3$ cy x \$18.23/cy = \$29,027.63

C = Cost, per cubic yard of sand, of purchasing and transporting beach quality material to the project vicinity (\$ per cubic yard). Derived from the average of three written estimates from sand supply companies within the project vicinity that would be capable of transporting beach quality material to the subject beach, and placing it on the beach or in the near shore area

W = 63 ft
E = 15 ft (based on geologic cross-section provided with application
v = 0.9
R = 0.33 ft/yr
L = 25 yrs
S = variable
hs = 14 ft
hu = 24 ft
Rcu = 0.33 ft/yr
Rcs = 0
C = $18.23/cubic yard of sand

$\mathbf{A_e} = \mathbf{W} \times \mathbf{E} = 63 \text{ ft} \times 15 \text{ ft} = 945 \text{ sq. ft.}$

$\mathbf{V_e} = \mathbf{A_e} \times \mathbf{v} = 945 \text{ sq ft.} \times 0.9 \text{ cy/sq.ft.} = 850.5 \text{ cy}$

$\mathbf{A_w} = \mathbf{W} \times \mathbf{R} \times \mathbf{L} = 63 \times 0.33 \times 25 = 519.75 \text{ sq. ft.}$

$\mathbf{V_w} = \mathbf{A_w} \times \mathbf{v} = 519.75 \text{ sq. ft} \times 0.9 \text{ cy/sq.ft.} = 467.8 \text{ cubic yards}$

$\mathbf{V_b} = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$

$\mathbf{V_b} =$ 274 cubic yards – based on information provided by the applicant

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

$\mathbf{V_t} = 274 + 467.8 + 850.5 = 1592.3$ cubic yards

$\mathbf{M} = \mathbf{V_t} \times C$

$\mathbf{M} = 1592.3 \text{ cy} \times \$18.23/\text{cy} = \$29,027.63$

B

CROSS SECTION A-A'

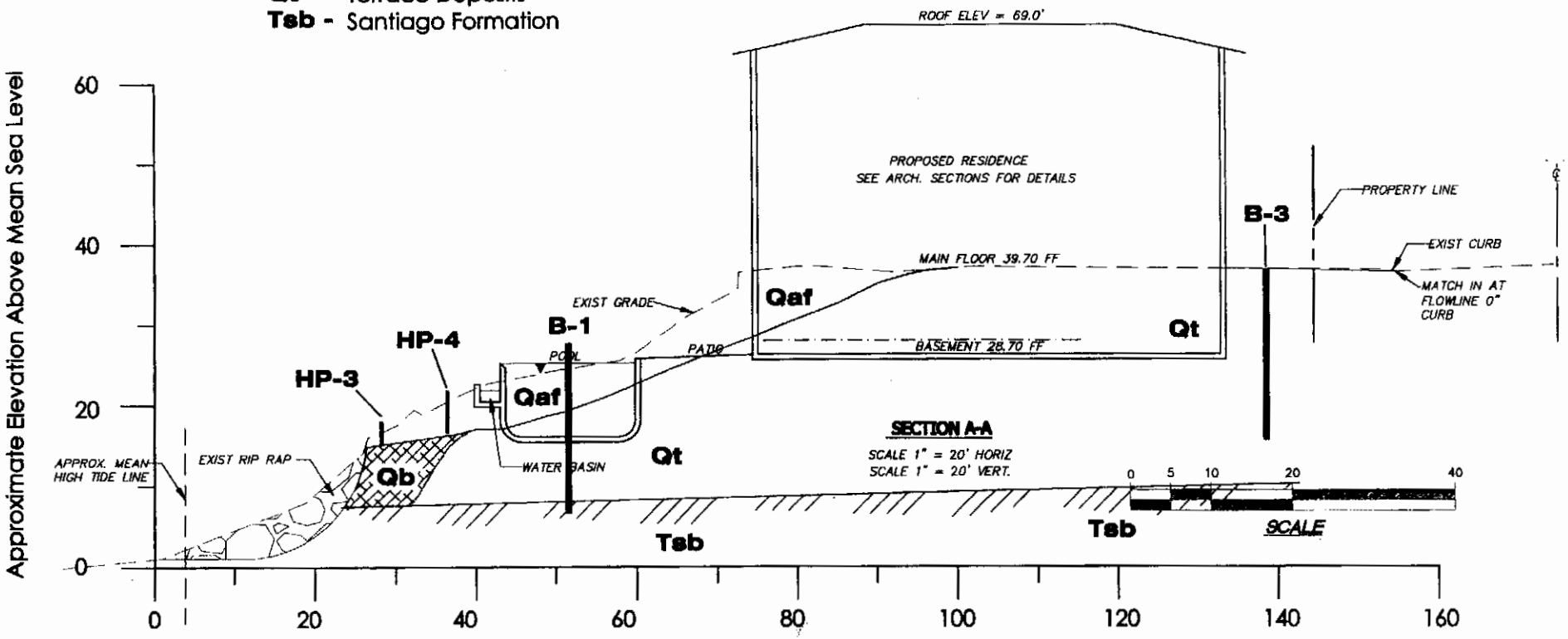
A

Moss Residence
5015 Tierra Del Oro
Carlsbad, CA.

A

Geologic Legend

Qaf - Artificial Fill
Qb - Beach Deposits
Qt - Terrace Deposits
Tsb - Santiago Formation



Relative Horizontal Distance (Feet)
Scale: 1" = 20'
(Horizontal and Vertical)

Figure No. VII
Job No. 07-9342

NOTE: This Cross Section is not to be used for legal purposes. Locations and dimensions are approximate. Actual property dimensions and locations of utilities may be obtained from the Approved Building Plans or the "As-Built" Grading Plans.

Geotechnical Exploration, Inc.

April 2007

07-9342-xs

F96

FRIDAY, ITEM 9B

DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project:
Appeal No. A-6-CII-08-28 (Moss, Carlsbad). Appeal of a permit to demolish existing home and construct new home, swimming pool and spa on a bluff top lot at 5015 Tierra del Oro, City of Carlsbad.

Date and time of receipt of communication:
July 28, 2008 @ 11am

Location of communication:
La Jolla, CA

Type of communication:
In person meeting

Person(s) in attendance at time of communication:
Susan McCabe

Person(s) receiving communication:
Patrick Kruer

Detailed substantive description of the content of communication:
(Attach a copy of the complete text of any written material received.)
I received a briefing from Susan McCabe in which she informed me that the applicants disagree with Special Condition #1 regarding the location of bluff edge and a requirement to remove stairs over an existing revetment. Staff says the bluff edge is at the 34' contour and the applicants' expert says the edge is at the 20' contour. According to Ms. McCabe, the City has approved other projects in the same area with a more seaward bluff edge determination. The applicants will have to redesign the entire project if the staff recommendation is adopted. The applicants have worked out all other issues with staff and have agreed to pay into the Regional Sand Mitigation Fund for improvements made to the existing rock revetment by a prior property owner.

Date: 5/29/08

Signature of Commissioner: Patrick Kruer

F9b

DISCLOSURE OF EX PARTE COMMUNICATIONS

Name or description of project:	Appeal No. A-6-CII-08-28 (Moss, Carlsbad).
Date/time of receipt of communication:	July 25, 2008; 10:00 am
Location of communication:	Palo Alto
Type of communication:	In person
Person(s) initiating communication:	Susan McCabe

Detailed substantive description of content of communication:
The applicants disagree with Special Condition #1 regarding the location of bluff edge and a requirement to remove stairs over an existing revetment.

Staff says the bluff edge is at the 34' contour and the applicants' expert says the edge is at the 20' contour. The applicants contend that the City has approved other projects in the same area with a more seaward bluff edge determination. The applicants will have to redesign the entire project if the staff recommendation is adopted.

The applicants have worked out all other issues with staff and have agreed to pay into the Regional Sand Mitigation Fund for improvements made to the existing rock revetment by a prior property owner.

7/29/08
Date

Signature of Commissioner

McCabe & Company
Government Affairs Consulting

10520 Oakbend Drive
San Diego, CA 92131
(310) 463-9888
Fax (858) 368-9722

1121 L Street, Suite 100
Sacramento, CA 95814
(916) 553-4088
Fax (916) 553-4089

F 9b

Patrick Kruer, Chair
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

August 1, 2008

SUBJECT: Item F9b
A-6-CII-08-028
5015 Tierra Del Oro, Carlsbad (San Diego County)

Dear Chairman Kruer,

We are writing on behalf of the applicants, Steven and Janet Moss, in response to the staff report for the appeal of the above-referenced coastal development permit for the demolition of an existing home and construction of a 6,755 sq. ft. single-family home, including a 2,366 sq. ft. basement, swimming pool, spa and patio on a 13,650 sq. ft. blufftop lot in the City of Carlsbad. The home will be constructed in accordance with the structural stringline, consistent with past Commission actions in the area.

The project also involves after-the-fact authorization for expansion of a rip rap revetment carried out by a previous property owner in the 1980s and retention of a pre-coastal stairway to the beach. The applicant is willing to pay a sand mitigation fee in order to address the impacts of the existing revetment.

We appreciate the hard work of staff in analyzing the issues involved in this appeal. Since the Substantial Issue determination in June 2008, we have worked with staff to provide additional information and respond to the issues raised by staff. While we have reached agreement on 16 of the 17 conditions, we are in disagreement with the imposition of Special Condition 1 (Revised Final Plans), which would require development to be set back from staff's bluff edge determination at the 36' contour, rather than the City-approved bluff edge determination at the 20' contour. The condition also requires the removal of a pre-coastal stairway segment that extends over the existing riprap. Special Condition 1 significantly affects the siting of the applicants' home and accessory improvements and determines the feasibility of this project. Specifically, Special Condition 1 requires the following changes to the project plans:

> *a. Any proposed accessory improvements (i.e., decks, patios, walls, etc.) located seaward of the identified bluff edge on the bluff face shall be detailed and drawn to scale on the final approved site plan. Such improvements shall only be "at grade" and capable of being removed without significant landform alteration.*
> *b. The deletion of the pool, spa, patios and retaining walls on the face of the bluff that involve grading of the bluff and the stairs on the top of the riprap revetment.*

Letter of Response

11

Staff has determined the bluff edge to be sited at the 36' contour, while the applicants' geotechnical consultant (Geotechnical Exploration, Inc.), the City of Carlsbad, and a third party review being carried out by GeoSoils, Inc. (to be submitted under separate cover) contend the bluff edge to be sited at the 20' contour. Use of staff's interpreted bluff edge would require the applicants' home, pool and patio to be substantially redesigned and relocated as much as 35' further inland, as depicted in Exhibit A.

Staff asserts that the bluff edge was improperly sited in the City's approval of the project. The geotechnical report prepared for this project by Geotechnical Exploration, Inc. dated April 20, 2007 found the bluff edge to be located at approximately the 20' contour. This is the point at which a well-defined break in slope exists and the inclination of the more gently sloping marine terrace deposits increases greatly to the west. The consultant's determination is consistent with past bluff edge determinations approved by the City in the subject area, including the property immediately downcoast.

Staff acknowledges that development exists beyond the 36' contour at several other properties along Tierra del Oro. In fact, there are at least 4 cases in the last 5 years where the City has approved development and determined the top of bluff to be sited at a more seaward contour than staff asserts, as Mr. and Mr. Moss are now requesting. None of these coastal development permits were appealed until 2007, when the Commission appealed the project next door (A-6-CII-07-017, Riley) in order to evaluate the City's stringline application. Staff attributes the lack of appeals to the fact that there was no technical expert on staff with the Coastal Commission in years past. Nonetheless, the City used its own technical expertise to evaluate the geotechnical reports for each of these projects and consistently determined the bluff edge to be located at or near the 20' contour.

Specifically, the City has approved coastal development permits with a more seaward top-of-bluff determination on the adjacent property at 5019 Tierra del Oro--CDPs 04-11 and 05-20 (Viola/Casa Di Mare) and at 5035 Tierra del Oro (McGuire)--CDP 04-07, which were not appealed to the Coastal Commission. The Commission did appeal a city-approved project at 2649 Ocean Street (Kiko), which was ultimately approved with a 20' contour (A-6-C-II-03-26).

As shown in the attached aerial photograph (Exhibit B), approval of the Moss project as proposed will result in development that is wholly in keeping with the predominant line of development along Tierra del Oro and will allow for equitable use of the subject property. The staff report recognizes this on page 10,

> *"The proposed development is located in an already developed single family residential neighborhood. Most of the oceanfront residences have decks, patios and other structures which extend seaward of the principal residential structure. Many of the residences have walkways which extend to the bluff edge. Some residences have platforms at the bluff edge and private beach access stairways which extend down the bluff face to the beach. Residences on either side of the subject site have walkways that extend down the bluff face and lead to the beach."*

The staff report states that the increased setback is required to address both bluff protection and public view issues. However, the geotechnical report prepared by Geotechnical Exploration, Inc. concludes that the siting of the residence is appropriate and does not recommend any further

concludes that the siting of the residence is appropriate and does not recommend any further setback. Additionally, the pattern of development has already been established in the subject area and the Moss residence will be sited in line with the adjacent structures. Therefore, the proposed residence and accessory improvements will not affect public views.

Staff argues that the stairway segment that traverses the riprap was removed and replaced at the time the riprap revetment was improved in the 1980s. However, no evidence is offered to substantiate that claim. Mr. and Mrs. Moss did not own the property at that time and do not have any knowledge of the stairs being replaced. The stairs extend over the riprap and are not supported in any way by the revetment. The applicants believe the revetment improvements were carried out in a manner that did not require removal of the stairway (e.g. rock placement around stair footings). As such, the applicants request to retain the entire stairway as part of the current application.

We ask that you remove Special Condition #1, which would allow the City-approved 20' contour to be applied as the bluff edge for purposes of establishing development limits and would allow the entire stairway to be retained in its current configuration. The project should be approved as proposed for the following reasons:

- Consistent with past local approvals and City's interpretation of LCP;
- Consistent with pattern of development in surrounding area;
- No adverse visual impacts;
- Will not create or contribute to geologic instability.

Thank you for your consideration of this matter.

Sincerely,

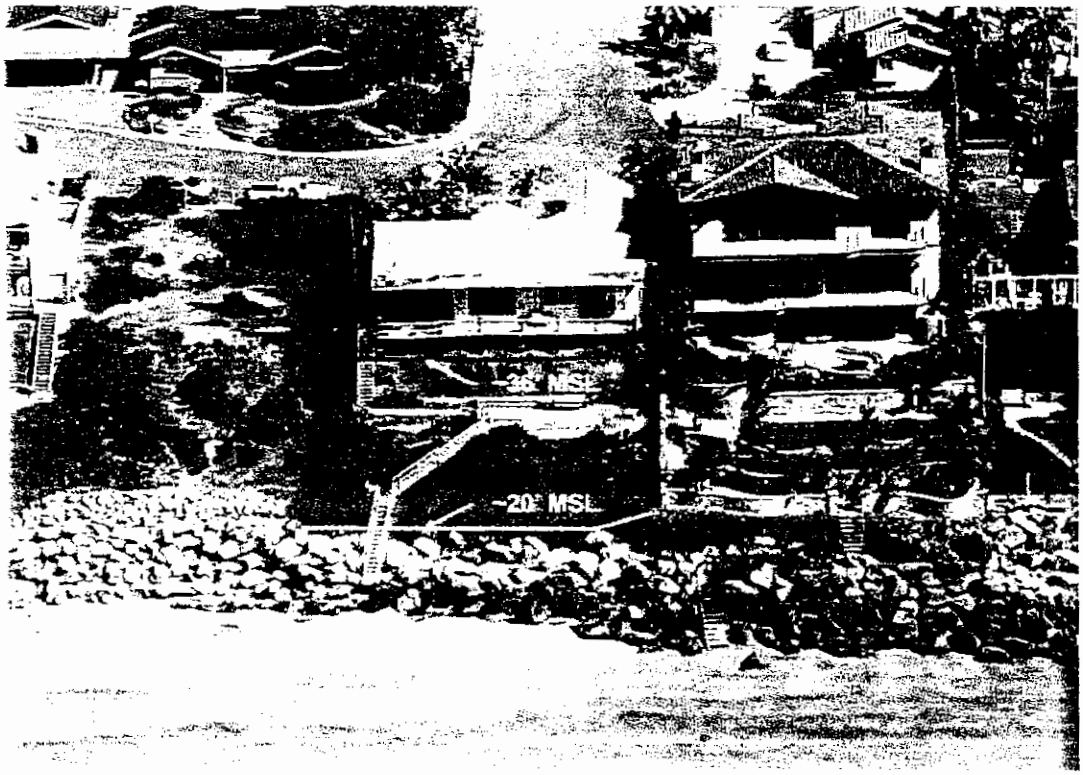
SMc

Susan McCabe

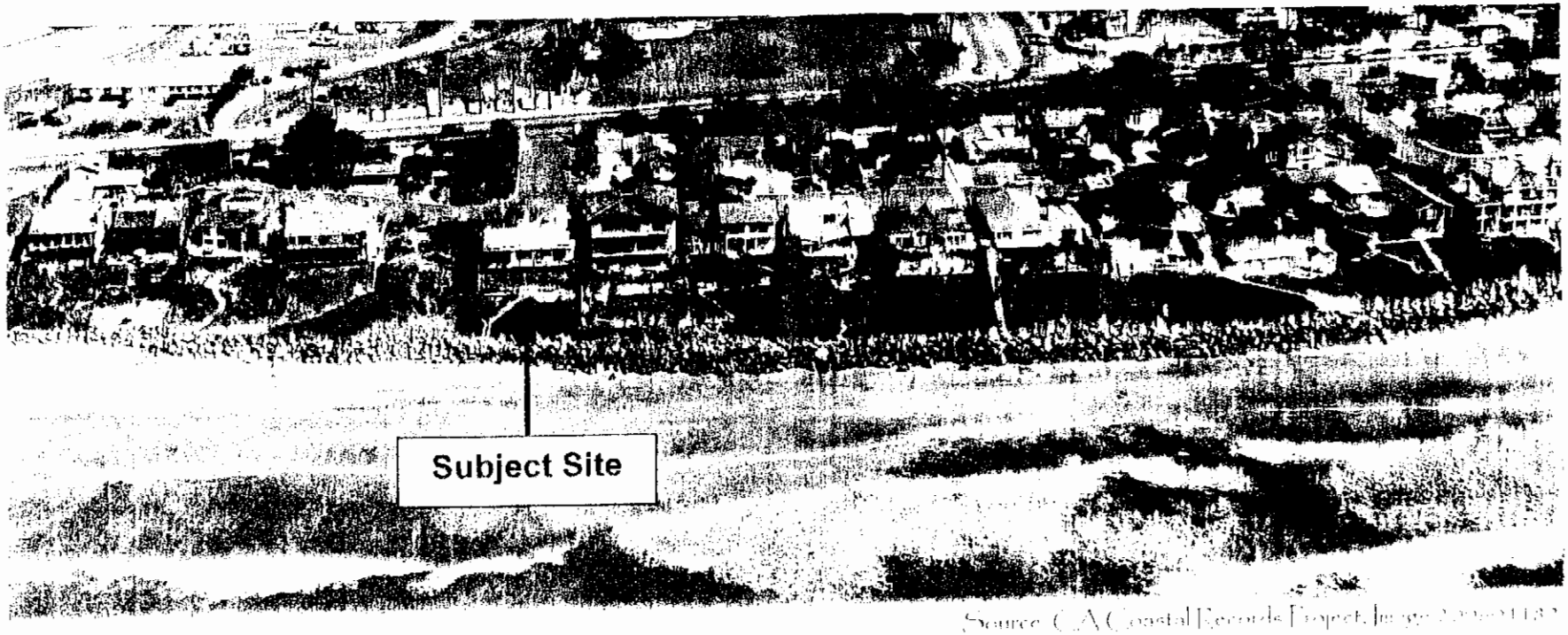
Attachments

cc: Coastal Commissioners
San Diego Area District Staff
Steven and Janet Moss, applicant

Aerial Comparison of 20' Contour vs. 36' Contour



Pattern of Development along Tierra del Oro, Carlsbad



Source: CA Coastal Records Project, Image

F9b

GeoSoils, Inc.

Geotechnical • Geologic • Coastal • Environmental

5741 Palmer Way • Carlsbad, California 92010 • (760) 438-3155 • FAX (760) 931-0915

August 4, 2008

W.O. S5738-SC

Mr. and Mrs. Steven Moss
23679 Calabasas Road, Suite 360
Calabasas, California 91302

Subject: Peer Review, Coastal Bluff Edge, 5015 Tierra Del Oro Street, Carlsbad, California, APN 210-020-15-00

Dear Mr. and Mrs. Moss:

In accordance with your request and authorization, GeoSoils, Inc. (GSI), has performed an independent peer review regarding the coastal bluff edge at the subject site. The scope of our services has included a review of the referenced documents in the Appendix, a field review of existing conditions at the site and vicinity, analysis of data, and preparation of this peer review. GSI has not performed any direct subsurface investigation of the site, as our scope was limited to this bluff edge peer review only, and not an evaluation of the slope stability, setbacks, or other geotechnical conditions at the site.

SITE LOCATION/EXISTING CONDITIONS

Briefly, the rectangularly-shaped site is located at 5015 Tierra Del Oro Street, in Carlsbad, San Diego County, California. The level portion of the pad fronts on Tierra Del Oro Street, at an approximate elevation of about 38 to 39 feet Mean Sea Level (MSL). A slope descends to the west from the level pad area at an inclination of about 1½ :1 (h:v), and flatter, where it intersects a west descending rip-rap lined slope, until the beach is encountered further west. According to the plans (see the Appendix), the "boulder line" is shown at an approximate elevation ranging from 13 to 22 feet MSL. The reader is referred to Geotechnical Exploration, Inc. (GEI, 2007), for a more comprehensive discussion of site conditions.

BLUFF CLASSIFICATION

Emery and Kuhn (1982) developed a global system of classification of coastal bluff profiles, and applied that system to the San Diego County coastline from San Onofre State Park to the southerly tip of Point Loma. Emery and Kuhn (1982), designated this portion of the coast as"Type C (d)," as the surficial deposits are relatively thick with respect to the underlying bedrock. The letter "C" designates coastal bluffs having a resistant geologic

Response from Applicant's Consultant

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formation at the bottom of the bluff and less resistant cap on the remaining height of the bluff. The relative effectiveness of marine erosion compared to subaerial erosion of the bluff produces a characteristic profile. Extremely rapid marine erosion produces a less gently-sloping and steeper upper bluff. The letter "(d)" indicates that the long-term rate of subaerial erosion is much less than that of marine erosion. The purpose of presenting the above classification is to emphasize that the components of the slope consist of the gentle upper part, and the lower more resistant, and steeper, formational part.

Per the California Coastal Act (California Code of Regulations, Title 14, Section 13577 (h) (2), the California Coastal Commission (CCC), uses the following definition of bluff edge: "...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 face, 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..."

CCC (2003) indicates that best results may be obtained by finding the point at which the second derivative, the rate of change in steepness, of the topographic profile increases sharply. Further, CCC (2003) states: "The position of the bluff edge may be changed by a variety of processes, natural and anthropogenic.....placing artificial fill on or near the bluff edge generally does not alter the position of the natural bluff edge; the natural bluff edge still exists, buried beneath fill, and the natural bluff edge is used for purposes of defining development setbacks."

DISCUSSION

At the subject site, the cliff-forming formational unit is covered by anthropogenic improvements, as indicated above. However, based on nearby exposures to the north, this natural cliff-forming unit shows an obvious accelerated rate of change in steepness, when contrasted to the topographic profile. Further, Cross Section A-A' (GEI, 2007), which is based on GEI's direct subsurface information, also depicts a buried profile. Both the GEI profile, and our field observations indicate that the accelerated rate of change of the slope lies within the anthropogenic improvements covering the bluff, at an elevation of about 20 feet MSL, or lower.

CONCLUSIONS

Based on our review of site conditions, as well as the referenced documents, it is GSI's opinion that the "the rate of change in steepness" of the topographic profile is covered by anthropogenic improvements, and exists at an elevation of about 20 feet MSL or lower. Thus, according to the CCC, the natural bluff edge is coincident with the rate of change in steepness of this buried topographic profile, and not at an elevation significantly higher

than 20 feet MSL. Accordingly, GSI is in general agreement with GEI regarding the natural bluff edge.

LIMITATIONS

The materials observed on the project site and utilized for our evaluation are believed representative of the area; however, soil and bedrock materials vary in character between excavations and natural outcrops or conditions exposed during mass grading. Site conditions may vary due to seasonal changes or other factors.

Inasmuch as our study is based upon our review and engineering analyses, the conclusions are professional opinions. These opinions have been derived in accordance with current standards of practice, and no warranty, either express or implied, is given. Standards of practice are subject to change with time. GSI assumes no responsibility or liability for work or testing performed by others, or their inaction; or work performed when GSI is not requested to be onsite, to evaluate if our recommendations have been properly implemented. Use of this report constitutes an agreement and consent by the user to all the limitations outlined above, notwithstanding any other agreements that may be in place. In addition, this report may be subject to review by the controlling authorities. Thus, this report brings to completion our scope of services for this portion of the project.

CLOSURE

We appreciate this opportunity to be of service. Should you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

GeoSoils, Inc.

John P. Franklin
Engineering Geologist, CEG 1340

Reviewed by:

David W. Skelly
Civil Engineer, RCE 47857

JPF/DWS/jh

Attachment: Appendix - Selected References

Distribution: (2) Addressee
(2) McCabe and Company, Attention Ms. Anne Blemker

APPENDIX

SELECTED REFERENCES

California Coastal Commission, 2007, Staff report and recommendations on appeal: by Toni Ross, appeal no. A-6-CII-08-028, applicant Steve and Janet Moss, F 9b, report dated July 24, hearing August 6-8.

_____, 2003, Establishing development setbacks from coastal bluffs; Memorandum by Mark Johnsson, W11.5, dated January 16.

Eisenberg, L.I., 1985a, Depositional processes in the landward part of an Eocene tidal lagoon, northern San Diego County in On the manner of deposition of Eocene strata in northern San Diego County, Abbott, P.L. ed.: San Diego Association of Geologists Guidebook, 98 pp.

_____, 1985b, Pleistocene faults and marine terraces, northern San Diego County, in Abbott, P.L., ed., On the Manner of Deposition of the Eocene Strata in Northern San Diego County: San Diego Association of Geologists.

Emery, K.O., and Kuhn, G.G., 1982, Sea cliffs: their processes, profiles, and classification: Geological Society of America Bulletin, v. 93, no 7.

Geotechnical Exploration, Inc., 2007, Report of preliminary geotechnical investigation and geologic reconnaissance, proposed Moss residence, 5015 Tierra Del Oro Street, Carlsbad, California, job no. 07-9342, dated April 20.

Kennedy, M.P., 1975, Geology of the San Diego metropolitan area, California; California Division of Mines and Geology, Bulletin 200, Section A, Western San Diego Metropolitan Area, Del Mar, La Jolla, and Point Loma, 7½ minute quadrangles.

San Diego Municipal Code, Land Development Code, 2004, Coastal bluffs and beaches guidelines, August posting.

Unknown, undated, Boundary and topographic survey, Moss residence, 5015 Tierra Del Oro Street, Carlsbad, California, no scale shown.

F96

Toni Ross

From: David Skelly [dskelly@geosoilsinc.com]
Sent: Tuesday, July 29, 2008 2:40 PM
To: Toni Ross; Lee McEachern; Ann Blemker; Steve Moss; Susan McCabe
Subject: Re: Sand Mitigation Worksheet

Toni

Thank you for allowing me to provide supporting information as to the variables in the sand fund calculation. I believe that 2 of the variables for Lesley's calculation are incorrect. These variables are the width of the structure (revetment) E and the "difficult to measure" v.

1. Attached please find a blow up of the geologic cross section (Moss-width.pdf). It should be noted that the actual width is arguably 10 feet but clearly no wider than 11 feet. The additional 4 feet added by coastal was actually the extension of the structure slope line or envelope NOT actual encroachment or use of beach. Rocks are not like sand they have a vertical dimension, in this case ~ 3 feet. You can count the little squares, they are 1 foot intervals.

Therefore, we argue that E is = 11 feet

2. As far a "v" is concerned I have attached two documents that support the use of 0.7 cy/sf. NOT the 0.9 cy/sf used by Lesley. First I respectfully point out that in my review of the CCSTWS Oceanside Littoral Cell Report December 1987 (note the CCC has the reference as 1997 in the "in lieu fee work sheet") there is a wide range of values from 0.3 to 1.5, it appears the 0.9 is an average of the range. I have attached Figure 2-18 from the 1987 (CCSTWS-Sand.pdf) study which given the shoreline setting of south Carlsbad (closure at about 40 feet) justifies the use of 0.7 cy/sf.

In addition, this value is of 0.7 is further verified for this site in CCSTWS 1991 (a portion of which is attached as CCSTWS-v). I have provided the pages that discuss the sand volume changes in detail, I would strongly argue that this report suggest that a value of 0.67 cy/ft, which when used per foot of retreat is 0.67 cy/sf see the last page of the attached.

Therefore, we argue that E is 0.7 cy/sf

This makes Ve = (63)(11)(0.7) = 485

This makes Vw = (.33)(25)(63)(0.7) = 384

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Vb remains the same Vb = 274

Vt = 1,144 at $18.23 per yard = $20,855

David W. Skelly
(760) 438-3155
www.geosoilsinc.com

Toni Ross wrote:

> Dave,
> Our engineer Lesley went through and completed the sand mitigation worksheet, using the typical baseline data, and the site specific data you provided in your submitted worksheet. There were some discrepancies on some of the calculations. Please review and either concur with the numbers on Lesley's worksheet, or provide comments as to why you feel your version is more correct.
>
> **Thanks!**
> Toni Ross
> Coastal Program Analyst
> **California Coastal Commission**

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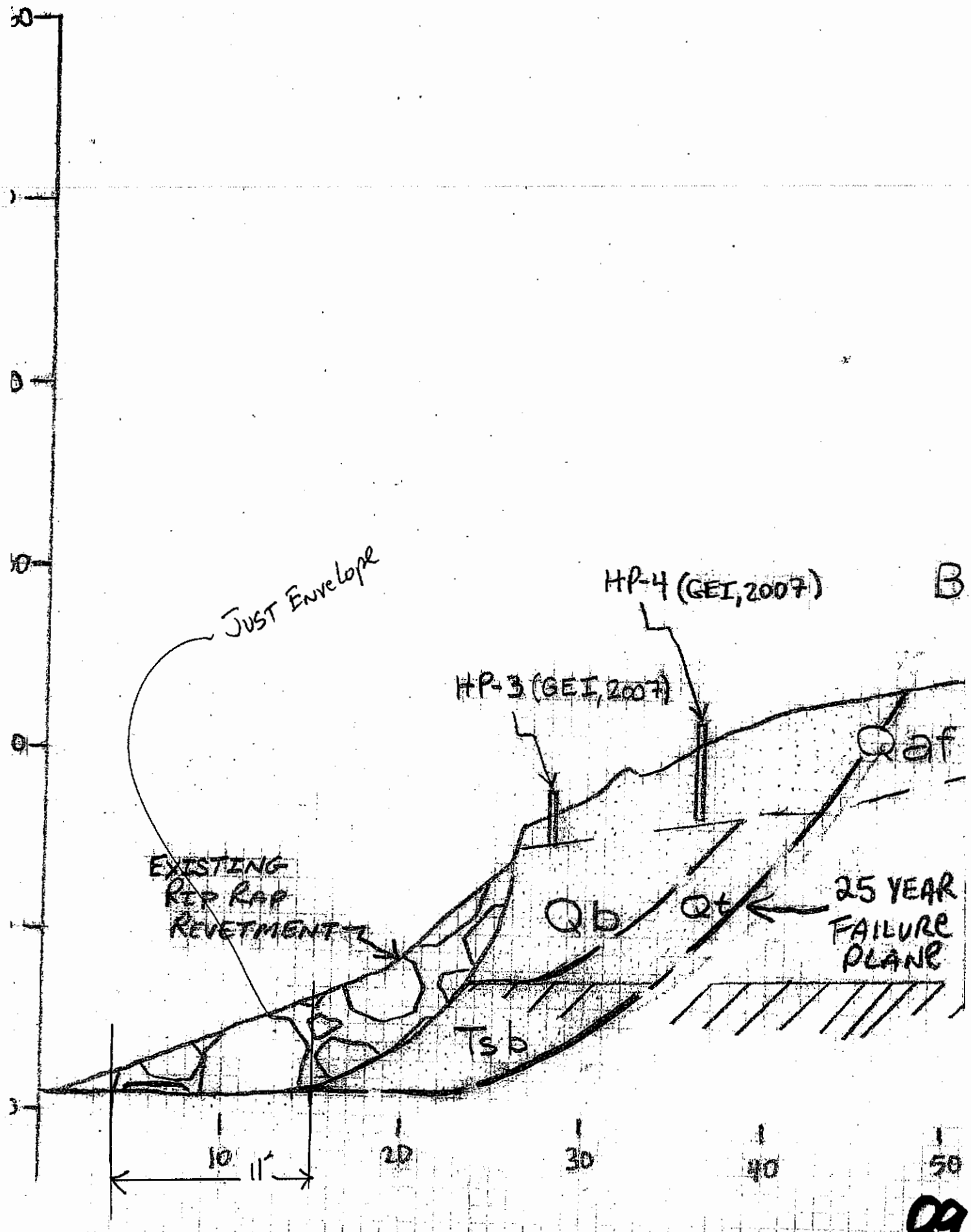
JUST Envelope
HP-4 (GEI, 2007)
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HP-3 (GEI, 2007)
Qaf
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RIP RAP
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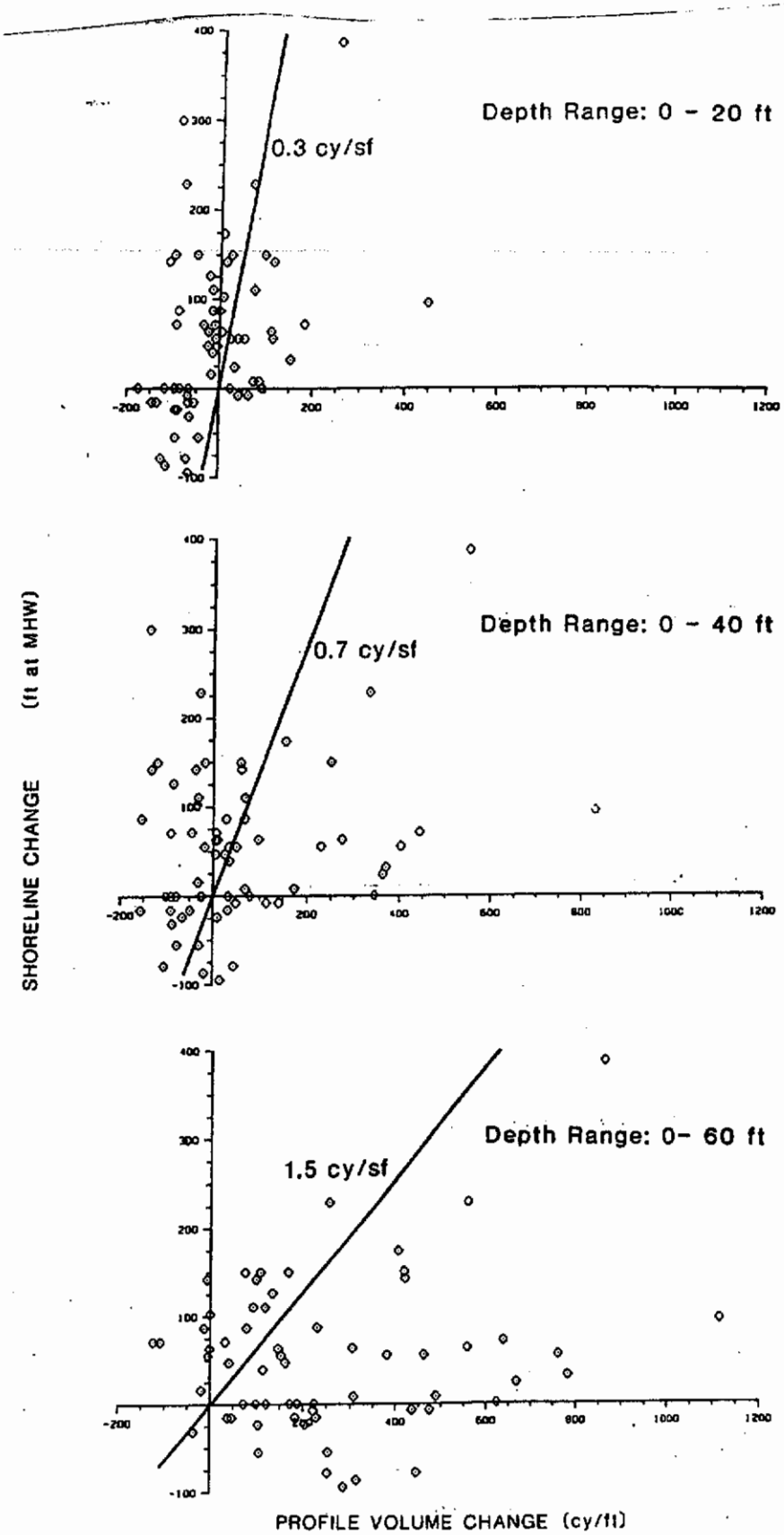

Figure 2. Scatter Plots of Shoreline Changes vs. Profile Changes

US Army Corps
of Engineers
Los Angeles District

Coast of California
Storm and Tidal Waves Study

State of the Coast Report
San Diego Region

Volume I — Main Report
Final — September 1991

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(6) The Oceanside shorelines are characterized by the relatively flat nearshore slopes of 200:1 and beach face slope of 35:1. The flatter nearshore slopes appear to be the product of possible offshore sand deposits resulting from the ongoing sediment nourishment activities.

(7) The Camp Pendleton Subreach has an average near shore slope of 170:1 and an average beach face slope of 300:1.

(8) The San Mateo -Dana Point coastal area has an average nearshore slope of 160:1 and beach face slope of approximately 25:1.

3.3.4 Sand Volume Changes

In the planning and design of coastal projects, it is useful to know the magnitude of sand volume changes at a given location due to wave action. This type of information is highly desirable for the volumetric design of beach nourishment and the functional design of coastal structures such as jetties, groins and revetments. The prevailing practices in assessing the volume changes in a given beach profile based on surface area change, is to assume that one cubic yard of volume change in the entire profile corresponds to one square foot of beach surface change above the shoreline. This empirical rule was first suggested in 1957 (U.S. Army Corps of Engineers, Shore Protection Planning and Design Manual, 1957). This rule of thumb, provides a handy tool in sediment budget and sand nourishment studies though its validity has yet to be checked.

In order to examine the validity of the above simple rule correlating one square foot (sf) of beach surface area change to one cu yd/ft of profile sand volume change in the San Diego Coastal Region, changes in beach surface area and volume changes presented in appendices C, D, and F were further analyzed to establish needed site specific relationships between volume changes and shoreline movement.

Figures 3-8 to 3-25 show the plots summarizing this analysis where the effect of the MHHW shoreline movements (erosion/ accretion) were correlated to the corresponding surveyed profile volume changes for all the three cells and six subreaches of the study. The volume changes in the above analysis refer to that portion extending from the profile base line to water depths of MHHW, MSL, -10 ft, 30 ft, and -40 ft deviation (from MLLW) where as the beach surface area or shoreline change refer to the (MHHW) line. The data shown in Figures 3-8 through 3-16 covers all the measured profiles data presented in appendix F while Figures 3-17 through 3-25 consider only extreme events causing maximum shoreline movements and volume changes. Shown also in the above figures, are the computed volume change to shoreline movement ratio, as obtained from the best-fit regression lines plot. Table 3-6

summarizes the results of this analysis for the selected cells and subreaches of the San Diego Region shorelines. Data presented in Table 3-6 indicate that the volume change/shoreline movement (V/S) ratio varies for different depth ranges in the profile. The spacial variation of V/S along the entire length of the San Diego shoreline is rather uniform to water depths of -10 ft elevation (MLLW). For water depths deeper than 10 feet (MLLW) and considering all data points, the correlation between volume and shoreline change is not very well defined except for the Oceanside Harbor Subreach (subreach 4 of Figure 3-14). If only the extreme events are considered, a more defined correlation exists between V and S for water depth up to -40 ft (MLLW), as shown in Figures 3-17 to 3-25 and Table 3-6.

It should be noted that the accuracy of the estimated volume change for water depths greater than 10 ft (MMLW), is a function of the survey method and conditions. It is usually expected to experience more survey errors in this depth range (> 10 ft) and this could have an impact on the established relationships. It is therefore recommended to limit the results of this analysis to water depths ≤ 10 ft below MLLW. The results can be applied to estimate the required nourishment rates for preserving a given beach width.

OCEANSIDE CELL

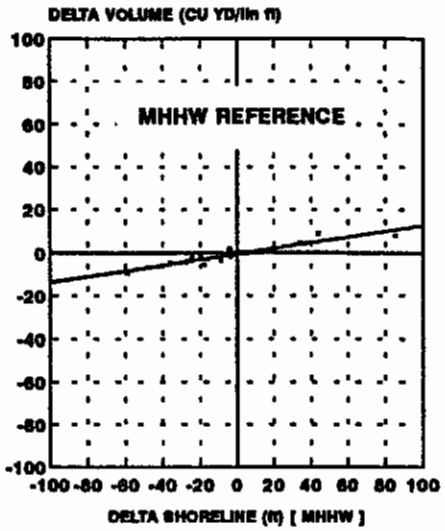
Carlsbad

Sub Reach 3

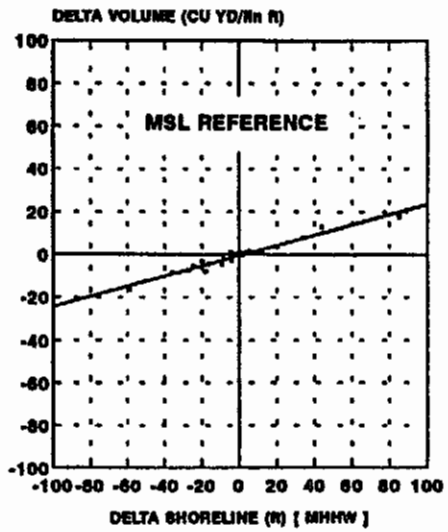
VOLUME

vs

SHORELINE CHANGE



SLOPE IS .133



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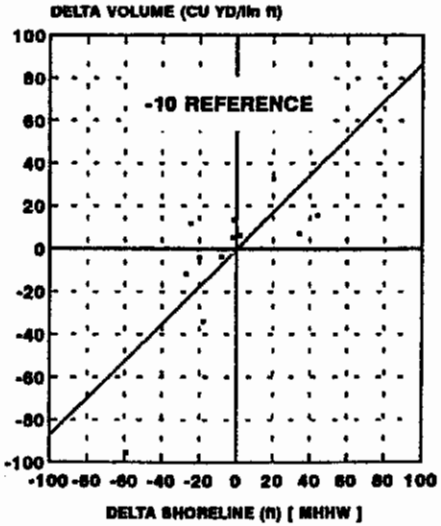

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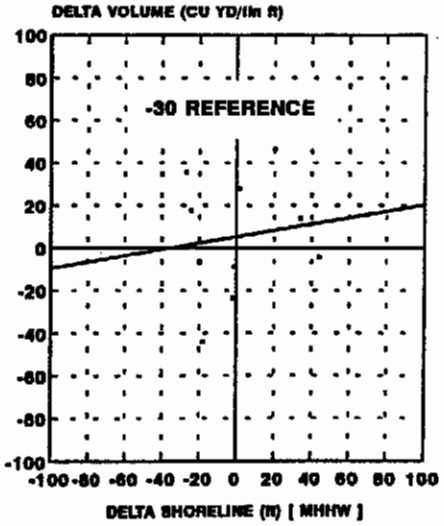
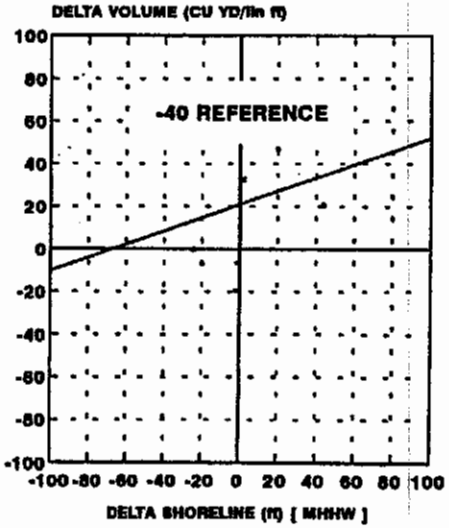


SLOPE IS .149



SLOPE IS .312

FIGURE 3-13

(3) The seasonal sediment volume changes along the Oceanside Cell presents a good correlation with the shoreline movements as shown in Figure 3-19. Such correlation exists for volume changes occurring along profile lengths extending to various water levels (MHHW, MSL, -10 ft, -30 ft and -40 ft). The results of the analysis shown in Figure 3-19 indicate that the rule correlating one square foot of beach area change to volume change is as follows:

Ratio of Volume to Shoreline Change (V/S) cu yd/ft	Elevation of Computed Volume Change ft
0.20	MHHW
0.29	MSL
0.65	-10 ft (MLLW)
0.62	-30 ft (MLLW)
0.67	-40 ft (MLLW)

3.3.5 Impact of the January 1988 Storm

A major storm attacked the Coast of California during the period January 16 to 19, 1988. The peak of the storm arrived on January 18, 1988. Figure 3-26 shows the intensity of the storm as was measured in both deep water (Begg Rock) and nearshore (Oceanside Beach). The CCSTWS responded to this significant event by deploying a beach profile survey team to survey the San Diego Region profiles. In addition, a set of aerial photographs were taken to cover the extent of the damage and available wave gaging records were analyzed to assess the storm intensity. The storm which was originated in the North Pacific, generated winds in excess of 50 miles per hour with waves approaching the Southern California and the San Diego shorelines from a westerly direction. The storm is estimated to be at least a 100 year event. The storm has resulted in major damages and loss of beaches.

Beach Erosion and Sand Movement

Two special survey sets were conducted by the CCSTWS to assess the effect of the storm on the shoreline and sand movements along the San Diego Region study area. The first survey was conducted during January 1988 and the second during November 1989 and were used to assess the storm damage and to investigate possible beach profile recovery. The results of these surveys and their analysis are included in Appendices B, C, and F. The pre-storm survey set which was completed for the San Diego shorelines during September 1987, was selected as a reference survey set to analyze the pre and

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

Staff: Toni Ross-SD
Staff Report: July 24, 2007
Hearing Date: August 6-8, 2007

F 9b

STAFF REPORT AND RECOMMENDATION ON APPEAL

LOCAL GOVERNMENT: City of Carlsbad

DECISION: Approval with Conditions

APPEAL NO.: A-6-CII-08-028

APPLICANT: Steve and Janet Moss

DESCRIPTION: The demolition of a 2,100 sq. ft. home and construction of a 6,755 sq. ft. single-family residence including a 2,366 sq. ft. basement, an infinity edge swimming pool, spa and patio. Also proposed is improvements made to an existing revetment (after-the-fact) and retention of the private access stairway situated on top of the existing revetment on a 13,650 sq. ft. blufftop lot

SITE: 5015 Tierra Del Oro, Carlsbad (San Diego County).

APPELLANTS: Commissioner Sara Wan, Commissioner Pat Kruer

STAFF NOTES:

At its June 12, 2008 hearing, the Commission found Substantial Issue exists with respect to the grounds on which the appeal was filed. This report represents the de novo staff recommendation.

Summary of Staff's Preliminary Recommendation:

Staff recommends the Commission approve the de novo permit with several special conditions. The most prominent concerns associated with this development are related to alteration of landforms and encroachment along the shoreline, facilitated by development being proposed beyond the bluff edge on the face of the bluff. The bluff edge was sited incorrectly in the applicant's Geotechnical Report; this siting of the bluff edge allows for development on the face of the bluff, beyond that permitted by the City of Carlsbad's LCP. As proposed, the pool, spa and various patios are located beyond staff's interpretation of the bluff edge on the face of the bluff and will involve substantial alteration of landforms, inconsistent with the requirements of the certified LCP which only allows public access facilities and at-grade structures on the bluff face.

Another concern raised is the permit history for the existing revetment. The original construction of the revetment was prior to the Coastal Act. However, the revetment was substantially improved sometime between 1979 and 1987, without benefit of a Coastal Development Permit. Further, because no permit review was completed at this location, the placement and necessary size of the revetment has not been reviewed by the Commission, nor has an appropriate sand mitigation fee been provided as mitigation for impacts on shoreline sand supply resulting from the improved revetment.

As such, several special conditions have been recommended. Special Condition #1 requires the applicant to submit revised final plans showing removal of all development that cannot be considered ephemeral or capable of being removed from any portion of the site located west of the bluff edge as determined by the Commission's staff geologist (~34' MSL). Because the improvements to the revetment have not been previously reviewed, Special Condition #16 requires the applicant to pay a sand mitigation fee for the quantifiable impacts on shoreline sand supply associated with the revetment improvements. Several Special Conditions (#'s12-15) address the management, monitoring and future improvements associated with the existing revetment and a condition that states that in the event of a bluff failure, if any accessory structures are threatened, those structures must be removed, instead of allowing for additional shoreline protection structures. Special Condition #6 requires the applicant to limit construction schedules and/or staging areas to times and locations that will not impact the public's access to the beach.

Other special conditions on the project require the submittal of drainage plans indicating all runoff to be filtered through vegetation or other filtering media and revised landscape plans showing the use of native, drought tolerant and non-invasive plants. Special Condition #3 requires the applicant to adhere to all conditions imposed by the City of Carlsbad's Special Conditions. Special Condition #2 requires the applicant to assume risk and liability for any and all hazards associated with this subject site. Special Condition #5 requires the applicant to seek Coastal Commission approval for any future development proposed at this location in the form of an amendment request. Finally Special Condition #4 requires the applicant to record a Deed Restriction, including the provisions/conditions required by this Coastal Development Permit.

Standard of Review: Certified Carlsbad LCP and the public access and recreation polices of the Coastal Act.

SUBSTANTIVE FILE DOCUMENTS: Certified City of Carlsbad Mello II LCP; City of Carlsbad Staff Report for CDP #05-46 dated January February 6, 2008; City of Carlsbad Resolution No. 6371; Geotechincal Report by Geotechnical Investigation dated April 20, 2007; Addendum to Geotechnical Report by Geotechnical Investigation dated July 2, 2008; Second Addendum to Geotechnical Reports by Geotechnical Investigation dated October 9, 2007 and July 9, 2008; Sand Mitigation worksheet by David Skelly dated July 18, 2008; Appeal forms.

I. PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

MOTION: ***I move that the Commission approve Coastal Development Permit No. A-6-CII-08-028 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

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

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of certified Local Coastal Program and the public access and recreation policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions.

See attached page.

III. Special Conditions.

The permit is subject to the following conditions:

1. Revised Final Plans. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit to the Executive Director for review and written approval, final site, building, grading, foundation and elevation plans for the permitted development that have been approved by the City of Carlsbad. Said plans shall be in substantial conformance with the plans submitted by the applicant dated July 2007 by Zavatto Design Group, but shall be revised as follows:

   a. Any proposed accessory improvements (i.e., decks, patios, walls, etc.) located seaward of the identified bluff edge on the bluff face shall be detailed and drawn

to scale on the final approved site plan. Such improvements shall only be "at grade" and capable of being removed without significant landform alteration.

b. The deletion of the pool, spa, patios and retaining walls on the face of the bluff that involve grading of the bluff and the stairs on the top of the riprap revetment

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

2. 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 from wave runup, erosion and bluff collapse; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (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.

3. Other Special Conditions of the Carlsbad Permit. Except as provided by this coastal development permit, this permit has no effect on conditions imposed by the City of Carlsbad pursuant to an authority other than the Coastal Act.

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

5. Future Development. This permit is only for the development described in coastal development permit No. A-6-CII-08-28. Pursuant to Title 14 California Code of Regulations Section 13250(b)(6), the exemptions otherwise provided in Public Resources Code Section 30610(a) shall not apply. Accordingly, any future improvements to the proposed single family residence, including but not limited to repair and maintenance identified as requiring a permit in Public Resources Code section 30610(d) and Title 14 California Code of Regulations section 13252(a)-(b), shall require an amendment to permit No. A-6-CII-08-28 from the California Coastal Commission.

6. Construction Schedule/Staging Areas/Access Corridors. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit to the Executive Director for review and written approval, detailed plans identifying the location of access corridors to the construction site and staging areas, and a final construction schedule. Access shall only be via the identified access corridors. Said plans shall include the following criteria specified via written notes on the plan:

a. Use of sandy beach and public parking areas outside the actual construction site, including on-street parking, for the interim storage of materials and equipment is prohibited.

b. No work shall occur on the beach during the summer peak months (start of Memorial Day weekend through Labor day) of any year.

c. Equipment used on the beach shall be removed from the beach at the end of each workday.

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

7. Drainage Plan. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit for the review and written approval of the Executive Director, a final drainage and runoff control plan, with supporting calculations, that has been approved by the City of Carlsbad. This plan shall include the following requirements:

(a) Drainage from all roofs, parking areas, driveways, and other impervious surfaces on the building pad shall be directed toward the street to the maximum extent possible and through vegetative or other media filter devices effective at removing and/or mitigating contaminants such as petroleum hydrocarbons, heavy metals, and other particulates.

The permittee shall undertake development in accordance with the drainage plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No

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

8. Revised Landscaping Plan. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit for the review and written approval of the Executive Director, a revised final landscape plan approved by the City of Carlsbad. Said landscape plans shall be in substantial conformance with the plans submitted with this application by Zavatto Design Group dated July 2007, except they shall be revised as follows:

a. The landscape palate shall emphasize the use of drought-tolerant native species, but use of drought-tolerant, non-invasive ornamental species and lawn area, is allowed as a small component. No plant species listed as problematic and/or invasive by the California Native Plant Society**,** the California Invasive Plant Council, or as may be identified from time to time by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized.

b. A view corridor a minimum of 6 ft. wide shall be preserved in the north and south yard areas. All proposed landscaping in these yard areas shall be maintained at a height of three feet or lower (including raised planters) to preserve views from the street towards the ocean. All landscape materials within the identified view corridors shall be species with a growth potential not expected to exceed three feet at maturity. Any gates or fencing across the side yard setback areas shall be at least 75% see through/open.

c. A planting schedule that indicates that the planting plan shall be implemented within 60 days of completion residential construction.

d. A written commitment by the applicant that all required plantings shall be maintained in good growing condition, and whenever necessary, shall be replaced with new plant materials to ensure continued compliance with applicable landscape screening requirements.

e. Rodenticides containing any anticoagulant compounds (including, but not limited to, Warfarin, Brodifacoum, Bromadiolone or Diphacinone) shall not be used.

f. Five years from the date of issuance of the coastal development permit, the applicant shall submit for review and written approval of the Executive Director, a landscape monitoring report, prepared by a licensed Landscape Architect or qualified Resource Specialist, that certifies the on-site landscaping is in conformance with the landscape plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.

If the landscape monitoring report indicates the landscaping is not in conformance with or has failed to meet the performance standards specified in the landscaping plan approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental landscape plan for the review and written approval of the Executive Director. The revised landscaping plan must be prepared by a licensed Landscape Architect or Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

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

9. Protection of Accessory Improvements. In the event that erosion or bluff failure threatens the accessory improvements (i.e., decks, retaining walls, patios, etc.), they shall be removed. The decks, retaining walls and patios are authorized to remain in place only until they are threatened by erosion or bluff failure. The approval of this permit shall not be construed as creating a right to shoreline protection under the City's LCP. Prior to removal of any threatened accessory improvements, the permittee shall obtain a coastal development permit for such removal unless the Executive Director determines that no permit is legally required.

10. Disposal of Export Material/Construction Debris. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall identify the location for the disposal of export material and construction debris. If the site is located within the coastal zone, a separate coastal development permit or permit amendment shall first be obtained from the California Coastal Commission or its successors in interest.

11. As-Built Plans. **WITHIN SIXTY (60) DAYS FOLLOWING COMPLETION OF THE PROJECT**, the permittees shall submit for review and written approval of the Executive Director, as-built plans for the residence and accessory improvements permitted herein. Said as built plans shall first be approved by the City of Carlsbad and document that the home and accessory improvements have been constructed consistent with the Executive Director approved construction plans required pursuant to Special Condition #1 of CDP A-6-CII-08-028.

12. Survey of Shoreline Protection. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit final revetment plans for the project that have been approved by the City of Carlsbad that include a survey of the existing revetment, prepared by a licensed surveyor, for the review and written approval of the Executive Director. The survey shall identify permanent benchmarks from the property line or another fixed reference point from which the elevation and seaward limit of the revetment can be referenced for measurements in the future. Said plans shall be in

substantial conformance with the plans submitted with the plans prepared by Zavatto Design Group dated July, 2007 and shall include the following:

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

13. Long-Term Monitoring Program. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall submit for review and written approval of the Executive Director, a long-term monitoring plan for the existing shoreline protection. The purpose of the plan is to monitor and identify damage or changes to the revetment such that repair and maintenance is completed in a timely manner to avoid further encroachment of the revetment on the beach. The monitoring plan shall incorporate, but not be limited to the following:

a. An evaluation of the current condition and performance of the revetment, addressing any migration or movement of rock which may have occurred on the site and any significant weathering or damage to the revetment that may adversely impact its future performance.

b. Measurements taken from the benchmarks established in the survey as required in Special Condition #12 of CDP #A-6-CII-08-028 to determine settling or seaward movement of the revetment. Changes in the beach profile fronting the site shall be noted and the potential impact of these changes on the effectiveness of the revetment evaluated.

c. Recommendations on any necessary maintenance needs, changes or modifications to the revetment to assure its continued function and to assure no encroachment beyond the permitted toe.

d. An agreement that the permittee shall apply for a coastal development permit within 90 days of submission of the report required in subsection c. above for any necessary maintenance, repair, changes or modifications to the project recommended by the report that require a coastal development permit and implement the repairs, changes, etc. approved in any such permit.

The above-cited monitoring information shall be summarized in a report prepared by a licensed engineer familiar with shoreline processes and submitted to the Executive Director for review and written approval. The report shall be submitted to the Executive Director and the City of Carlsbad Engineering Department after each winter storm season but prior to May 1st of each year starting with May 1, 2009. Monitoring shall continue throughout the life of the revetment or until the revetment is removed or replaced under a separate coastal development permit.

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

14. Future Maintenance. The permittees shall maintain the existing revetment in its approved state. Any change in the design of the revetment or future additions/reinforcement of the revetment beyond exempt maintenance as defined in Section 13252 of Title 14 of the California Code of Regulations to restore the structure to its original condition will require a coastal development permit. **However, in all cases, if after inspection, it is apparent that repair and maintenance is necessary, 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.**

15. No Future Seaward Extension of Shoreline Protective Devices. By acceptance of this Permit, the applicants agree, on behalf of themselves and all successors and assigns, that no future repair or maintenance, enhancement, reinforcement, or any other activity affecting the existing shoreline protective device, shall be undertaken if such activity extends the footprint seaward of the existing device. By acceptance of this Permit, the applicants waive, on behalf of themselves and all successors and assigns, any rights to such activity that may exist under Public Resources Code Section 30235.

16. Mitigation for Impacts to Sand Supply. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicants shall provide evidence, in a form and content acceptable to the Executive Director, that a fee of $29,027.63 has been deposited in an interest bearing account designated by the Executive Director, in-lieu of providing the total amount of sand to replace the sand and beach area that would be lost due to the impacts of the proposed protective structure. The methodology used to determine the appropriate mitigation fee for the subject site(s) is that described in this staff report. All interest earned shall be payable to the account for the purposes stated below.

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

17. Condition Compliance. **WITHIN SIXTY (60) DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT APPLICATION**, or within such additional time as the Executive Director may grant for good cause, the applicants shall satisfy all requirements specified in the conditions hereto that the applicants are required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Project Description. The proposal includes the demolition of a 2,100 sq. ft. home and the subsequent construction of a 6,755 sq. ft. single-family residence including a 2,366 sq. ft. basement, an infinity edge swimming pool, spa and patio on a 13,650 sq. ft. lot. The project site is a coastal blufftop lot located on the west side of Tierra Del Oro, just north of Cannon Road in the City of Carlsbad. The site slopes down from Tierra Del Oro, transitioning into a steep coastal bluff. The bottom of the bluff face is currently covered with a large riprap revetment that extends up to approximately +18-20 Mean Sea Level (MSL). The infinity pool, spa, and patios will extend further seaward of the home and will terrace the coastal bluff slope, terminating near the top of the riprap.

The City granted a variance from the front yard setback requirements (20 feet required, 0-foot setback approved). The variance allows more of the flat upper portion of the site to be used for building rather than the steeper sloping portions of the lot which minimizes grading and landform alteration consistent with coastal resource preservation. The prevailing pattern of development along Tierra Del Oro uses this approach and the City and Commission have approved it in many permit decisions. There is an existing stairway and, except for the bottom section on the revetment, the revetment is a confirmed pre-coastal act stairway and no improvements are proposed on this stairway.

The proposed development is located in an already developed single-family residential neighborhood. Most of the oceanfront residences have decks, patios and other structures which extend seaward of the principal residential structure. Many of the residences have walkways which extend to the bluff edge. Some residences have platforms at the bluff edge and private beach access stairways which extend down the bluff face to the beach.

The site is planned for residential development in the Mello II segment of the City's certified Land Use Plan (LUP). The site is located within and subject to the Coastal Resource Protection Overlay zone and the Coastal Shoreline Development Overlay Zone of the Carlsbad Municipal Code. The Land Use designation on the site is Residential Low-Medium Density (RLM) and Open Space (OS). The OS General Plan designation applies to the bluff portion of the site.

The standard of review is consistency with the certified City of Carlsbad Local Coastal Program, Mello II segment and, because the site is between the sea and the first public road, the public access and recreation policies of the Coastal Act.

2. Shoreline Development/Hazards. The project as proposed, includes a new single-family residence and an after the fact request for improvements made to an existing pre-coastal revetment sometime between May of 1979 and June of 1987. The City of Carlsbad's LCP has a policy regulating such types of development:

Section 21.204.110 4b of the Coastal Shoreline Development Overlay zone states:

> 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..…Provisions for the maintenance of any permitted seawall shall be included as a condition of project approval…..Seawalls shall be constructed essentially parallel to the base of the bluff and shall not obstruct or interfere with the passage of people along the beach at any time.

In addition, The Mello II LUP contains policies that address coastal erosion. Policy 4-1 provides:

> (a) Development along the Shoreline
>
> For all new development along the shoreline, including additions to existing development, a site specific geologic investigation and analysis similar to that required by the Coastal Commission's Geologic Stability and Bluff Top Guidelines shall be required; for permitted development, this report must demonstrate bluff stability for 75 years, or the expected lifetime of the structure, whichever is greater. Additionally, permitted development shall incorporate, where feasible, subdrainage systems to remove groundwater from the bluffs, and shall use drought-resistant vegetation in landscaping, as well as adhering to the standards of erosion control contained in the Carlsbad Master Drainage Plan. A waiver of public liability shall be required for any permitted development for which an assurance of structural stability cannot be provided.

Additionally, Section 21.204.110 of the Coastal Shoreline Development Overlay zone requires that new development must be sited appropriately with respect to hazards.

The above LUP policy requires that bluff stability must be demonstrated through a geotechnical reconnaissance. The geotechnical report for the project analyzes both the impact on the coastal bluff from the project and the risk factors involved in siting the project as proposed. The geotechnical report concludes the project site is grossly stable and will accommodate the project without adversely affecting bluff stability or the integrity of the home. The report documents that the home, as proposed, will be safe for

its estimated life. According to the Commission's staff geologist, based on the submitted slope stability analysis completed for the project, as proposed, the home will be sited so as to attain a factor of safety against sliding of greater than 1.5 and that the factor of safety will be maintained throughout the economic life of the structure provided the rebuilt revetment is properly maintained so as to eliminate erosion of the coastal bluff. Thus, the home in its proposed location will be safe for its economic life from a geotechnical standpoint.

The existing rock riprap revetment was initially installed prior to passage of the Coastal Act, although aerial photography indicates that the riprap revetment was enlarged sometime between May of 1979 and June of 1987; without the benefit of a Coastal Development permit. The 1979 and 1987 photos were taken during the same season, thus there should not be a large scale difference in the depth of the beach based solely on natural processes. It is likely, therefore, that the revetment was enlarged as opposed to it simply being more visible due to lack of sand supply and thus a higher level of exposure. In 1978, seven properties to the north sought and received a permit from the Commission for improvements to the existing revetment in response to damaging storm waves (ref. CDP# F7529). The residents filed jointly for repair and upgrades to the existing revetment. The application was for lots 8 through 14, beginning directly south of the subject site and ending at the southern terminus of the Tierra Del Oro development. Based on the permit file, the subject site was not included within this application. As a condition of that permit, each applicant was required to dedicate the most seaward 25' of their property for public lateral access. To date, no such lateral access dedication has been recorded on the subject site, suggesting that the owner never sought and/or received a permit to improve the revetment because a 25' lateral access dedication would likely have been required as a condition of approval for any such permit.

To address this issue, the applicant has included the improvements to the revetment in this Coastal Development review process. The applicant has submitted geotechnical reports indicating that the revetment is necessary to protect the existing structure and is located and designed to be configured to be the least impactive to public access. The City of Carlsbad's LCP does not allow for the construction of a shoreline protective device to protect new development. While the riprap is being reviewed at the same time as the proposed new development, the two are not integrally linked. The upgrade of the revetment was completed prior to 1987 and was likely in response to rainy season with destructive storm events, as such, it can be concluded that the improvements to the revetment were necessary to protect the existing home, and therefore consistent with the City's policies pertaining to revetments. The current size of the riprap is approximately 10 feet in exposed height and 18 feet in total height and the beach elevation along the base of the riprap is approximately 3 to 4 feet above Mean Sea Level (MSL).

The City of Carlsbad's LCP further requires that maintenance of shoreline protection device shall be included as a condition of project approval. As such, Special Condition #13 requires the applicant to submit a detailed monitoring program for the revetment and to survey the revetment annually. Further, the geotechnical reports states "It is our opinion that the existing rock rip rap is considered to be tight and secure…;". In order to

have bench marks to assure the revetment remains in the current configuration, Special Condition #12 requires the applicant to submit a detailed survey of the existing shoreline protection. Special Condition #13 requires the applicant to annually monitor the revetment to ensure that there is no substantial movement or degradation of the revetment overtime and will use the survey required in Special Condition #12 as a benchmark. Without this monitoring, the movement or degradation of the revetment would result in impacts to public access or reduce the protection of the coastal bluff and existing home. Special Condition #14 also includes provisions to address the situation should any future maintenance of the revetment be recommended based on this annual monitoring. It requires the applicants to seek Commission approval of the repair or maintenance work, via a Coastal Development Permit or an amendment to this permit, unless the Executive Director determines that no amendment or new permit is legally required.

Further, Special Condition #15 requires the applicant to acknowledge the revetment shall not extend any further seaward should maintenance of the revetment be necessary in the future and waive any rights to construct the revetment any further seaward that what currently exists. Also, due to the inherent risk of shoreline development, Special Condition #2 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 residence from bluff failure and erosion. Such damage may also result from wave action that damages the revetment. Although the Commission has sought to minimize these risks, the risks cannot be eliminated entirely. Given that the applicants have chosen to construct the proposed development despite these risks, the applicants must assume the risks. Special Condition #4 requires the applicants to record a deed restriction imposing the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property.

Lastly, shoreline protection devices innately impact beach sand supply. Any sands retained inland of the shoreline protective device will not be allowed to naturally erode, providing sand to the littoral cells and subsequently the beaches. As such, Special Condition #16 requires the applicant to submit a mitigation fee, in the amount of $29,027.63 for the associated impacts to sand supply. These impacts and how the fee is determined are discussed in further detail below:

Sand Supply/In Lieu Mitigation Fee

There are a number of adverse impacts to public resources associated with the construction of shoreline protection. The natural shoreline processes referenced in the Coastal Act, Section 30235, such as the formation and retention of sandy beaches, can be significantly altered by construction of a seawall, since bluff retreat is one of several ways that beach area and beach quality sand is added to the shoreline. This retreat is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse, saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration. When a

seawall/revetment is constructed on the beach at the toe of the bluff, it directly impedes these natural processes.

Some of the effects of a shoreline protective structure on the beach such as scour, end effects and modification to the beach profile are temporary or difficult to distinguish from all the other actions which modify the shoreline. Seawalls/revetments also have non-quantifiable effects to 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 area on which the structure is located; 2) the long-term loss of beach which will result when the back beach location is fixed on an eroding shoreline; and 3) the amount of material which would have been supplied to the beach if the back beach or bluff were to erode naturally.

Loss of beach material and loss of beach area are two separate concerns. A beach is the result of both the deposition of sandy material and the attributes of the physical area between the water and the back of the beach. Thus, beach area is not simply a factor of the quantity of sandy beach material. Beach nourishment is a method that allows us to shift the shore profile seaward and create a new area of dry beach. This will not create new coastal land, but will provide many of the same benefits that will be lost when the beach area is covered by a seawall/revetment or "lost" through passive erosion when the back bluff location is fixed. The required mitigation fee may be used to promote such kinds of beach nourishment.

The volume of sand that is calculated by the Beach Sand In-lieu Mitigation Program currently utilized by the Commission is the quantification of the direct impacts to the existing recreational beach from the proposed revetment improvements. The mitigation program recommended as a special condition for this project includes quantification of the impacts from the revetment encroachment, denial of sand to the littoral cell and passive erosion, as discussed herein. The purpose of the Beach Sand In-Lieu Fee Mitigation Program is to mitigate for the small, persistent loss of recreational beach such as will result from the proposed project by placing funds into a program that will be used for placement of sand on the beach in this area. This Beach Sand In-Lieu Fee Mitigation Program is administered by the San Diego Association of Governments (SANDAG) and has been in place in San Diego County for many years.

It is possible to estimate the volume of sand needed to create a given area of dry beach through beach nourishment. The proposed project will result in a loss of 945 sq. ft. of beach due to the long-term physical encroachment of the seawall (based on a 63-foot length and 15- foot width). In addition, there will be 520 sq. ft. of beach area that will no longer be formed because the back of the beach will be fixed (63 ft. x .33 [erosion rate] x 25 [estimated life of the seawall in years]). This 1,465 sq. ft. of beach area (945 + 520) cannot be directly replaced by land, but a comparable area can be built through the one-time placement of 1,318.5 cubic yards of sand on the beach seaward of the seawall as beach nourishment. Thus, the impact of the seawall on beach area can be quantified as 1,318.5 cubic yards of sand. In addition to the impact on beach area, there is the amount

of sand material in the bluff that would have been added to the beach if natural erosion had been allowed to continue at the site, which is calculated to be a volume of 274 cubic yards. Therefore, the amount of sand necessary to mitigate for the impacts associated with the seawall construction is estimated to be 1,592.3 cubic yards (274 cy. yds. + 468 cu. yds.+ 850 cu. yds.).

Special Condition #16 requires the applicant to deposit an in-lieu fee to fund beach sand replenishment of 1,592.3 cubic yards of sand, as mitigation for impacts of the proposed shoreline protective device on beach sand supply and shoreline processes. In the case of the proposed project, the fee calculates to be $29,027.63 based on 1,592.3 cubic yards of sand multiplied by the cost of obtaining a cubic yard of sand (and delivering it to the beach), as proposed by the applicants' engineer at $18.23 per yard.

The San Diego Association of Governments (SANDAG) has adopted the Shoreline Preservation Strategy for the San Diego region and is currently working on techniques toward its implementation. The Strategy considers a full range of shoreline management tactics, but emphasizes beach replenishment to preserve and enhance the environmental quality, recreational capacity, and property protection benefits of the region's shoreline. Funding from a variety of sources will be required to implement the beach replenishment and maintenance programs identified in the SANDAG Strategy. In this particular case, SANDAG has agreed to administer a program which would identify projects which may be appropriate for support from the beach sand replenishment fund, through input from the Shoreline Preservation Working Group which is made up of representatives from all the coastal jurisdictions in San Diego County. The Shoreline Preservation Working Group is currently monitoring several large scale projects, both in and out of the coastal zone, they term "opportunistic sand projects" that will generate large quantities of beach quality material suitable for replenishing the region's beaches. The purpose of the account is to aid in the restoration of the beaches within San Diego County. One means to do this would be to provide funds necessary to get such "opportunistic" sources of sand to the shoreline.

The applicant is being required to pay a fee in-lieu of directly depositing the sand on the beach, because the benefit/cost ratio of such an approach would be too low. Many of the adverse effects of the seawall/revetment on sand supply will occur gradually. In addition, the adverse effects impact the entire littoral cell but to different degrees in different locations throughout the cell (based upon wave action, submarine canyons, etc.) Therefore, mitigation of the adverse effects on sand supply is most effective if it is part of a larger project that can take advantage of the economies of scale and result in quantities of sand at appropriate locations in the affected littoral cell in which it is located. The funds will be used only to implement projects which benefit the area where the fee was derived, and provide sand to the region's beaches, not to fund operations, maintenance or planning studies. Such a fund will aid in the long-term goal of increasing the sand supply and thereby reduce the need for additional armoring of the shoreline in the future. The fund also will insure available sandy beach for recreational uses. The methodology, as proposed, ensures that the fee is roughly proportional to the impacts to sand supply attributable to the proposed seawall. The methodology provides a means to quantify the

sand and beach area that would be available for public use, were it not for the presence of the seawall/revetment.

The above-described impacts on the beach and sand supply have previously been found to result from seawalls in other areas of North County. In March of 1993, the Commission approved CDP #6-93-85/Auerbach, et al for the construction of a seawall fronting six non-continuous properties located in the City of Encinitas north of the subject site. In its finding for approval, the Commission found the proposed shoreline protection would have specific adverse impacts on the beach and sand supply and required mitigation for such impacts as a condition of approval. The Commission made a similar finding for several other seawall developments within San Diego County including an August 1999 approval (ref. CDP No. 6-99-100/Presnell, et. al) for the approximately 352-foot-long seawall project located approximately ¼ mile south of the subject development and a March 2003 approval (ref. CDP No. 6-02-84/Scism) located 2 lots south of the subject site. (Also ref. CDP Nos. 6-93-36-G/Clayton, 6-93-131/Richards, et al, 6-93-136/Favero, 6-95-66/Hann, 6-98-39/Denver/Canter and 6-99-41/Bradley; 6-00-138/Kinzel, Greenberg; 6-02-02/Gregg, Santina and 6-03-33/Surfsong, 604-83,Cumming, Johnson and 6-05-72 Las Brisas).

In summary, the applicant has proposed the after-the-fact approval for improvements made to an existing, pre-coastal rip rap revetment. Impacts to public access and the safety of the home could result from improper placement and/or maintenance of the revetment. Further, the construction of shoreline protection, of any kind, impedes the natural erosion of the bluff edge resulting in impacts to public access and sand supply. Special conditions have been recommended to assure that the revetment is properly constructed and will remain as such over time. Further, a special condition requires the applicant to pay a sand mitigation fee in the amount of $29,027.63 to mitigate for the loss of sand as a result of the revetment. Therefore, as conditioned, the proposal can be found consistent with the City of Carlsbad's LCP policies for shoreline protection devices.

3. Stringline. The proposed development is located in a region that utilizes stringline policies to regulate the seaward extent of development. The City of Carlsbad has specific policies regarding stringline setbacks. The goal of limiting new development from extending beyond the stringline is to restrict encroachment onto the shoreline/coastal bluffs and to preserve public views along the shoreline. Specifically, Section 21.204.050B of the Coastal Shoreline Development Zone states:

> New development fronting the ocean shall observe at a minimum, an ocean setback based on “stringline” method of measurement. No enclosed portions of a structure shall be permitted further seaward than allowed by a line drawn between the adjacent structure to the north and south, no decks or other appurtenances shall be permitted further seaward than those allowed by a line drawn between those on the adjacent structure to the north and south. A greater ocean setback may be required for geological reasons and if specified in the Local Coastal Program.

The project as proposed and as approved by the City interprets the stringline to be drawn from the furthest point of development to the direct north and south. The City found that the project is consistent with the stringline provisions of the LCP. However, as approved, the stringline is measured incorrectly (it is measured from the furthest portion of the adjacent residences when it should be measured from the nearest adjacent corner of the structures). The Commission has for the most part historically interpreted the City's stringline provisions to be measured in this manner, which has resulted in previous appeals within the City of Carlsbad, the most recent being the lot adjacent and north of the subject site (A-6-CII-08-028/Riley) among others (ref. CDP Nos. A-6-CII-03-26/Kiko; 6-90-25/Kunkel; 6-90-299/Rowe; 6-92-107/Phillips and 6-95-144/Bownes'). In this particular case, the City's interpretation allows the development to encroach between 1-10 feet seaward of the allowable stringline, inconsistent with the Overlay. Further, the stringline for all accessory structures (patio, deck) has been determined in the same manner, and given the location of the bluff edge, the interpretation of these stringlines could allow for significant development on the bluff face.

However, in this case, the project is an infill project and, therefore, the project does not represent a situation where a precedent might be set. There has been one other proposal using the same interpretation of the western stringline that was approved by the City and not appealed by the Commission (CDP 4-11,CDP 5-20/Casa Di Mare). Further, in the Commission's most recent action, the Commission interpreted the stringline in the same manner as the City (ref. CDP A-6-CII-07-017/Riley).

Furthermore, the City allowed the stringline to be drawn from the approved stringline established by Coastal Permit A-6-CII-07-017. To date, this permit has not been reviewed by the City nor issued by the Coastal Commission. The City's LCP requires that the stringline be measured from the nearest "structure" rather than allowing such measurement from a proposed or even an approved structure. The concern raised by the City's approach is that if the building permits are issued for the neighboring house but the residence is never constructed, the stringline will have been determined by a structure that will never exist.

However, in this case, the line of development allowed by drawing the stringline from the approved, but *not built* structure is very similar to the location of the stringline that would be drawn using the nearest *existing* structure. As such, the impacts to public views would be minimal, if any. Further, the proposed stringline is located inland of the existing home proposed for removal and as such, no new precedent will be established in this neighborhood; therefore, the approval of the stringline as proposed will not result in future seaward extension of development in this neighborhood.

Within the Tierra Del Oro development, the homes are located in close proximity to one another, and thus the public view opportunity is limited to the existing line of development. So that when standing on the beach looking towards this development (either from the north or south) views are already obstructed by previous development, as many of these homes and accessory structures are sited closer to the water's edge than the home proposed by this project. Furthermore, the stringline, as proposed, will result in the

new home being located further *inland* than the existing home, and could therefore result in the creation of additional public views. As such, the location of the proposed home will not result in any impacts to public views.

The angle of Tierra Del Oro Cul-de-sac Street impacts the property frontage and the rear of the property is restricted by the eroded bluff edge. As such, development on this site is highly constrained and these constraints must be considered when determining the appropriateness of the standard stringline interpretation. If measuring from the nearest edge of the properties on either side, and not the seaward edge, the development envelope might be constrained to the point that any desirable building design would be infeasible.

While measuring the stringline from the most seaward extent of the adjacent homes is not the typical interpretation by the Commission, this interpretation is justified under these specific circumstances and will not set an adverse precedent given the siting of the home and will not have any impacts on public views. Therefore, the proposed location of the home and accessory structures is consistent with the visual impact policies of the City's certified LCP and the applicable policies of the Coastal Act.

4. <u>Development on the Bluff Face</u>. The proposed development is located on a bluff-top lot. The City's LCP provisions do not support substantial grading and development on a coastal bluff. Section 21.204.050 of the Coastal Shoreline Development Overlay Zone and policies of the Mello II LCP state:

> Mello II LUP Policy 4-1(d):
>
> No development shall be permitted on sand or rock beach or on the face of any ocean bluff, with the exception of access ways to provide **public** (emphasis added) beach access and of limited public recreational facilities.

Section 21.204.050 of the Coastal Shoreline Development Overlay Zone provides:

a. Grading and Excavation - Grading and excavation **shall be the minimum necessary** (emphasis added) to complete the proposed development consistent with the provisions of this zone and the following requirements:

    2) No excavation, grading or deposit of natural materials shall be permitted on the beach or the face of the bluff except to the extent necessary to accomplish construction pursuant to this section.

In its approval of the project, the City cited the project's conformance with the bluff-top development provisions of the Coastal Shoreline Development Overlay. The overlay is intended to provide land use regulations along the Carlsbad shoreline including beaches, bluffs and the land area immediately landward thereof. The purpose of the overlay zone is to ensure that the public's interest in maintaining the shoreline as a unique recreational and scenic resource is adequately protected. Additionally, the overlay ensures public

safety and public access will be available and promotes avoidance of the adverse geologic and economic effects of bluff erosion.

The Commission has interpreted the above policy to mean that only at-grade accessory structures are permitted on a bluff face which do not require grading. The Commission has found that "the minimum necessary" for new development on the bluff face means at-grade and ephemeral structures that do not require excavation. The project is proposing permanent structures (retaining wall, pool, spa) seaward of the residence on the bluff face which will require substantial excavation and, as such, are inconsistent with the above provisions of the certified LCP. The geotechnical report submitted associated with this project locates the bluff edge at approximately +20 MSL; which is generally located at the top of the riprap revetment. However, the Commission's staff geologist has determined the bluff edge to be at +36 MSL, similar to the location determined for previously appealed projects adjacent to and/or nearby the subject site (ref. CDP A-6-CII-07-017/Riley; A-6-CII-08-018/Byrne).

In 2007, the City of Carlsbad approved a CDP for the last vacant lot on Tierra Del Oro (ref. CDP A-6-CII-07-017/Riley) right next door to the subject site. Because of the conditions on this lot, the Commission's Technical Services staff reviewed in depth the geotechnical information submitted associated with this CDP. Previous to this review, the bluff edge was loosely defined at approximately +20' MSL (generally at the top of the revetment). However, after more careful review of submitted geotechnical reports, the Commission's staff geologist for the above cited project in 2007 determined the bluff edge was more accurately defined and located at approximately + 36' MSL. The Commission appealed the project (ref. A-6-CII-07-017/Riley) and required the project to be modified to remove all development located west of the 36' contour (i.e., remove all permanent improvements from the face of the coastal bluff). This is the second CDP issued by the City since that determination. The Commission's staff geologist has reviewed the geotechnical report, and again determined that the bluff edge is located at approximately +36' MSL, identical to the bluff edge determined for the property directly to the north (ref. CDP #A-6-CII-07-017/Riley).

The Commission recognizes that development on the bluff face exists at several other locations on Tierra Del Oro (ref. Exhibit #6). However, most of these projects occurred before the Commission had a geologist on staff to advise it on the location of the bluff edge; now that the bluff edge has been defined at approximately +36' MSL and given the City's LCP provisions restricting development on the face of the bluff to only public accessways (private accessways are not permitted), these types of projects located beyond the established bluff edge (36' contour) can no longer be found consistent with the City of Carlsbad's certified LCP. As such, Special Condition #1 requires the applicant to submit revised final plans showing the deletion of any/all development proposed past the established 36' MSL contour bluff edge (i.e., the pool, spa, patios, retaining walls, etc.) that cannot be considered ephemeral and capable of being removed. Further, Special Condition #11 requires the applicant to submit, within 60 days of completion of construction, as built plans for the development showing that the development has been completed consistent with the final approved plans.

In looking at historical aerial photography at this location, the site appears to have had an improved pathway/stairway that existed prior to the ratification of the Coastal Act. As such, the stairway remains a legal non-conforming structure and no work is proposed on the stairway at this time. However, Special Condition #5 requires the Commission to review all future development at this location, and as such, any future maintenance or re-construction of the existing stairway will require additional review by the Commission.

Further, the stairway down the bluff continues to the area covered by the previously mentioned revetment. As previously stated, both the revetment and stairway down the bluff face were constructed prior to the Coastal Act. However, also previously stated, the revetment was significantly improved between 1979-1987. As such, it appears that the portion of the stairway existing on top of the revetment was removed and re-constructed to accommodate the previous revetment augmentation. Again, because the improvements to the revetment weren't approved through a Coastal Development Permit, the replacement of the stairs on top of the bluff was not reviewed. Because the stairway portion on top of the revetment was removed and reconstructed, it lost its legal non-conforming status. In addition, private stairways and other similar structures on top of a revetment are typically not approved as they can interfere with the function of the revetment. As such, Special Condition #1 further requires the applicant to submit revised plans indicating that the un-permitted, improved stairs located on top of the revetment have been deleted from the plans. Removal of the stairway portion on the revetment will be handled as a separate enforcement matter.

In conclusion, the proposed project would result in significant impacts to the coastal bluff. The proposed development includes retaining walls, patios, spa and infinity edge pool all beyond the bluff edge established by Commission staff. Further, a portion of the existing stairway is located on the revetment and was improved/reconstructed without the benefit of a Coastal Development Permit. The Special Conditions required the elimination of the proposed impacts to the coastal bluff. Therefore, only as conditioned, can the project be found consistent with the City of Carlsbad's policies pertaining to development on the bluff face.

5. Public Access. The public access and recreation policies of the Coastal Act are applicable because the proposed development is located between the sea and the first public road. Section 30604(c) requires that a specific access finding be made. In addition, many policies of the Coastal Act address the provision, protection and enhancement of public access to and along the shoreline, in particular, Sections 30210, 30211 and 30212. These policies address maintaining the public's ability to reach and enjoy the water, preventing overcrowding by providing adequate recreational area, and protecting suitable upland recreational sites. Therefore, this development will be reviewed for consistency with both the public access policies of the Coastal Act and the City of Carlsbad’s LCP. The following public access policies are applicable and state in part:

The "Coastal Shoreline Development Overlay Zone", an implementing measure of Carlsbad's certified Mello II LCP Policy 7-3 states:

> The city will cooperate with the state to ensure that lateral beach access is protected and enhanced to the maximum degree feasible, and will continue to formalize shoreline prescriptive rights….

Sections 30210, 30211 and 30212(a) of the Coastal Act state:

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

The project is located on a bluff top site on Tierra Del Oro. The Tierra Del Oro neighborhood is an inlet coastal street that runs parallel with the ocean, and has one entrance and street parking that is open to the public. Currently there is no vertical access to the ocean along Tierra Del Oro. The Commission has previously reviewed the lack of public access within this development and concluded:

> No vertical public access to the shore presently exists along Tierra Del Oro or in the adjacent residential area to the south along Shore Drive. Public access does exist about 100 yards further to the north at Carlsbad State Beach across from Encina Power Plant and approximately 1/3 mile to the south where a section of Carlsbad State Beach also exists. This access allows the public to gain access to the beach below the subject site. The commission finds that with access available nearby to the north and south that imposition of a vertical access requirement in not warranted for this project.

The Commission finds that the same is true today, in that public access to the shoreline is currently available a short distance north of the subject site. Therefore, the need to require public vertical access on the subject site is not necessary. In addition, the City of Carlsbad required the applicant to dedicate from the seaward edge of the revetment to 25' westward for public lateral access. The City typically requires a 25' lateral access dedication with any proposed ocean fronting development. Special Condition #3 requires the applicant to adhere to all other conditions placed on this proposal as required by the permit issued by the City of Carlsbad. As such, the project will protect and provide for public access.

The demolition of the existing home and the grading for the basement and reconstruction of the new home will require heavy equipment and staging areas, as well as adequate parking. The laborers required for the project may choose to park their cars within the available on-street parking. The combination of construction materials, equipment and parking requirements may result in decreased access opportunities for the public. As such, Special Condition #6 requires the applicant to identify any locations which will be used as staging and storage areas for materials and equipment during the construction phase of this project. Use of public parking areas and the sandy beach, including on-street parking, for the interim storage of materials and equipment shall be avoided to ensure that public access and parking will not be affected.

Furthermore, a substantial amount of grading is associated with the construction of the basement as a component of the proposed home. As such, a considerable amount of cut will need to be removed from the site. Some of this cut may be usable beach sand. The City of Carlsbad participates in an opportunistic sand program allowing the city to deposit beach sand onto shallow beaches in Carlsbad. The project, as approved by the City is required to provide all high-quality beach sand for the City's opportunistic sand program. This sand will provide additional sands to beaches, thus improving public access.

As previously discussed, the proposed project includes the after-the-fact approval of both improvements to the existing revetment and the stairway located on top of the revetment. The geotechnical reports associated with this revetment indicate that the rip rap is considered to be tight and secure, however, no data has been provided to corroborate that conclusion. As such, Special Condition #12 requires the applicant to submit a survey of the shoreline protection device to verify that the location of the revetment is in the area that affects public access the least. Further, Special Condition #15 prohibits the revetment from being located any further westward than it currently exists; therefore, any future maintenance will not result in additional impacts to public access. As such, the proposed development, as conditioned, can be found consistent with all applicable policies pertaining to public access.

6. <u>Water Quality/Drainage/Marine Resources</u>. The proposed development is located along the Carlsbad shoreline. Chapter 15.12 , “Stormwater Management And Discharge Control”, of the certified Carlsbad Zoning Ordinance requires “Best Management Practices” (BMPs) to prevent or reduce to the maximum extent practicable (MEP) the discharge of pollutants directly or indirectly into waters of the United States. The purpose of the ordinance is to reduce pollutants in storm water discharges, including those pollutants taken up by storm water as it flows over urban areas (Urban runoff) to the maximum extent practicable and to reduce pollutants in storm water discharges in order to achieve applicable water quality objectives for surface waters in San Diego.

Policy 4-3 if the Mello II LUP, "Accelerated Soil Erosion," (n) provides:

> Detached residential homes shall be required to use efficient irrigation systems and landscape designs or other methods to minimize or eliminate dry weather flow, if they are within 200 feet of an ESA, coastal bluffs or rocky intertidal areas.

Policy 4-6 of the Mello II LUP, "Sediment Control" Practices, provides:

> Apply sediment control practices as a perimeter protection to prevent off-site drainage. Preventing sediment from leaving the site should be accomplished by such methods as diversion ditches, sediment traps, vegetative filters and sediment basins. Preventing erosion is of course the most efficient way to control sediment runoff.

Section 21.204.050 of the Coastal Shoreline Development Overlay zone provides:

> 1) …Building sites shall be graded to direct surface water away from the top of the bluff, or, alternatively, drainage shall be handled in a manner satisfactory to the City which will prevent damage to the bluff by surface and percolating water..

The certified Carlsbad LCP Mello II segment contains in its Zoning Plan, Coastal Development Regulations that include a Coastal Resource Protection Overlay Zone and the Coastal Shoreline Development Overlay Zone, which have been cited in this report. The purpose of these overlays, among other purposes, is to provide regulations for development and land uses along the coastline in order to maintain the shoreline as a unique recreational and scenic resource, affording public safety and access, and to avoid the adverse geologic and economic effects of bluff erosion, including siting drainage towards the street rather than the bluff and using appropriate landscape designs to further reduce erosion caused by dry weather flow. The proposed project did not include a detailed drainage plan indicating where the drainage associated with this development would be directed. As such, it is not clear to the Commission that the applicant's drainage would be consistent with the above mentioned policies. As such, Special Condition #7 requires the applicant to submit drainage plans, indicating that all drainage be directed towards the street, thus limited impacts to water quality consistent with the City's applicable policies.

Further, the applicant submitted a landscape plan associated with the proposal. However, as proposed, a significant portion of the bluff would be developed (pool, Jacuzzi, retaining walls). As previously discussed, this development is inconsistent with the City's bluff face development policies and as conditioned the applicant would be required to remove all of this development, resulting in an increase in landscape areas. As such, Special Condition #8 requires the applicant to submit a revised landscape plan using only native, non-invasive and drought tolerant plants. As such, the vegetation would not only filter any runoff prior to reaching coastal waters, but native, drought tolerant plants will require less water and thus will result in fewer impacts to bluff stability. Lastly, Special Condition #10 requires the applicant to identify the location for the disposal of export material and construction debris and that if the site is located within the coastal zone, a separate coastal development permit or permit amendment shall first be obtained from

the California Coastal Commission or its successors in interest; thus reducing any impacts to water-quality through sediment deposit.

In conclusion, the project as proposed included inappropriate landscaping and failed to adequately indicate where any drainage would be directed. Special conditions have been provided to address these impacts, and therefore, as conditioned, the project can be found consistent with the City's policies pertaining to water quality and marine resources.

7. Public Views. The City of Carlsbad has policies pertaining to the protection of public views and state in part:

Section 21.204.100 (B & C) of the Coastal Shoreline Development Overlay Zone states:

> B. Appearance – Buildings and structures will be so located on the site as to create a generally attractive appearance and be agreeably related to surrounding development and the natural environment.
>
> C. Ocean Views – Buildings, structures, and landscaping will be so located as to preserve the degree feasible any ocean views as may be visible from the nearest public street.

Policy 8-1 of the City of Carlsbad's LCP states:

> The Scenic Preservation Overlay Zone should be applied where necessary throughout the Carlsbad coastal zone to assure the maintenance of existing views and panoramas. Sites considered for development should undergo review to determine if the proposed development will obstruct views or otherwise damage the visual beauty of the area. The Planning Commission should enforce appropriate height limitations and see-through construction, as well as minimize alterations to topography.

The project site is currently developed with a single-family home and public ocean views do not currently exist from Tierra Del Oro across the site and to the ocean. The proposal includes construction of a two-story, 6,755 sq. ft. single-family residence including a 2,366 sq. ft. basement. The surrounding community is comprised of structures of similar size and scale to the proposed structure. The proposed residence meets all height and density requirements of the certified LCP and architecturally is in conformance with the development and design standards of the surrounding community. A variance has been requested and administratively approved for a reduction in front yard setback from 20 ft. to 0 ft. A reduced front yard setback is often approved in this area, given the western constraints of a bluff-top site.

The applicant has not included a finalized landscape plan. Special Condition #8 therefore requires the applicant to submit a final landscape plan. This plan shall require the applicant to limit the height of vegetation in the side yard setbacks to three feet or lower. Further, Special Condition #8 also requires that any gating of the side yard setback areas be 75% open so as to allow public views through to the ocean. The City of Carlsbad does

have provisions for such see-through construction, as do many other local jurisdictions. Both the City of San Diego and the City of Oceanside have historically used 75% as the minimum percentage necessary to protect public views through side yard gating. This condition will maintain the view corridors remaining in the side yard setback. Therefore, as conditioned, the project can be found consistent with provisions protecting public coastal views.

8. Violation. Development has occurred on the subject site without benefit of a Coastal Development Permit. The existing rock revetment was improved sometime between 1979-1987. The applicant is requesting after-the-fact authorization of the unpermitted improvements to the riprap revetment and the private accessway constructed on top of the existing revetment. Because such private accessways are not permitted by the Commission, **Special Condition #1** requires the applicant to delete the portion of this private stairway located on the revetment from the final project plans. Furthermore, the improvements to the revetment resulted in additional and unmitigated impacts to local sand supply. As such **Special Condition #16** requires the applicant to pay a mitigation fee for the associated loss to local sand supply. In order to ensure that the unpermitted development component of this application is resolved in a timely manner, **Special Condition #17** requires that the applicant submit as built plans, indicating that all Special Conditions have been met within 60 days of project completion.

Although development has taken place prior to submission of this permit application, consideration of this application by the Commission has been based solely upon the policies and provisions of the certified City of Carlsbad LCP as well as the public access and recreation policies of Chapter 3 of the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violation nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal permit.

9. Local Coastal Planning. The certified Carlsbad LCP Mello II segment contains in its Implementation Program, a Coastal Development (C-D) Overlay Zone, which has been discussed in this report. The purpose of the C-D zone is, among other purposes, to provide regulations for development and land uses along the coastline in order to maintain the shoreline as a unique recreational and scenic resource, affording public safety and access, and to avoid the adverse geologic and economic effects of bluff erosion.

The project as proposed would result in development on a bluff face and would result in impacts to local sand supply. The proposed project also includes the after-the-fact approval of improvements to the existing revetment, inconsistent with the City's certified LCP. As conditioned, all of these potential impacts will be eliminated. Furthermore, Special Condition #3 requires the applicant to adhere to all conditions placed on the proposed development associated with the City's approval. Therefore, the Commission finds that approval of the proposed development, as conditioned, will not prejudice the ability of the City to continue implementation of its certified LCP.

10**. California Environmental Quality Act (CEQA).** Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, 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. The City of Carlsbad is the lead agency for this project for purposes of CEQA review.

The proposed project has been conditioned in order to be found consistent with the geologic hazard, visual resource, water quality, and public access and recreation policies of the certified LCP as well as with the public access policies of the Coastal Act. Mitigation measures include conditions addressing impacts to sand supply, grading on the bluff face, public access and adequate maintenance of the existing rip rap revetment. These conditions will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

STANDARD CONDITIONS:

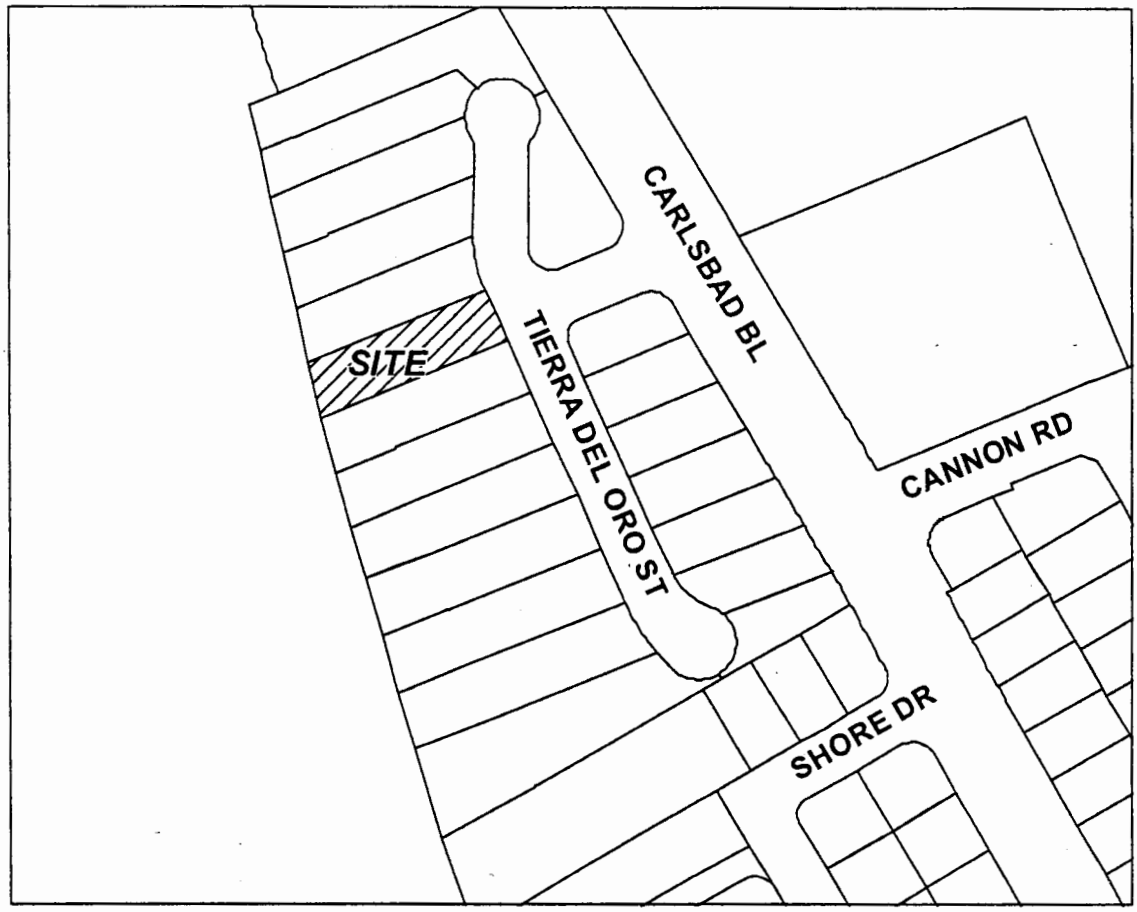
1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

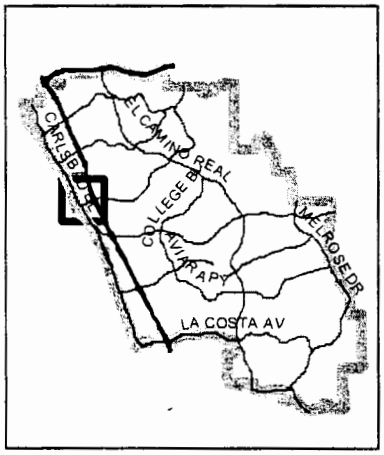
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior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





SITE MAP

NOT TO SCALE

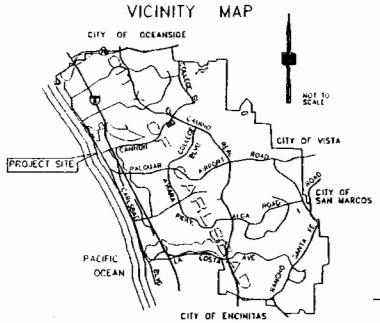
Moss Residence
CDP 05-46

EXHIBIT NO. 1
APPLICATION NO.
A-6-CII-08-028
Location Map

California Coastal Commission

MOSS RESIDENCE
CONSTRAINTS MAP

CDP 05-46



LEGEND:

- BLUFF RECESSION LINE
- MEAN HIGH TIDE LINE
- FEMA BOUNDARY ZONE VE
- STRING LINE
- RIGHT OF WAY
- PROJECT BOUNDARY
- EXIST HARDSCAPE
- EXIST BUILDING
- EXISTING ELEVATION (X 38.3)
- EXIST CONTOUR (25)
- EXISTING RIP RAP
- DISTANT VIEWS

ACREAGE	
1) 0-LESS THAN 15% SLOPES	.19 AC
2) 15-LESS THAN 25% SLOPES	.01 AC
3) 25-LESS THAN 40% SLOPES	.01 AC
4) SLOPES GREATER THAN 40%	.10 AC

EXISTING TOPOGRAPHY:

FIELD SURVEY BY WALTERS LAND SURVEYING IN FEBRUARY 2007.

0 40

4LE
• 10'

Hofman
Planning & Engineering

JOSEPH P. COHAN R.C.E. C58873 EXP. 06-30-09 DATE

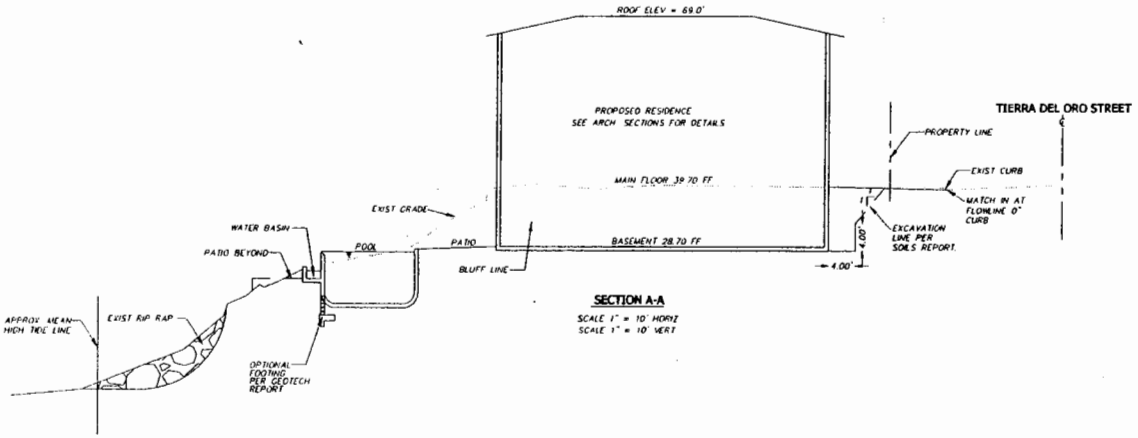
DATE NOVEMBER 2007
JOB NO.
SHEET NO. 2

EXHIBIT NO. 2
APPLICATION NO.
A-6-CII-08-028
Site Plan

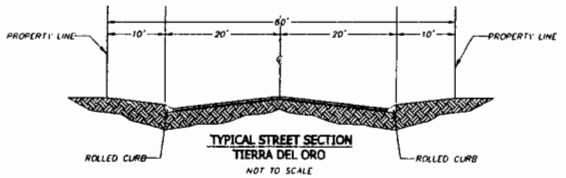
California Coastal Commission

MOSS RESIDENCE
CROSS SECTIONS

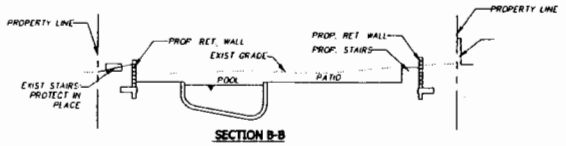
CDP 05-46



SECTION A-A
SCALE 1" = 10' HORIZ
SCALE 1" = 10' VERT

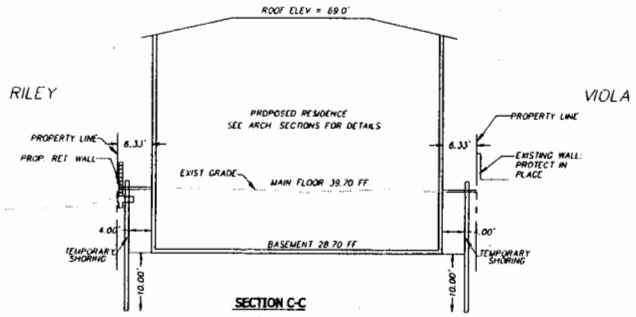


TYPICAL STREET SECTION
TIERRA DEL ORO
NOT TO SCALE



SECTION B-B
SCALE 1" = 10' HORIZ
SCALE 1" = 10' VERT

NOTE SEE SHEET 3 FOR SECTION LOCATIONS



SECTION C-C
SCALE 1" = 10' HORIZ
SCALE 1" = 10' VERT.

Hofman Planning & Engineering

JOSEPH P. COHAN R.C.E. C58873 EXP. 06-30-09 DATE

DATE NOVEMBER 2007
JOB NO.
SHEET NO. 4

EXHIBIT NO. 3
APPLICATION NO.
A-6-CII-08-028
Cross-Sections

California Coastal Commission

McCabe & Company
Government Affairs Consulting

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Cell (310) 463-9888
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California Coastal Commission
San Diego District
Attn.: Toni Ross
7575 Metropolitan Drive
Suite 103
San Diego, CA 92108

June 17, 2008

SUBJECT: A-6-CII-08-028 (Moss)

Dear Ms. Ross,

On behalf of the applicants in the above-referenced application, Steve and Janet Moss, we would like to formally revise the project description to request authorization of the riprap revetment at the toe of the bluff to be retained in its current configuration. The riprap is believed to have been placed by a previous property owner in the early 1980s and has provided effective protection for at least the past 25 years. As described in a previous letter from our geotechnical experts, Geotechnical Exploration, Inc., dated April 17, 2008, retention of the revetment is necessary to protect the property. No changes or expansion of the riprap is proposed or anticipated.

Please revise the project description to reflect this modification. Thank you for your time and attention to this matter.

Sincerely,

Signature on File

Anne Blemker
McCabe and Company

cc: Steve and Janet Moss, applicants

McCabe & Company
Government Affairs Consulting

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California Coastal Commission
San Diego District
Attn.: Toni Ross
7575 Metropolitan Drive
Suite 103
San Diego, CA 92108

July 11, 2008

SUBJECT: A-6-CII-08-028 (Moss)

Dear Ms. Ross,

This letter provides responses to the questions posed in your July 2, 2008 e-mail.

1. Does the applicant want to include the stairs on the revetment as a component to the permitting of the revetment?

The applicants would like to formally revise the project description to request authorization of the wooden stairway traversing the rock revetment to be retained in its current configuration. Based on the information we have been able to obtain regarding historical rock placement and site observation, the stairway is believed to have been installed at the same time as the original revetment, prior to passage of the Coastal Act. As stated in the attached letter from our geotechnical consultant, Geotechnical Exploration, Inc., the expanded revetment is believed to have been constructed around the stairway in the early 1980s. No changes or expansion of the existing stairway are proposed or anticipated.

2. The issue of a sand mitigation fee came up, because the revetment has been improved (in the 80's) without benefit of a coastal development permit. Therefore, we would need has geotechnical agent to calculate the beach impacts of the old revetment versus the new revetment. (in sq. footage) He may have to use aerial photos to help assess the size of the original and pre-coastal revetment

See attached letter from Geotechnical Exploration, Inc. re: *Old Revetment vs. New Revetment* dated July 9, 2008. The consultant determined that the old revetment portion is 140 square feet and the new revetment portion is 960 square feet, for a total of 1,100 square feet.

3. Also, the geotechnical agent needs to assess that the siting of the home is safe, and the revetment is necessary to protect the existing home

See attached letter from letter from Geotechnical Exploration, Inc. re: *Revised Addendum to Report of Geologic Investigation* dated July 9, 2008. In the last paragraph on Page 1, the consultant states, *"The existing rock rip rap is necessary to protect the existing home and the exiting home is safe with this existing rock rip rap in place."*

Please revise the project description to include these responses. Thank you for your time and attention to this matter. We look forward to having this project heard at the Coastal Commission's August meeting in Oceanside.

Sincerely,

Signature on File

Anne Blemker
McCabe and Company

Attachments:
Letter from Geotechnical Exploration, Inc. re: *Old Revetment vs. New Revetment* dated July 9, 2008
Letter from Geotechnical Exploration, Inc. re: *Revised Addendum to Report of Geologic Investigation* dated July 9, 2008

cc: Steve and Janet Moss, applicants

Geotechnical Exploration, Inc.
SOIL AND FOUNDATION ENGINEERING ● GROUNDWATER ● ENGINEERING GEOLOGY

09 July 2008

Mr. Steven Moss
23679 Calabasas Road #360
Calabasas, CA 91302

Job No. 07-9342

Subject: **Old Revetment vs. New Revetment**
Proposed Moss Residence
5015 Tierra del Oro Street
Carlsbad, California

Dear Mr. Moss:

As requested, we herein present this analysis to address the email sent by Toni Ross of the California Coastal Commission on July 2, 2008. In this email, item #2 states, *"The issue of a sand mitigation fee came up, because the revetment has been improved (in the 80's) without benefit of a coastal development permit. Therefore, we would need the geotechnical agent to calculate the beach impacts of the old revetment versus the new revetment (in sq. footage). He may have to use aerial photos to help assess the size of the original and pre-coastal revetment."*

GEI Response: The old revetment, installed prior to the establishment of the Coastal Act, represents an area approximately 35 feet wide by 4 feet deep, totaling 140 square feet. The new revetment installed in the 1980s represents two areas; one approximately 55 feet wide by 16 feet deep and the other 20 feet wide by 4 feet deep, totaling 960 square feet. This revetment was installed around the wood stairs that were in existence prior to the establishment of the Coastal Act. This analysis is based on review of historical aerial photographs and site visits. Combined revetment (old and new) is as follows:

Old Revetment	140 square feet	12.73%
New Revetment	960 square feet	82.27%
Total	***1,100 square feet***	***100%***

LIMITATIONS

The findings, opinions and conclusions presented herein have been made in accordance with generally accepted principles and practice in the field of geotechnical engineering within the City of Carlsbad. No warranty, either expressed or implied, is made.

If you have any questions regarding this letter, please contact our office. Reference to our **Job No. 07-9342** will help expedite a response to your inquiry.

Respectfully submitted,

GEOTECHNICAL EXPLORATION, INC.

Signature on File

Jaime A. Cerros, P.E.
R.C.E. 34422/G.E. 2007
Senior Geotechnical Engineer

Signature on File

Leslie D. Reed, President
C.E.G. 999[exp. 3-31-09]/R.G. 3391

Signature on File

Jay K. Heiser
Senior Project Geologist

REGISTERED PROFESSIONAL ENGINEER
JAIME A. CERROS
No. 002007
Exp. 9/30/09
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
LESLIE D. REED
No. 999
Exp: 3/31/09
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Geotechnical Exploration, Inc.
SOIL AND FOUNDATION ENGINEERING ● GROUNDWATER ● ENGINEERING GEOLOGY

09 July 2008

Mr. Steven Moss
23679 Calabasas Road #360
Calabasas, CA 91302

Job No. 07-9342

Subject: **Revised Addendum to Report of Geotechnical Investigation**
Proposed Moss Residence
5015 Tierra del Oro Street
Carlsbad, California

Dear Mr. Moss:

As requested, we herein provide this revised addendum to our original "Report of Geotechnical Investigation and Geologic Reconnaissance" dated April 20, 2007. As part of this revised addendum, we have responded to comments by the California Coastal Commission and included in the Moss Appeal letter, dated February 28, 2008:

> *"As noted, there is an existing riprap revetment located on the beach, seaward of the toe of the bluff. Commission staff have researched the subject site and determined that originally there was a small amount of riprap at this location prior to the Coastal Act, however between 1979 and 1989 this revetment was significantly improved, without the benefit of a coastal development permit and thus is unpermitted. Both the geotechnical report and the City failed to address the authorization of this revetment. The geotechnical report also failed to identify the nature and purpose of the existing riprap on the beach or address the need for protection, the potential need for future protection and/or the associated impacts to public access."*

GEI Response: The City of Carlsbad asked us to comment on the existing rip rap, which was addressed in our addendum report, dated July 2, 2007. Based on a review of aerial photographs, the existing rock rip rap was constructed sometime in the early 1980s. The existing rock rip rap is necessary to protect the existing home and the existing home is safe with this existing rock rip rap in place. The existing rip rap has provided effective protection for at least the past 25 years. Prior to the installation of this shoreline protection, we have calculated a bluff recession rate of 0.33 feet/year in the past 99 years. Using a recession

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rate of 0.33 feet/year yields a projected, estimated unprotected bluff recession of 25 feet over a period of 75 years. It is our opinion, based on recent observation, that the existing rock rip rap is considered to be tight and secure and based on the anticipated bluff recession rate, should be kept in place to provide protection for the new home for the life of the structure. The existing revetment is the minimum size necessary to protect the structure and extends no further seaward than necessary. Additionally, the rock rip rap does not extend into the dedicated public lateral access easement.

LIMITATIONS

The findings, opinions and conclusions presented herein have been made in accordance with generally accepted principles and practice in the field of geotechnical engineering within the City of Carlsbad. No warranty, either expressed or implied, is made.

If you have any questions regarding this letter, please contact our office. Reference to our **Job No. 07-9342** will help expedite a response to your inquiry.

Respectfully submitted,

GEOTECHNICAL EXPLORATION, INC.

Signature on File

Jaime A. Cerros, P.E.
R.C.E. 34422/G.E. 2007
Senior Geotechnical Engineer

Signature on File

Leslie D. Reed, President
C.E.G. 999[exp. 3-31-09]/R.G. 3391

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Jay K. Heiser
Senior Project Geologist

REGISTERED PROFESSIONAL ENGINEER
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Exp. 9/30/09
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STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
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No. 999
Exp. 3/31/09
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

EXHIBIT NO. 5
APPLICATION NO.
A-6-CII-08-028
Aerial Map of Site

California Coastal Commission

CITY PERMITS ISSUED: YELLOW DOTTED LINE

CCC PERMITS ISSUED: RED DOTTED LINE

POTENTIAL VIOLATIONS: GREEN ARROWS

UNKNOWN: NO INDICATOR

PRE-COASTAL: BLUE ARROW

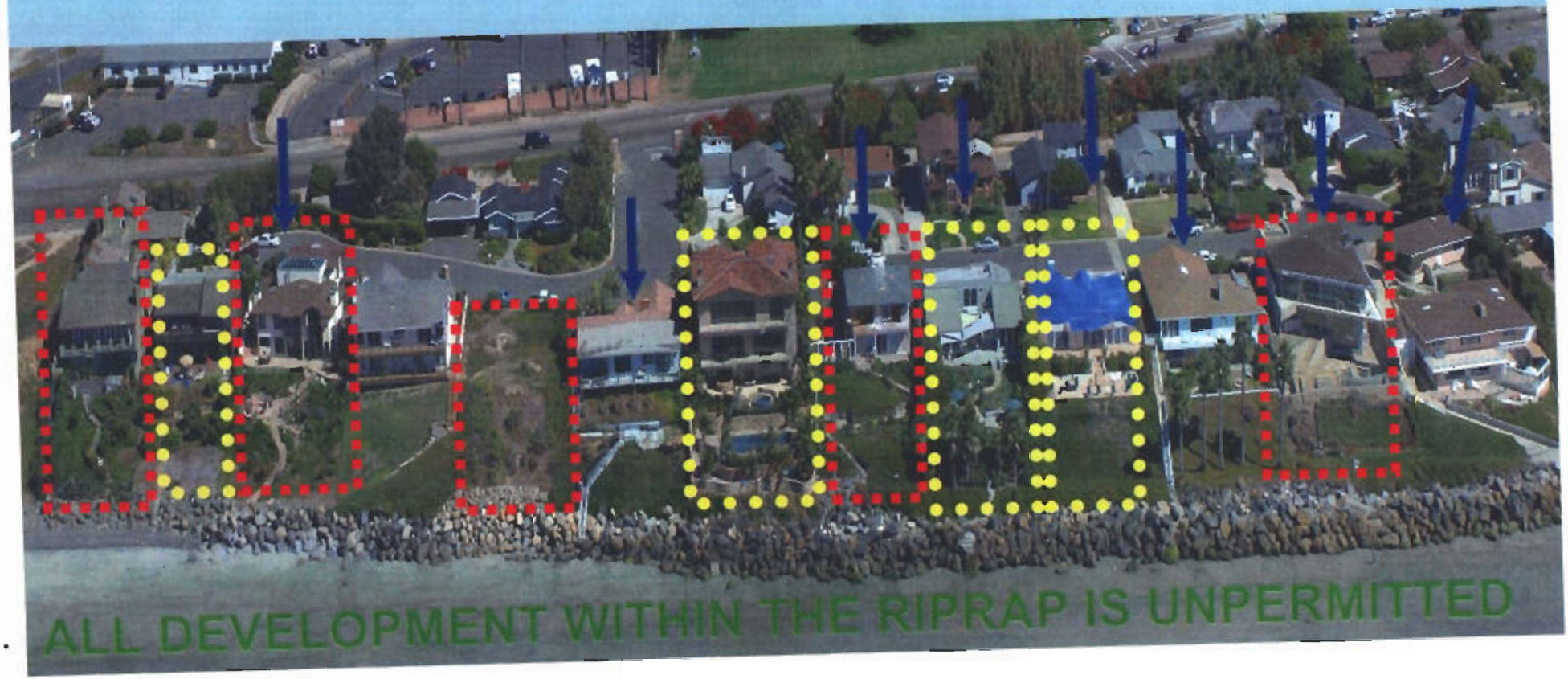

EXHIBIT NO. 6
APPLICATION NO. A-6-CII-08-028
Aerial Map of Tierra Del Oro
California Coastal Commission

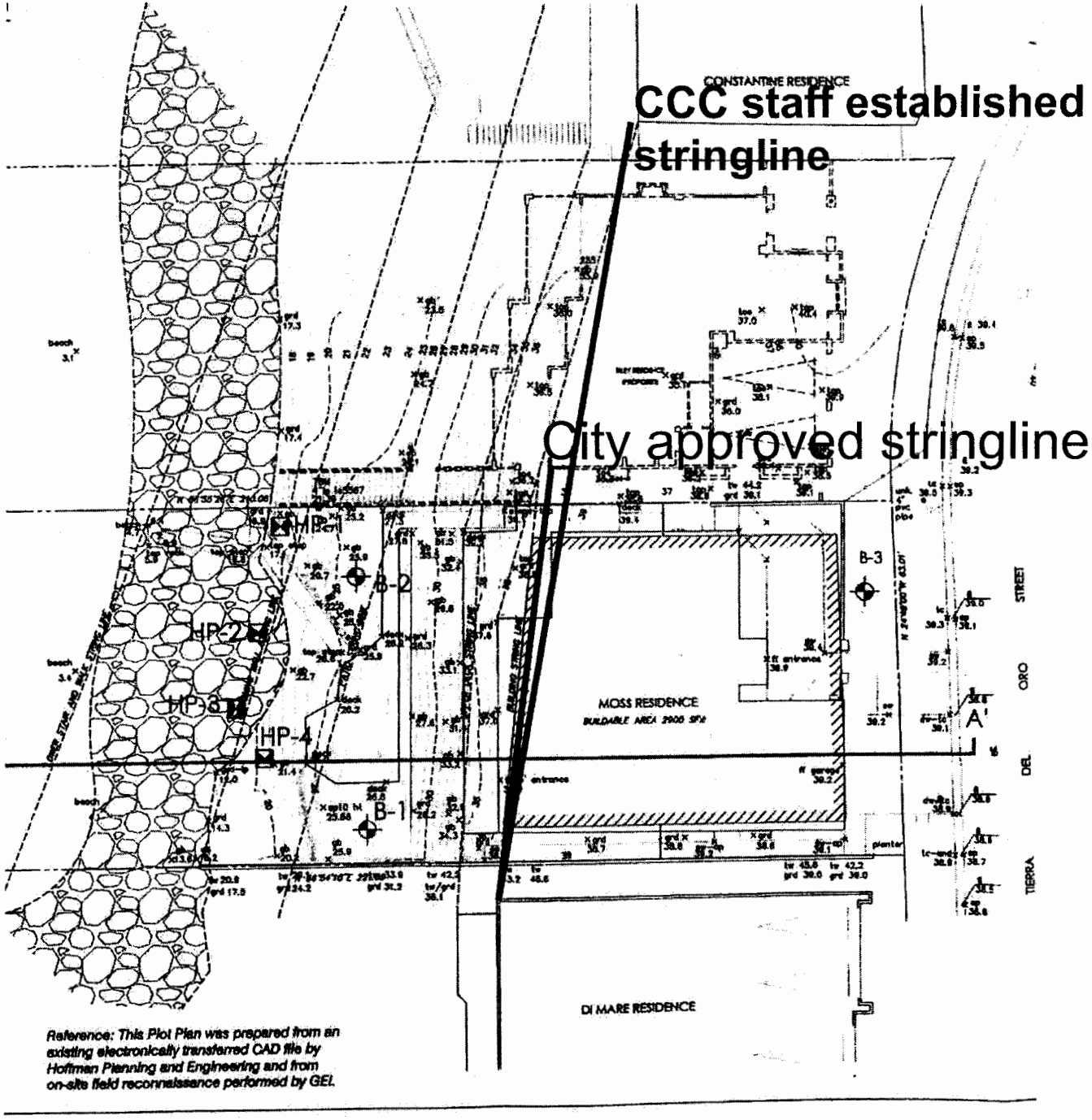

EXHIBIT NO. 7
APPLICATION NO. A-6-CII-08-028
Stringline Plan
California Coastal Commission

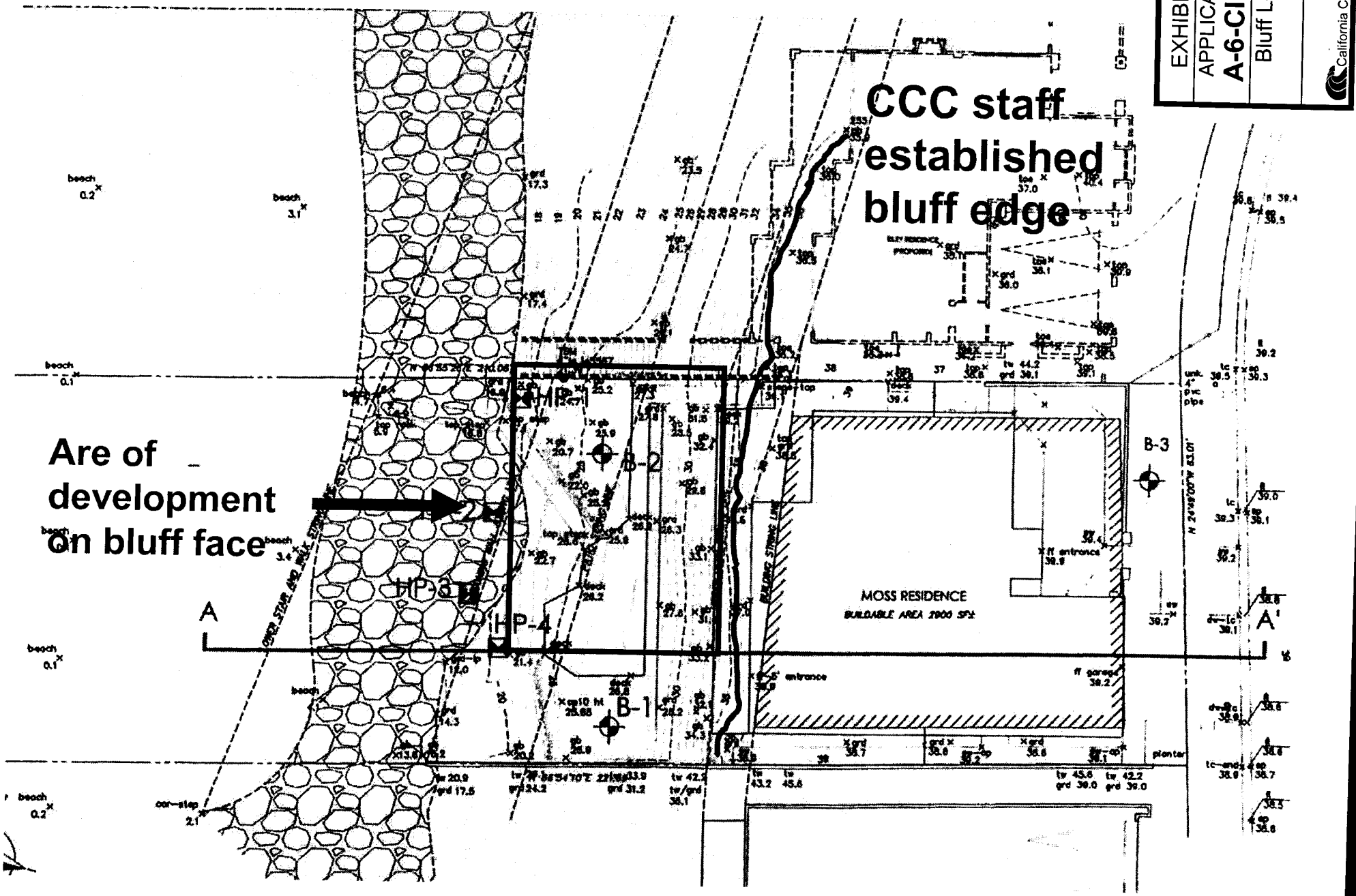

EXHIBIT NO. 8
APPLICATION NO.
A-6-CII-08-028
Bluff Locations

California Coastal Commission