CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

W21e

CDP NO. 5-18-0394 (FARIBA AND MORTEZA DANESH)

MARCH 6, 2019

EXHIBITS

Exhibit 1– Commission staff's determination of bluff edge compared to that the applicant.

Exhibit 2 – Project Location/Vicinity Map

Exhibit 3 – Project Plans

Exhibit 4 – Geotechnical Review Memorandum for 449 Paseo de la Playa (Danesh Residence), CDP Application no. 5-17-0134, prepared by Senior Environmental Scientist Joseph Street, and Senior Coastal Engineer, Lesley Ewing on February 20, 2018.

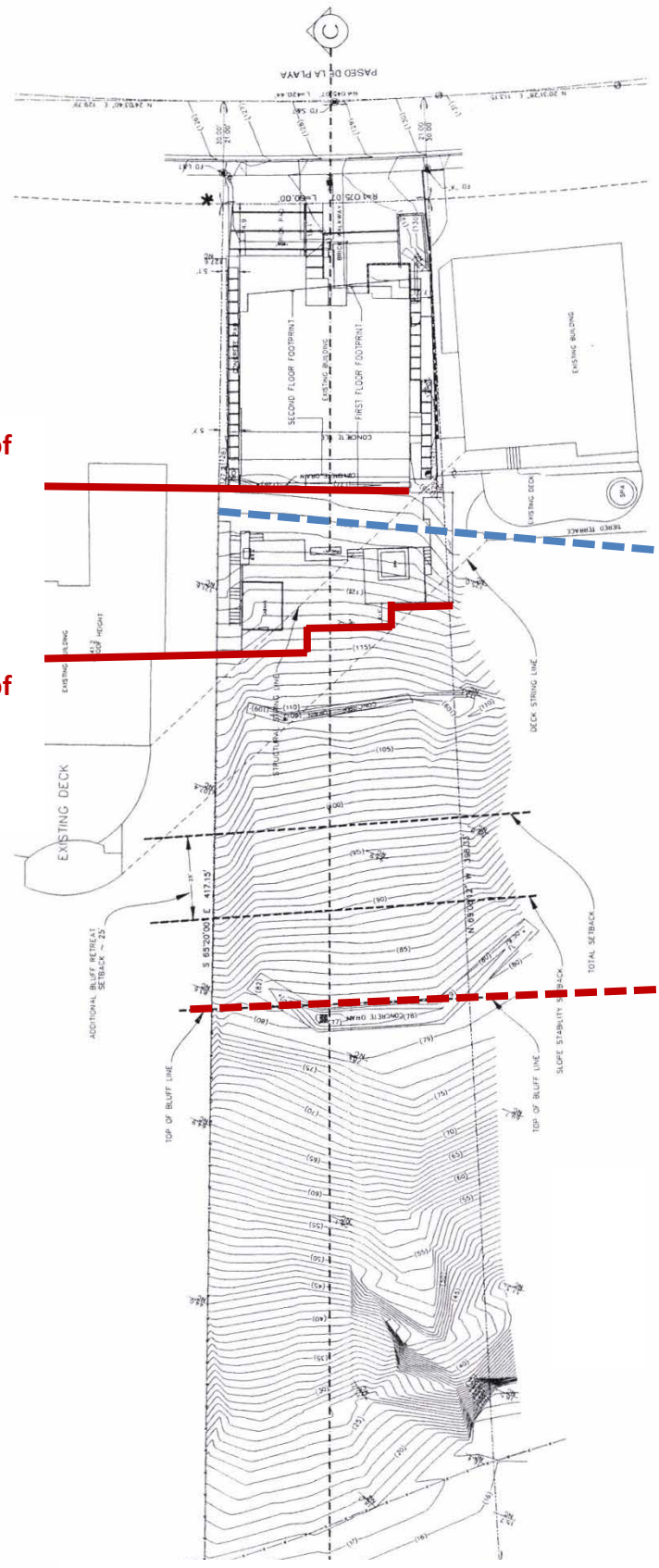
Exhibit 5 – Supplemental Geotechnical Review Memorandum for 449 Paseo de la Playa (Danesh Residence), CDP Application No. 5-18-0394, prepared by Staff Geologist, Joseph Street, and Senior Coastal Engineer, Lesley Ewing on January 18, 2019.

Exhibit 6 – Habitat Survey for 529 and 533 Paseo de la Playa, Coastal Development Permit Application No. 5-17-0630, prepared by Biologist Dan Rosie on July 21, 2017

Exhibit 7 – Site photos of existing vegetation

Exhibit 8 – Site photos of geologic conditions on neighboring slope at 501 Paseo de la Playa

Exhibit 9 – Bluff Edge Delineation Study and Establishment of Development Setback Response to California Coastal Commission Notice of Incomplete Application [Coastal Development Permit Application No. 5-18-1394] 449 Paseo de la Playa, Redondo Beach, California, prepared by Hamilton & Associates on September 4, 2018.



Site Plan

Coastal Commission
Exhibit 1
Page 1 of 1

COASTAL COMMISSION

EXHIBIT # 2

PAGE 1 OF 2

Coastal Commission
Exhibit 2
Page 2 of 2

NEW SITE STRING LINES

EXISTING SITE STRING LINES

ISSUED:
PLAN CHECK
PERMIT SET

449 PASLO DE LA PLAYA
REDONDO BEACH, CA, 90277

SITE STRING LINES

LICENSED ARCHITECT
BIJAN ARMANDPOUR
No. C 15034
Ren.
STATE OF CALIFORNIA

bijan & associates
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1323.655.6449
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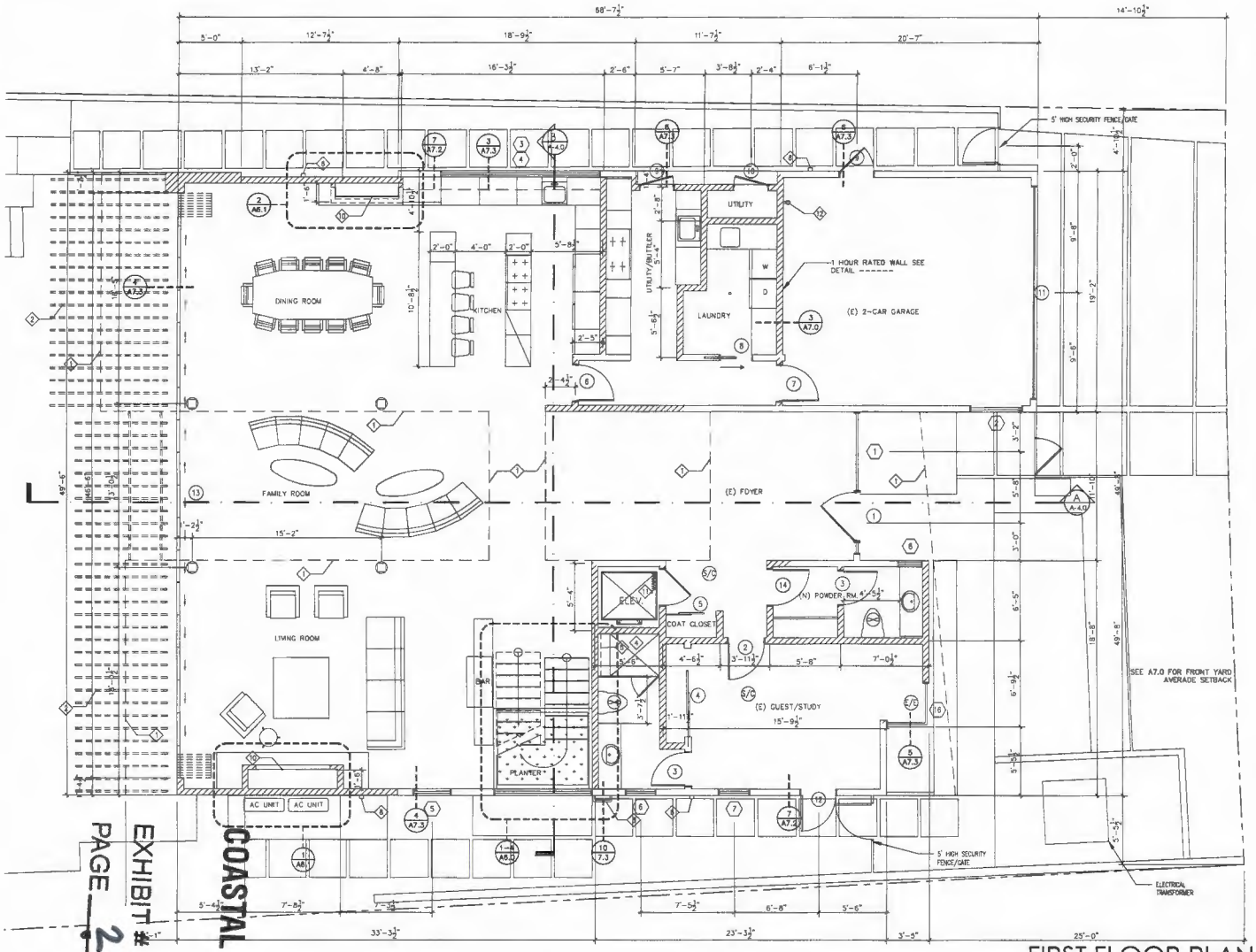
COASTAL COMMISSION
EXHIBIT # 3
PAGE 1 OF 4



FIRST FLOOR PLAN

KEYNOTES

1. FLOOR /ROOF LINE ABOVE
2. TRELLIS ABOVE
3. BUILDING LINE BELOW
4. SHOWER ENCLOSURE & DOOR
5. RAIN SHOWER & LINEAR DRAIN. PROVIDE SLOPE IN 1 1/2" LT. WEIGHT CONC.
6. CABLE GUARDRAIL, SEE DETAIL ------
7. AREA DRAIN, PROVIDE 1/4"/FT MIN. SLOPE TOWARD DRAIN, SEE DETAIL ------
8. BONDERIZED DOWNSPOUT
9. ROOF ACCESS LADDER
10. DIRECT VENT/ SEALED COMBUSTION, FIREPLACE, AS MANUFACTURED BY HEATNGLO, FIRE PLACE VENT PER MANUF. REQUIREMENTS
11. PROPOSED LOCATION OF FUTURE CHARGING STATION. INSTALL A MIN. 1" (INSIDE DIA.) LISTED RACEWAY TO ACCOMMODATE A DEDICATED 208/240 VOLT BRANCH CIRCUIT. RACEWAY ORIGINATING FROM MAIN SERVICE PANEL & TERMINATING IN LISTED CABINET. SEE NOTE #8.
12. ELEVATOR HOISTWAY W/ CABLE DRIVE OPERATION & RAIL BRACKETS BY ACME, CUSTOM ELEVATOR OR APPROVED EQUAL. 5'-0" X 4'-10" INSIDE CLEAR DIMENSION, PROVIDE 10" DEEP PIT IN BASEMENT W/SUMP PUMP

LEGEND

0.00 T.O.D. — TOP OF DRAIN ELEVATION

0.00 T.O.P. — TOP OF PARAPET ELEVATION

0.00 F.R. — FINISHED ROOF

NORTH

LEGEND

(N) WALL/PARTITION

(E) WALL TO REMAIN

(E) WALL TO REMOVE

EXHAUST FAN WITH MINIMUM 5 AIR EXCHANGES PER HOUR. FANS SHALL BE "ENERGY STAR" COMPLIANT & BE DUCTED TO TERMINATE TO THE OUTSIDE OF THE BUILDING. FANS NOT FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM MUST BE CONTROLLED BY A HUMIDITY CONTROL.

S/C — COMBINation SMOKE DETECTOR AND CARBON MONOXIDE ALARM:
HARD WIRE SMOKE DETECTOR W/ BATTERY BACKUP & LOW BATTERY SIGNAL, SD SHALL SOUND AN ALARM IN ALL SLEEPING AREAS OF THE DWELLING UNIT IN WHICH THEY ARE LOCATED.
CARBON MONOXIDE ALARMS, FOR NEW CONSTRUCTION , AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WHEN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES (CBC 420.4)

E/E — EMERGENCY EXIT, MIN. 5.7 S.F. OPENING

PLAN NOTES

1. "SPRINKLER SYSTEM TO BE APPROVED BY PLANING DIVISION PRIOR TO INSTALLATION"
2. FLAME -SPREAD CLASSIFICATION & INDEX FOR MATERIAL IN ENCLOSED VERTICAL EXIT WAYS & OTHER EXIT WAYS & ROOMS/AREAS SHALL BE ACCORDING TO TABLE 8-A OF CHAPTER 8 OF UBC 1997AS INDICATED HEREIN.
   CLASS I , FLAME -SPREAD INDEX 0-25 IN ENCLOSED VERTICAL EXIT WAYS.
   CLASS II FLAME -SPREAD INDEX 26-75 IN OTHER EXIT WAYS
   CLASS III, FLAME SPREAD INDEX 76-200 IN ROOMS OR AREA.
3. ALL SHOWER HEADS AND WATER CLOSETS SHALL BE OF LOW CONSUMPTION TYPE AS REQUIRED AND APPROVED BY LOCAL GOVERNMENT AGENCIES.
4. THE WALL COVERING SHALL BE CEMENT PLASTER, TILE OR APPROVED EQUAL 70" ABOVE THE DRAIN @ THE SHOWERS OR TUBS WITH SHOWERS MATERIALS OTHER THAN A STRUCTURAL ELEMENTS SHALL BE MOISTURE RESISTANT. GLASS ENCLOSURE DOORS AND PANELS MUST BE LABELED CATEGORY II, SWING THE DOOR OUTWARD .NET AREA OF SHOWER RECEPTOR SHALL BE NOT LESS THAN 1024 SQ. IN. OF FLOOR AREA, AND ENCOMPASS 30" DIAMETER CIRCLE.
5. FINISH FLOOR SURFACE SHALL BE OF SLIP RESISTANT MATERIAL.
6. ALL FIRE PLACES SHALL BE DIRECT-VENT, SEALED COMBUSTION TYPE. WOOD BURNING OR PELLET STOVE ARE PROHIBITED & SHALL NOT BE INSTALLED.
7. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS BEFORE ORDERING DOORS, WINDOWS, EQUIPMENT & APPLIANCES.
8. PROVIDE INFRASTRUCTURE FOR FUTURE INSTALLATION OF ELECTRIC CHARGING STATION. PROVIDE SUFFICIENT CONDUCTOR SIZE & SERVICE CAPACITY TO INSTALL LEVEL 2 EVSE. A LABEL STATING "EV CAPABLE" SHALL BE POSTED IN A CONSPICUOUS PLACE AT THE SERVICE PANEL OR SUBPANEL & NEXT TO THE RACEWAY TERMINATION POINT.

ISSUED:
PLAN CHECK
PERMIT SET

449 PASEO DE LA PLAYA
REDONDO BEACH, CA, 90277

PROPOSED FIRST FLOOR PLAN

LICENSED ARCHITECT BIJAN ARMANDPOUR No. C 15634 Exp. STATE OF CALIFORNIA

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architecture.planning.sustainable design.engineering.interior design
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1323.655.6499
109 SIERRA STREET, EL SEGUNDO, CA. 90245

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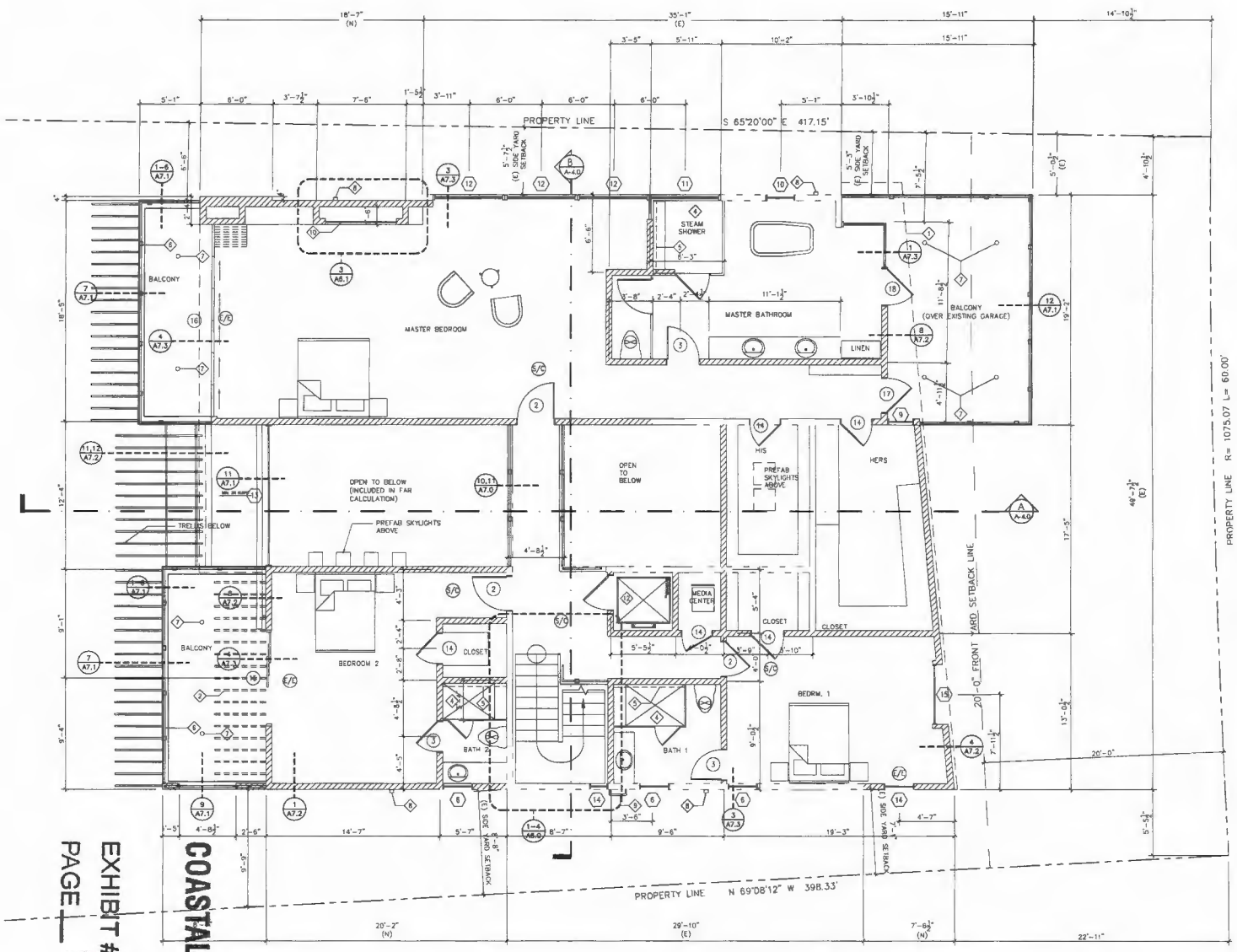

SECOND FLOOR PLAN

KEYNOTES

1. FLOOR /ROOF LINE ABOVE
2. TRELLIS ABOVE
3. BUILDING LINE BELOW
4. SHOWER ENCLOSURE & DOOR
5. RAIN SHOWER & LINEAR DRAIN. PROVIDE SLOPE IN 1 1/2" LT. WEIGHT CONC.
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LEGEND

- 0.00 T.O.D. — TOP OF DRAIN ELEVATION
- 0.00 T.O.P. — TOP OF PARAPET ELEVATION
- 0.00 F.R. — FINISHED ROOF
- NORTH

LEGEND

- (N) WALL/PARTITION
- (E) WALL TO REMAIN
- (E) WALL TO REMOVE
- EXHAUST FAN WITH MINIMUM 5 AIR EXCHANGES PER HOUR. FANS SHALL BE "ENERGY STAR" COMPLIANT & BE DUCTED TO TERMINATE TO THE OUTSIDE OF THE BUILDING. FANS NOT FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM MUST BE CONTROLLED BY A HUMIDITY CONTROL
- S/C COMBINation SMOKE DETECTOR AND CARBON MONOXIDE ALARM: HARD WIRE SMOKE DETECTOR W/ BATTERY BACKUP & LOW BATTERY SIGNAL, SD SHALL SOUND AN ALARM IN ALL SLEEPING AREAS OF THE DWELLING UNIT IN WHICH THEY ARE LOCATED. CARBON MONOXIDE ALARMS, FOR NEW CONSTRUCTION , AN APPROVED CARBON MONOXIDE ALARM SHALL BE INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WHEN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES (CBC 420.4)
- E/E EMERGENCY EXIT, MIN. 5.7 S.F. OPENING

PLAN NOTES

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ISSUED:
PLAN CHECK
PERMIT SET

449 PASEO DE LA PLAYA
REDONDO BEACH, CA, 90277

PROPOSED SECOND FLOOR PLAN

LICENSED ARCHITECT
BIJAN ARMANDPOUR
No. C 15034
Ren.
STATE OF CALIFORNIA

bijan & associates
www.bijan.la
architecture planning sustainable design engineering interior design
109 SIERRA STREET, EL SEGUNDO, CA. 90245
(323)655.6404
(323)655.6499

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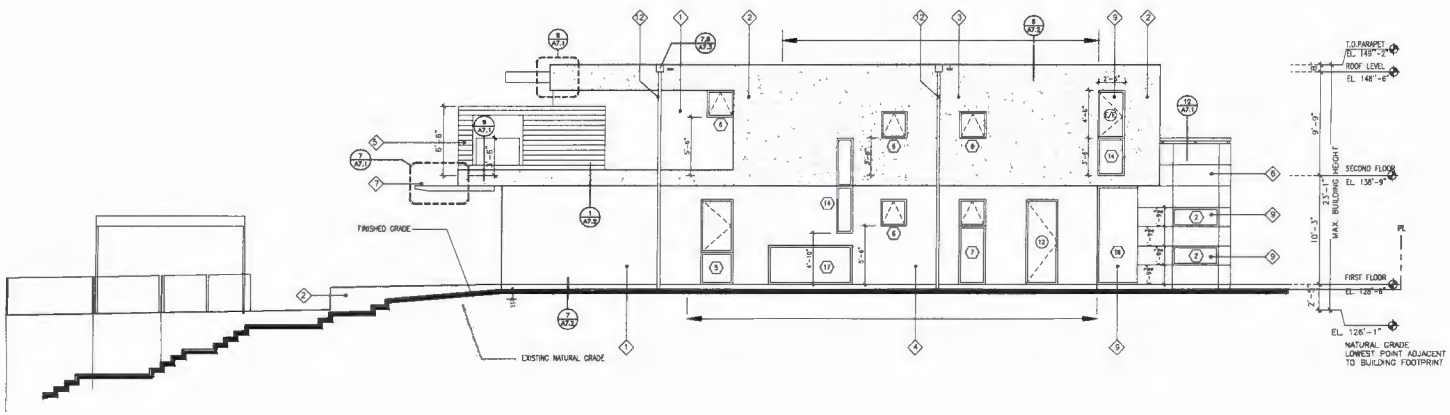
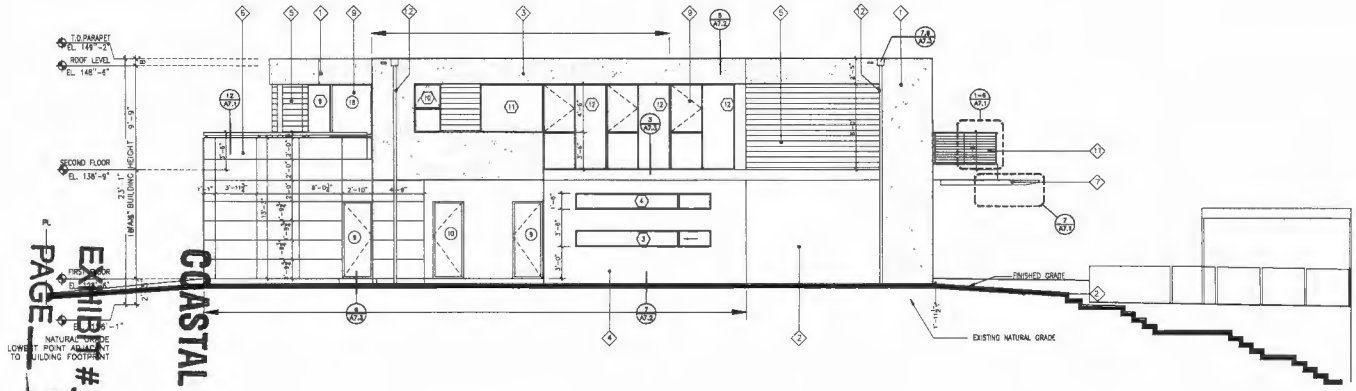


1 SOUTH ELEVATION



2 NORTH ELEVATION

MATERIAL LEGEND:

1. GRAY COLOR, EXTERIOR PAINT BY [DUNN-EDWARDS] OVER STEEL- TROWELED CEMENT PLASTER
2. STANDARD WHITE COLOR, EXTERIOR PAINT BY [DUNN-EDWARDS] OVER STEEL- TROWELED CEMENT PLASTER
3. GRAY COLOR, EXTERIOR PAINT BY [DUNN-EDWARDS] OVER EXISTING CEMENT PLASTER
4. STANDARD WHITE COLOR, EXTERIOR PAINT BY [DUNN-EDWARDS] OVER EXISTING CEMENT PLASTER
5. ½" X 6" HORIZ. COMPOSITE HIGH DENSITY SIDING BY "RESYSTA"
6. PAINTED "HDO" PLYWOOD PANELS
7. PAINTED 2X12 REDWOOD TRELLIS @ 12" O.C.
8. PIVOT HINGED ENTRY DOOR
9. POWDERED-COAT ALUM. WINDOW/DOOR WITH TINTED SHATTER-PROOF GLAZING
10. PAINTED 2X6 REDWOOD WINDOW SLATS
11. 42" HIGH STAINLESS STEEL CABLE RAILING
12. 25 GA. BONDERIZED SCUPPER/ LEADER/ OVERFLOW DRAIN& 3"ø DOWNSPOUT- SEE DETAIL --------

ISSUED:
PLAN CHECK
PERMIT SET

449 PASEO DE LA PLAYA
REDONDO BEACH, CA, 90277

PROPOSED BUILDING ELEVATIONS

LICENSED ARCHITECT
BIJAN ARMAMDOOST
No. C 15034
Exp: 4
STATE OF CALIFORNIA

bijan & associates
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f 323.655.6499

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2018/04/26

STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *GOVERNOR*

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
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February 20, 2018

GEOTECHNICAL REVIEW MEMORANDUM

To: Mandy Revell, Coastal Program Analyst

From: Joseph Street, Senior Environmental Scientist
Lesley Ewing, Senior Coastal Engineer

Re: 449 Paseo de la Playa (Danesh Residence), CDP Application #5-17-0134

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

1) Bijan & Associates, 2017, "Site Topography – Site Section,", Sheet A1.2 of Site Plans for 449 Paseo de la Playa, Redondo Beach, CA, dated May 25, 2017.
2) Hamilton & Associates, Inc., 2017, "Static Slope Stability after 75-year (25') bluff retreat", slope stability analysis output dated June 24, 2017.
3) Hamilton & Associates, Inc., 2017, "Bluff Edge Delineation Study and Establishment of Development Setback in Response to California Coastal Commission Review – Westerly Slope 449 Paseo De La Playa, Redondo Beach, California", geotechnical report dated July 3, 2017, and signed by B.J. Miller, M.F. Mills (CEG 994), D.T. Hamilton (GE 2721) and E.E. Vicente (GE 2302).
4) Hamilton & Associates, Inc., 2018, "Geologic Section C-C' – Bluff Edge Delineation Study", updated site section indicating 75-year slope profile, dated January 22, 2018.
5) California Coastal Commission, 1990, "Coastal Development Permit, 5-90-868, for 449 Paseo de la Playa, approved 10/10/90; for after-the-fact site grading and restoration.

We also reviewed the following documents, from the permit file of a previous CDP issued for the property immediately to the south (CDP #s 5-01-018; 5-01-409), which provide additional local geologic information and context:

6) Coastline Geotechnical Consultants, Inc., 2000, "Geotechnical Engineering Investigation Report – Proposed Spa, Deck and Exterior of House, 501 Paseo de la Playa, Redondo Beach, CA", geotechnical report dated August 8, 2000, signed by A.F. Dia and R.A. Martin (RGE 563).
7) GWC Architects, 2001. "Historical Grading – Revised Old Map Per Coastal Comm. Requirements, 3-10-01", notated version of June 3, 1961 plans prepared for Gargon Builders. Received by CA Coastal Commission South Coast Region on March 30, 2001.

8) AGA Design Group, 2002. "Landscape Plan" and "Grading Plan" for Conger Residence, 501 Paseo de la Playa, Torrance, CA. Received by CA Coastal Commission South Coast Region on June 4, 2002.

9) Johnsson, M., 2001, "Geologic Review Memorandum", prepared by Coastal Commission Senior Geologist Mark Johnsson for CDP #5-01-018 (Conger), dated July 12, 2001.

10) Johnsson, M., 2001, "Geologic Review Memorandum", prepared by Coastal Commission Senior Geologist Mark Johnsson for Reconsideration of CDP #5-01-018 (Conger), dated September 18, 2001.

In addition, we reviewed photographs of the project site taken by Commission staff and aerial photos collected by the California Coastal Records Project (http://www.californiacoastline.org/). The purpose of this memorandum is to evaluate the location of the bluff edge, slope stability and long-term bluff retreat on the subject property.

Memo Summary

As described below, we do not agree with the determination by applicant's representatives that the bluff edge is at approximately +80 feet Mean Sea Level (MSL). Rather, we have determined that the +125 foot MSL contour more correctly identifies the bluff edge, as defined by the California Coastal Regulations (Cal. Code Reg. Title 14, §13577(h)) We are in agreement with the applicant's representatives that the bluff slope at the project site is currently grossly stable, and that long-term bluff retreat occurring at historical rates would not directly undermine the existing dwelling and proposed additions. To account for surficial slumping, erosion at the toe of the slope and steepening of the bluff face, we also recommend a 25-foot setback from the bluff top (125 foot MSL contour) for all permanent structures.

Project Summary

The applicant has proposed a number of improvements to the property, including (a) remodel and addition to the existing house, with the addition on the seaward side of the house that would extend its footprint approximately 17 feet seaward of its current position, into an area currently occupied by an outdoor patio and lawn; and (b) installation of patio/spa on a constructed flat pad, supported by a retaining wall at the seaward edge and that will extend approximately 47 feet seaward of the existing house.

Site Description

As discussed in greater detail in references (3), (5) and (6), the coastal bluff at the site is a composite bluff consisting of fill, poorly-consolidated marine and non-marine terrace deposits underlain by shale and siltstone bedrock known as the Malaga Mudstone, a component of the Miocene-aged Monterey Formation (see **Attachment 1**). Further south, on the Palos Verdes Peninsula, uplifted wave-cut platforms carved from the Miocene bedrock form steep seacliffs; in the project area where the bedrock is overlain by 60 -70 feet of less resistant terrace deposits, erosional processes have resulted in a more gradual transition and lower-gradient slopes between the top of the marine terrace (bluff top) and the shoreline. At the project site, the bluff slope extends from near the seaward edge of the existing dwelling, at an elevation of approximately +128 feet MSL, to the beach below, at an elevation of approximately +16 feet MSL.

Exploratory borings described in reference (3) indicate that the upper bluff materials can be subdivided into at least three distinct components: (a) Sand fill, 2 – 3 feet thick, likely placed during the original development of Paseo de la Playa and prior to the construction of the existing house or placed in connection with the approximately 971 cubic yards of grading undertaken in 1987/88 for slope restoration (Ref. 5). This fill layer was detected in borehole B-1 on the bluff top, landward of the house, but not in boreholes collected further down the bluff face; (b) natural silty sand ("Old Sands", "Q_{os}") extending to a depth of about 10 feet below the bluff top surface (to +117-118 ft MSL); and (c) lightly-cemented, medium to coarse sands of the San Pedro Formation ("Q_{sp}") to a depth of about 56 feet (+73 feet MSL). This characterization of the upper bluff is consistent with a previous subsurface investigation of the bluff on the property immediately to the south of the current project site (501 Paseo de la Playa, Ref. 6). In reviewing geologic conditions at this neighboring site in 2001, the Commission's senior geologist, Dr. Mark Johnsson, concluded that the placement of artificial fill material had substantially altered the profile of the natural bluff, raising the elevation of the bluff top and burying the natural bluff edge (Refs. 7 - 10).

The terrace deposits of the upper bluff slope are susceptible to subaerial erosion, as evidenced by landslides and slope failures along the bluff south of the project site, and by previous surficial slumps occurring on the upper bluff at the project site itself (Refs. 3, 5, 6).[1] Three existing concrete swales that traverse the bluff slope at the project site (at elevations 127 ft, 100 ft, and 75 ft MSL) were required as a permit condition the Commission's 1990 approval of the slope restoration (Ref. 5). The upper bluff face is characterized by relatively gentle slopes of 25 to 33% (4:1 to 3:1, horizontal:vertical) (*see* **Attachment 2**).

The Malaga mudstone bedrock that underlays the site is exposed on the lower bluff face, below an elevation of approximately +50 feet MSL. The bedrock portion of the bluff face is exposed to at least occasional wave impact at its toe, and is characterized by steeper gradients of up to 50% (2:1 H:V).

Determination of Bluff Edge

As noted above, the bluff at the project site, though large (total relief of ~ 112 feet, from about +128 feet MSL to +16 feet MSL), has a relatively gentle slope that steepens only gradually moving toward the beach; nonetheless, as shown in site cross-sections (**Attachments 1, and 2**) and photos, the transition from the flat bluff top to the descending bluff slope is readily apparent, occurring immediately seaward of the existing house. The bluff, as well as the slope of the bluff face has been modified at least three times; once to create the road and building pads for the development along Paseo de la Playa. later, in 1987/88 by about 931 cubic yards of grading, and subsequently through the Commission approved 1990 restoration.

[1] Reference (6) describes the bluff slope at 501 Paseo de la Playa as "partially unstable and creeping", and estimates that surficial creep on the bluff face may occur to a depth of 4 feet below the surface.

The Coastal Commission's regulations (Cal. Code Reg. Title 14, §13577(h)) define the bluff edge and provide guidance on determining the location of the bluff edge:

> *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 surfaces 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 as the cliff edge.*

Pursuant to this definition, and based on the existing topography, the bluff edge on the subject property appears to occur at an elevation of +128 ft MSL and along this contour across the parcel (**Attachment 2**). This contour is the "point nearest the cliff beyond which the downward gradient … increases more or less continuously until it reaches the general gradient of the cliff." As shown in the site cross-sections (**Attachments 1, 2**) the slope of the bluff face undergoes a general increase from a ~4:1 (H:V) gradient in "Slope Facet 2", near the top of the bluff, to a 3:1 gradient in "Slope Facet 3", to a 2:1 gradient in "Slope Facet 4" near the base of the bluff.

Applicant's "Top of Bluff" Line
In contrast, the applicant's geotechnical consultant identifies a "top of bluff line" roughly halfway down the bluff slope at an elevation of approximately +80 feet MSL (approximately 50 feet below the elevation of the existing house). Though not explained in reference (3), this positioning of the top of bluff line appears to rely on a localized decrease in the gradient of the slope occurring near the lowermost concrete swale built into the face if the bluff. While the natural, unaltered shape of the bluff at this location is unknown, this slope transition was part of the slope restoration (Ref. 5) and is a manufactured feature placed in the middle of the bluff slope to provide for safe site drainage. Regardless of the origin of this swale, the Commission's bluff edge definition expressly accounts for this sort of small-scale, localized variability in slope through its stipulation that the gradient increase only *more or less* continuously, rather than *strictly* continuously, and through its guidelines for addressing "steplike features" on the bluff face. At most, the applicant's "top of bluff" corresponds to just such a steplike feature, but one that is part of a nearly continuous slope that rises approximately 50 feet more (i.e., another "riser") before reaching clearly apparent slope transition to the level area upon which the existing house has been constructed. In conclusion, the applicant's top of bluff line does not represent the position of the bluff edge as defined by Coastal Commission regulations.

Influence of Previous Fill on Location of the Bluff Edge
An additional factor to consider in determining the location of the bluff edge at the project site is that the natural bluff profile has been previously altered by the placement of fill prior to the construction of the existing dwelling and more recently through the 1987/88 grading and the 1990 restoration (Ref. 5). As noted above, the data from borehole B-I (Ref. 3) indicate that the placement of sandy fill artificially raised the elevation of the building pad and bluff top by approximately 2 to 3 feet. A similar amount of fill material was detected in boreholes drilled into the bluff top at 501 Paseo de la Playa, immediately south of the project site (Ref. 5). Although

direct evidence of the lateral extent and thickness of the fill on the upper bluff face and at the apparent natural bluff edge is lacking, it is reasonable to assume that the placement of artificial fill during the original development of the parcel buried or otherwise obscured the natural bluff edge. This assumption is further supported by several pieces of evidence:

- Historical plans (dated 1961) contained in the file for CDP #5-01-018/5-01-409 (501 Paseo de lay Playa) and predating the original development of the homes along this section of the street, depict an "irregular top of cliff" line tens of feet seaward of both the existing house at 449 Paseo de la Playa and the 128-ft elevation contour (Ref. 7). While this historical top-of- bluff line in itself does not provide a basis for determining the present-day bluff edge, it does provide some indication that substantial alterations to the bluff profile, consistent with the presumed placement of fill on the upper bluff, have occurred since the 1960s.

- The Commission has concluded previously that a substantial amount of fill material was placed on the bluff slope on the property immediately to the south of the project site (501 Paseo de la Playa, CDP #5-01-018/5-01-409). In his September 2001 memo reviewing the geology of this neighboring site (Ref. 9), Dr. Johnsson noted that borings taken on the bluff top and bluff face seaward of the existing house "found 3 to 8 feet of fill overlying natural soils and marine terrace deposits ..." Dr. Johnsson concluded that these data "confirm the applicant's contention that the slope immediately seaward of the residence is primarily built up from artificial fill ... the slope in question should be considered substantially a fill slope." On the basis of this borehole data, Dr. Johnsson concurred with Coastline Geotechnical's identification of the natural bluff edge approximately 36 feet seaward of the remodeled house at 501 Paseo de la Playa, at a reported elevation of +120 feet (*see* Ref. 7).[2]

- The 1990 Commission approved slope restoration plans (Ref. 5, Exhibits 2 and 3) show a 30 inch fill blanket at the building area at the uppermost part of the slope. In addition, there is a slight rise seaward of this blanket for the intersection of the flat building area and the slope face. The plans are not of sufficient detail to provide an estimate of this rise, but this could increase the 30 inch thick fill blanket to approximately 36 inches at the slope intersection. This would decrease the elevation of the slope intersection, prior to the constructed fill by approximately 3 feet.

At 449 Paseo de la Playa, there is no site-specific data as to the extent and thickness of artificial fill on the bluff slope other than the 2-3 foot thick layer of fill identified at borehole B-1, located on the bluff top, inland of the existing house, at an elevation of +128 ft MSL (Ref. 3). Assuming

[2] There is an offset of approximately 5 feet between the elevations reported in the 2002 As-Built Plans for 501 Paseo de La Playa (CDP 5-01-409) and the 2017 Project Plans submitted for 449 Paseo de la Playa (CDP application [insert]), likely reflecting the use of a different baseline or datum. For example, the +120 foot elevation contour in the 2002 plans corresponds to the +125 foot contour in the 2017 plans for the subject project.

that approximately 3 feet of fill was placed across the site (Ref. 5), the pre-existing bluff top elevation was at about +125 feet MSL. This conclusion is supported by the observation that the natural bluff edge line as determined for the neighboring property (Refs. 8, 10) occurs at an elevation of approximately +125 feet MSL where it crosses onto the project parcel (Ref. 1).

Without the collection of additional, site-specific information, the natural bluff profile and bluff edge line at the project site cannot be accurately reconstructed. However, a conservative assumption, which accounts for the available data on fill depth and is in keeping with the previously-determined natural bluff edge at a neighboring site, is that the natural bluff edge line is approximated by the +125 foot elevation contour (see **Attachment 2**).

Slope Stability & Bluff Retreat

References (2), (3) (4) and (5) together address other geologic hazards at the site, including slope stability and long-term bluff retreat. The lower slope is underlain by the Monterey Formation, which is known to be subject to landslides, but at the project site the bedding is described as "tightly folded along fold axes that are perpendicular to the subject slope" (Ref. 3), a configuration in which bedding planes would tend not to be exposed on the bluff face. The upper slope is underlain by marine terrace deposits. A quantitative slope stability analysis in reference (3) indicates that the slope is globally stable (factor of safety > 1.5 static, > 1.05 pseudo-static) with respect to sliding. The proposed house additions at the top of the bluff would be set back over 100 feet from the hypothetical failure surfaces corresponding to these factors of safety; the setback of the proposed secondary structures (patio, spa on a constructed slope that will be supported by a retaining wall), would be significantly smaller, on the order of 50 feet. Reference (3) also reports a greater than 1.5 factor of safety against surficial sliding.

Nevertheless, it is acknowledged that landslides and episodic slope failures have occurred along the lower Paseo de la Playa bluff, particularly to the south of the project site where the coastal bluff is steeper than at the project (Ref. 3). The upper bluff slope is also subject to surficial sliding and creep, as evidenced by erosional features on the adjacent slope at 501 Paseo de la Playa (*see* **Attachment 3**) and past slumping events on the upper bluff at the project site (Ref. 5).

Due to its proximity to several active faults, including the Newport-Inglewood fault and the Palos Verdes Fault, the site can be expected to experience severe ground shaking during the economic life of the development, and has been mapped by the CA Division of Mines and Geology within an earthquake-induced landslide zone (Ref. 3). The slope stability analyses indicate, however, that the slope will be grossly stable even during such shaking. Nevertheless, minor surficial slumps or ground cracking may occur. Due to its elevation above the presumed ground water table, and the density and grain size of the terrace deposits directly underlying the proposed development, the liquefaction hazard is low.

The applicant's consultants have estimated long-term retreat of the lower bluff (**Attachments 1 & 2**, "Facet 4") of approximately 20 feet between 1924 and 2017, based on an analysis of recent and historical aerial photographs (to 1952) and a 1924 USGS topographic map (Ref. 3). Accounting for measurement uncertainties, they suggest an upper-bound long-term retreat rate of four inches per year. While acknowledging the likelihood of future sea level rise over the

anticipated 75-year life of the proposed project, they do not attempt to account for its potential effects on the long term bluff retreat rate, stating only that its effects would "likely be small." Using the estimated retreat rate of four inches per year (0.33 ft/yr), they estimate a total 75-year bluff retreat of 25 feet, occurring entirely within the lower portion of the bluff subject to marine erosion (Ref. 4) (**Attachment 1**). Upper bluff erosion is considered to be negligible provided that existing drainage controls are maintained and appropriate additional drainage measures are included in the proposed project.

We generally concur with the assessment of reference (3) that the bluff slope at the project site is currently grossly stable, and that long-term bluff retreat occurring at historical rates would not directly undermine the existing dwelling and proposed additions. However, we also conclude, based on present-day observations and past events that continued surficial creep, slumps, and gullying at the site are to be expected. Erosion on the upper bluff could also occur in response to the expected steepening of the lower bluff over the long term due to marine erosion (Ref. 4), which is likely to be exacerbated by sea level rise. Upper bluff instability could increase markedly if existing drainage controls are not maintained, or if appropriate drainage controls are not implemented as part of the proposed development. We also cannot rule out the possibility of more significant landslides similar to those that have occurred on the bluff elsewhere in the area. Based on these considerations, and on the inherent uncertainty associated with predicting geologic processes into the future, we recommend that new development at the project site be set back from the bluff edge by 25 feet in order to assure stability over the life of the development. We additionally recommend that the permit be conditioned such that all of the approved development shall be removed if it becomes threatened by erosion. That is, no future bluff face or bluff top protective devices, such as retaining walls, should be permitted to protect the development.

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

Sincerely,

Signature

Joseph Street, Ph.D.
Senior Environmental Scientist

Signature

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

Attachment 1: Geologic Section C-C' (Updated 1-22-18; from Bluff Edge Determination Study by Hamilton & Associates.

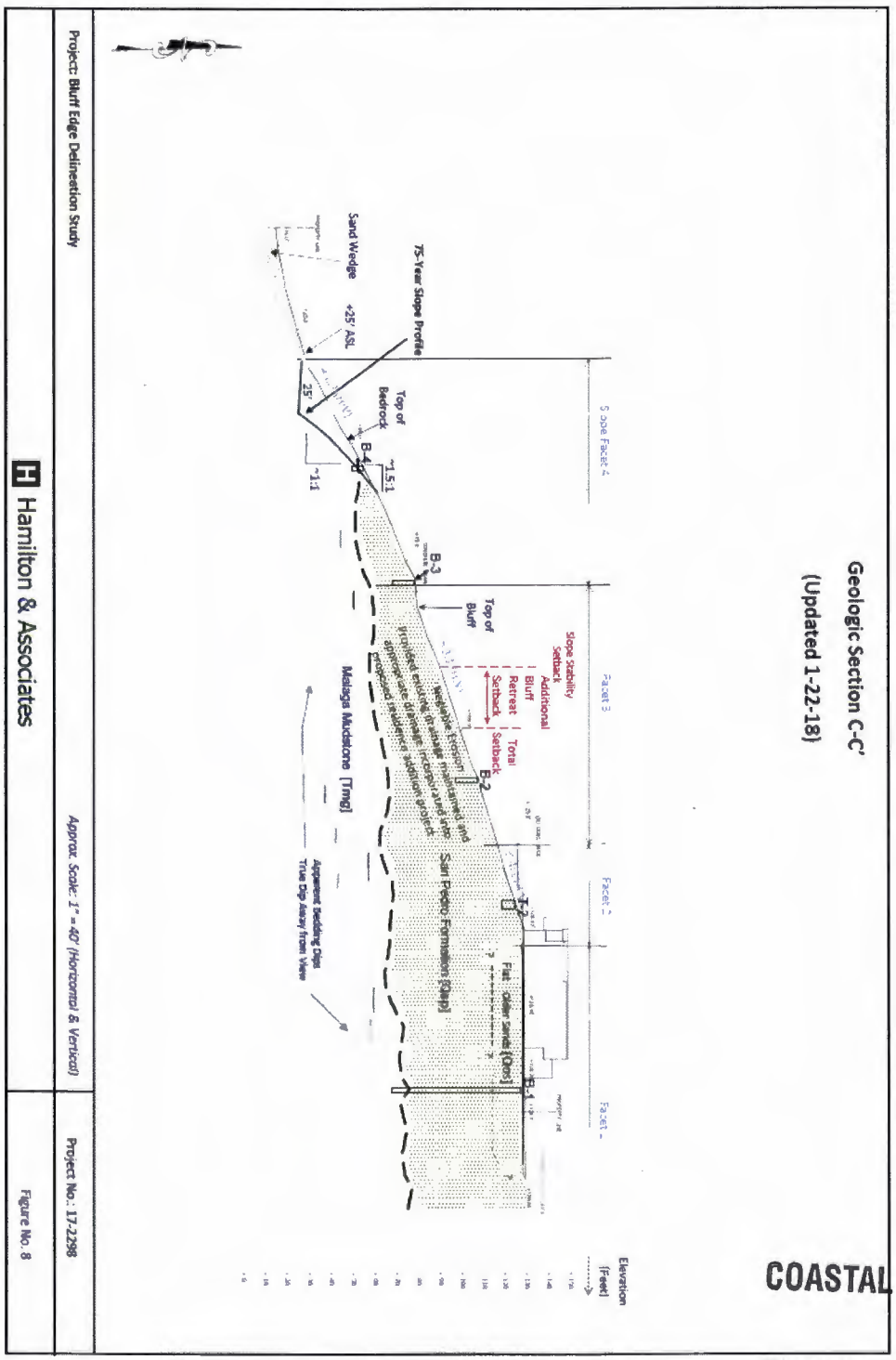

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EXHIBIT # 4
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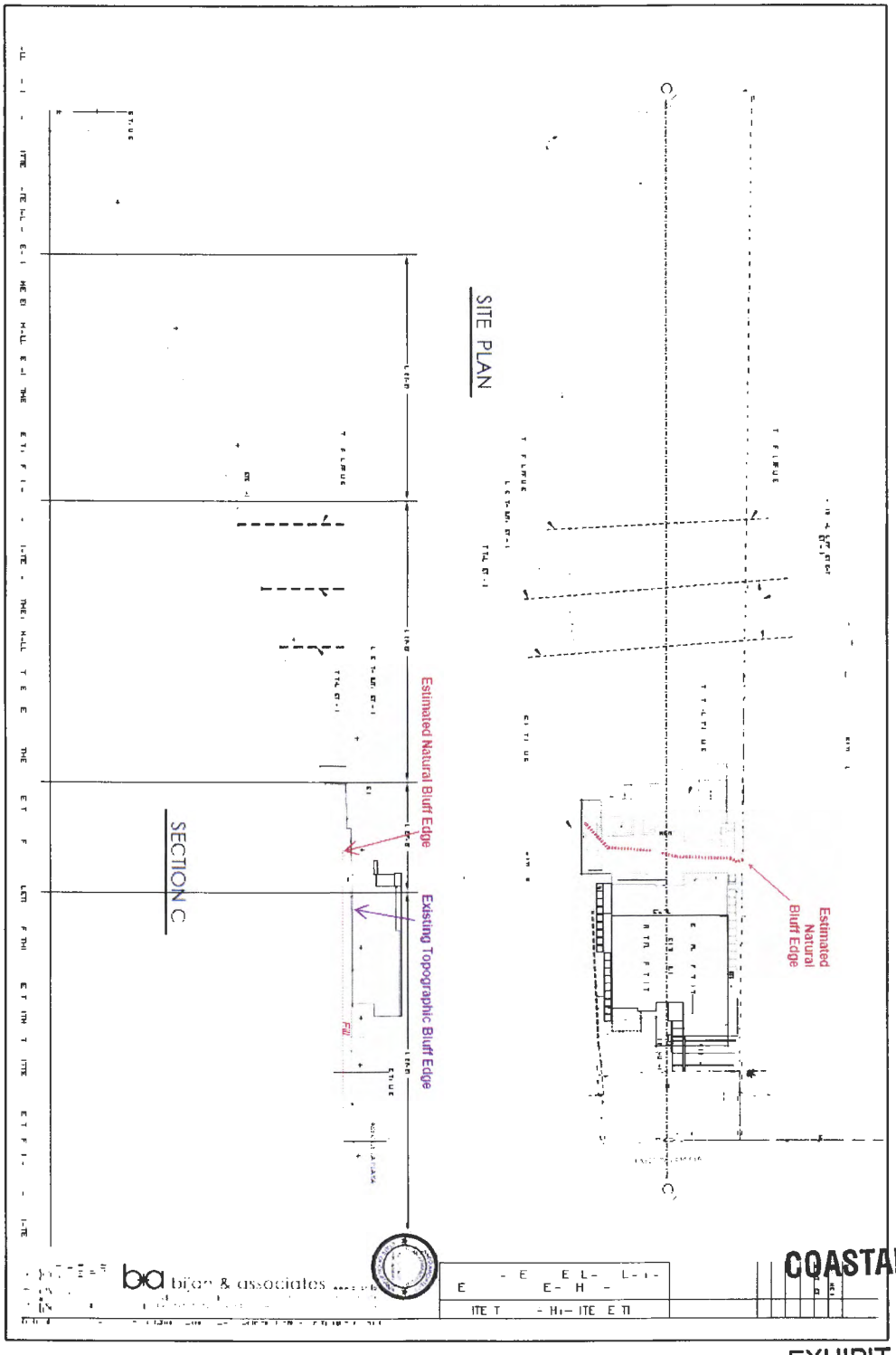
Attachment 2: Site Topography- Site Section, Sheet A 1.2, prepared by bijan & associates for 449 Paseo de la Playa, Redondo Beach, CA 90277



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CALIFORNIA COASTAL COMMISSION
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January 18, 2019

SUPPLEMENTAL GEOTECHNICAL REVIEW MEMORANDUM

To: Mandy Revell, Coastal Program Analyst
From: Joseph Street, Staff Geologist
Lesley Ewing, Senior Coastal Engineer
Re: 449 Paseo de la Playa (Danesh Residence), CDP Application #5-18-0394

The purpose of this memorandum is to supplement our previous geotechnical review, dated February 20, 2018, to respond to new materials submitted by the applicant's geotechnical consultant in support of the above-referenced coastal development permit (CDP) application. To this end, we have reviewed the following report:

1) Hamilton & Associates, Inc., 2018, "Bluff Edge Delineation Study and Establishment of Development Setback -- Response to California Coastal Commission Notice of Incomplete Application [Coastal Development Permit Application No. 5-18-0394], 449 Paseo De La Playa, Redondo Beach, California.", geotechnical report dated September 4, 2018, and signed by B.J. Miller, M.F. Mills (CEG 994), D.T. Hamilton (GE 2721) and E.E. Vicente (GE 2302).

In addition, Dr. Street has visited the beach fronting the bluff at the project site.

Reference (1) provides new discussion addressing past modifications of the coastal bluff at the project site and the position of the bluff edge; and the location of a "safe building line" or geologic setback necessary to minimize hazards from slope failures and bluff erosion, and assure the stability of the proposed project.

Location of Bluff Edge
Our previous memorandum identified the edge of the coastal bluff as the +125 foot elevation contour (*see* **Attachment 2** of February 20, 2018 memorandum), based the bluff edge definition contained in Section 13577(h) of the Commission's regulations[1], and taking into account the modified nature of the bluff at this site. The information available to us indicated that the natural bluff was substantially altered first in the 1960s, when this stretch of Paseo de la Playa was first developed, and again in

[1] "*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 surfaces 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 as the cliff edge.*" (Cal. Code Reg. Title 14, §13577(h))

1989, when the entire upper bluff above approximately +80 feet in elevation was graded and reconstructed, including the addition of a mid-bluff concrete drainage channel and terrace. The existing bluff top is essentially flat, and the slope break defining the bluff edge ("the point nearest the cliff beyond which the downward gradient … increases more or less continuously until it reaches the general gradient of the cliff") occurs at an elevation of +128 feet (*see* Section C, Attachment 2 to 2/20/18 memo). However, a previous bluff top boring revealed that the uppermost portion of the bluff is composed of approximately three feet of artificial fill, likely placed at the time of the house was constructed, overlying natural bluff materials (old dune sands, "Q_{os}"; *see* Hamilton & Associates, 2017, Ref. (3) in our 2/20/18 memorandum). Thus, we determined that at present, the natural bluff top occurs at an elevation of approximately +125 feet, and we identified the approximate bluff edge line as this elevation contour (*see* Attachment 1 to 2/20/18 memo). This delineation is consistent with previous Commission decisions which do not credit artificial fill in determining the edge of a coastal bluff. Our bluff edge determination did not take into account any artificial fill material that may occur on the bluff face. Grading plans included in the after-the-fact CDP application (No. 5-90-868) for the 1989 slope reconstruction indicate that some fill may be present on the bluff face; however, no such material was identified in the Hamilton & Associates (2017) geotechnical study.

In Reference (1), Hamilton & Associates argue that the natural bluff edge, prior to the original development of Paseo de la Playa and the 1989 slope reconstruction, lay seaward of the current bluff edge, and that the net result of historic bluff modifications has been the removal or "cut" of the historic bluff feature. In particular, they cite the 1988 grading plans (attached to Ref. (1)) showing that 133 cubic yards of bluff material were removed from the bluff head and deposited at the toe of the slope. Further support for this argument is provided by historical plans, dated 1961, identifying a "top of cliff" line prior to the original development of Paseo de la Playa. Hamilton & Associates' analysis indicates that this pre-development bluff edge occurred approximately 15 feet seaward of the present-day 125 foot elevation contour, and approximately 40 feet seaward of the edge of the existing house (*see* Ref. 1, Fig. 3).

As a general matter, we find the analysis contained in Ref. 1 to be plausible, and agree that the evidence suggests the pre-development bluff edge was seaward of the current bluff edge. However, it has been long-standing Commission practice, reflected in numerous previous bluff edge determinations, to treat the cut or removal of bluff materials as equivalent to natural erosional processes; in other words, human activities can move the natural bluff edge inland, but cannot, through the use of fill, push the natural bluff edge seaward. The historical cuts described in Ref. 1 have contributed to the current position of the bluff edge, but do not provide a basis for adopting a previous bluff edge line, which no longer exists, for the Commission's current regulatory purposes.

We do not believe the new report provides information that would cause us to revise our previous bluff edge determination, as described in the February 20, 2018 memorandum.

Geologic Setback

Ref. 1 reiterates Hamilton & Associates' previous conclusion that the project site is (a) globally stable against both deep-seated and surficial slope failures, and (b) subject to relatively low long-term rates of bluff erosion that will not threaten the proposed development over the next 75 years, accounting for potential acceleration in bluff retreat driven by future sea level rise (*see* Refs. 2-4 in 2/20/18 memo). As discussed in greater detail in our previous memorandum, we generally concur with these conclusions, and agree that the proposed location of the development provides reasonable

assurance of stability and structural integrity over the life of the project. However, we continue to believe that the use of a bluff edge setback is a prudent measure to minimize potential hazards to the development from upper bluff erosion (visibly occurring on neighboring sites) and unanticipated events (e.g., major landslide, drainage system failure), and to account for the inherent uncertainty in predicting geologic processes in the present and future.

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

Sincerely,

Signature

Joseph Street, Ph.D., PG
Staff Geologist

Signature

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

Michael Baker
INTERNATIONAL

We Make a Difference

July 21, 2017

1118, LLC
Attn: Bijan Armandpour
1118 East 223rd Street
Carson, California 90745

SUBJECT: El Segundo Blue Butterfly Host Plant Survey Report, 449 Paseo de la Playa, Redondo Beach, California (Lot 168 of Tract Map 18379)

Dear Mr. Armandpour:

On behalf of 1118, LLC, Michael Baker International (Michael Baker) has prepared this letter report as response to the *Notice of Incomplete Application* letter from the California Coastal Commission dated April 28, 2017, specifically Item No. 3 – Habitat Impacts requesting a biological survey describing the existing vegetation to determine if habitat suitable to support the El Segundo blue butterfly (ESB; *Euphilotes battoides allyni*) is present, particularly its primary nectar and brood host plant, dune buckwheat (*Eriogonum parvifolium*). The ESB is a Federally-listed as endangered butterfly species generally restricted to remnant coastal dune habitat located near the Los Angeles International Airport.

The project site is located in the backyard at 449 Paseo de la Playa in the City of Redondo Beach, Los Angeles County, California, at the top of relatively moderate-sloping coastal bluffs facing the Pacific Ocean. The survey area consists of the north-south width of the parcel and approximately 80 feet long to the west from the existing structure near an existing brow ditch, which includes the entire proposed project site.

Michael Baker biologist/botanist Dan Rosie conducted the survey on July 19, 2017, between the hours of 8:00 and 9:00 a.m. Weather conditions consisted of approximately 50 percent high cloud cover, a temperature of approximately 67 degrees Fahrenheit, and westerly winds between approximately 1 and 3 miles per hour. The survey was conducted by walking around the survey area evaluating and photographing site conditions and documenting all plant species observed.

The project site consists of tiled patio and ornamental lawn split by an approximate 1-foot-wide shallow brow ditch that extends the width of the parcel. Further to the west, and for the remainder of the slope down to the beach, is dominated by Hottentot fig (*Carpobrotus edulis*), a common, non-native iceplant used as ground cover. Other plant species present were observed in trace amounts, widely scattered throughout the iceplant. These species include non-natives such as searocket (*Cakile maritima*), common ripgut grass (*Bromus diandrus*), and common sow thistle (*Sonchus oleraceus*) and native recruits including deerweed (*Acmispon glaber*) and beach evening-primrose (*Camissoniopsis cheiranthifolia*). No individuals of dune buckwheat or wildlife were observed within or surrounding the survey area, including areas further to the west and downslope. For a complete list of plant species observed during the survey, following this report, refer to Attachment 1. Representative photographs of the survey area are presented in Attachment 2.

5 Hutton Centre Drive, Suite 500 | Santa Ana, CA 92707
Office: 949-472-3505 | 949-472-8373

Based on the results of the survey, the site conditions being entirely developed and landscaped, and the absence of dune buckwheat and its preferred habitat, remnant coastal dunes, the ESB is not expected on-site.

Please contact me at (949) 472-3407 or at dan.rosie@mbakerintl.com with any questions you may have regarding the results of the survey.

Sincerely,

Dan Rosie
Ecologist
Natural Resources/Regulatory Permitting

Attachments: 1. Plant Species Observed List
2. Site Photographs

Plant Species Observed List

Scientific Name *	Common Name
Achillea millefolium	common yarrow
Acmispon glaber	deerweed
*Bromus diandrus**	common ripgut grass
*Cakile maritima**	searocket
Camissoniopsis cheiranthifolia	beach evening-primrose
*Carpobrotus edulis**	Hottentot fig
*Ehrharta erecta**	panic veldtgrass
Erigeron canadensis	Canadian horseweed
Isocoma menziesii	coastal goldenbush
*Lysimachia arvensis**	scarlet pimpernel
*Medicago polymorpha**	bur clover
*Polypogon interruptus**	ditch beard grass
*Polypogon monspeliensis**	annual beard grass
Pseudognaphalium biolettii	two-color rabbit-tobacco
*Sonchus oleraceus**	common sow thistle
*Taraxacum officinale**	common dandelion
*Trifolium hirtum**	rose clover

* Non-native species

Photo 1 – View of the existing structure, tiled patio, ornamental lawn, and small brow ditch, facing south.

Photo 2 – View of the western portion of the survey area and an existing brow ditch, facing south.

Photo 3 – View of the project site and survey area, facing north.

Photo 4 – View of the western portion of the survey area, facing north.

Sea Cliff Buckwheat Specimens observed at 449 Paseo de la Playa in October, 2017

Existing Slope Conditions
at 501 Paseo de la Playa
(neighboring residence)

COASTAL COMMISSION

EXHIBIT # 8

PAGE 1 OF 1

HAMILTON

1641 Border Avenue • Torrance CA 90501 T 310 618 2190 888 618 2190 F 310 618 2191 W hamilton-associates.net

September 4, 2018
Project No. 17-2298-1

Mr. Mark Danesh & Mrs. Faye Danesh
449 Paseo de la Playa
Redondo Beach, CA 90277

Subject: **Bluff Edge Delineation Study and Establishment of Development Setback**
Response to California Coastal Commission Notice of Incomplete Application
[Coastal Development Permit Application No. 5-18-0394]
449 Paseo De La Playa, Redondo Beach, California.

Mr. and Mrs. Danesh,

Introduction

This document provides response to request for additional information by the California Coastal Commission (CCC) by Ms. Mandy Revell (Coastal Program Analyst) dated June 8, 2018, that are deemed necessary for CCC to continue analyzing your coastal development permit application. Specifically, information that would allow the following:

1. Providing any additional geologic information relating to the location of pre-existing natural bluff edge of the site prior to the extensive bluff reshaping and development covered under (previous) Coastal Development Permit No. 5-90-868; and
2. Verification of the site elevations and identification of the datum used to address the apparent offset in elevations between the Danesh site plans and Conger site plans.
3. Additional information to help CCC Staff gain a clear understanding of the scope of the project.

Our response is organized in following sections, as summarized in the following paragraphs: a) Letter of the Law; b) Updated project background including descriptions of 1990 grading, updated site plans with "old" (pre-grading) bluff determination on adjacent lots, projected through the 449 Paseo de la Playa property, evidence of elevation differences between the two lots; Setback calculations using CCC guidelines. Attachments to this response include **Figures 1 through 6**, with available historic and proposed development plans, geologic map, and cross sections, as follows:

Figure 1 - Historic top of bluff designation for adjacent (501 Paseo de la Playa) including subject (449 Paseo de la Playa) property sites [CCC 09-19-2001];
Figures 2a, 2b and 2c – 1988 Grading Plan, details and grade changes (449 Paseo de la Playa);
Figure 3 - Site Plan(*) with 1960's Top of Bluff at Adjacent Lot (501 Paseo de la Playa);
Figure 4 - Geologic cross section and 75-year slope erosion profile (449 Paseo de la Playa);
Figure 5 - CCC Flow Chart for Computation of Total Slope Setback for Bluff-Top Development;
Figure 6 - Conceptual Development – Planting Plan (449 Paseo de la Playa).

(*)Updated plan showing adjacent property approved bluff, and subject property historic (pre-graded) bluff with 10 feet buffer, and elevations between the two lots.

I - Letter of the Law - Coastal Act, Section 30253, states that new development shall:

(1) minimize risks to life and property in areas of high geologic, flood, and fire hazard; and
(2) assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Similarly, the paper written by Mark J. Johnsson (Proceedings California and World Bluffs, 2002), "Establishing Development Setbacks from Coastal Bluffs," proposes that "coastal development be sited a sufficient distance landward of coastal bluffs that it will neither be endangered by erosion nor lead to the construction of protective coastal armoring. . . A development setback line must be established that places the proposed structures at a sufficient distance from unstable or marginally bluffs to assure their safety, and that takes into account bluff retreat over the life of the structures, thus assuring the stability of the structures over their design life."

The safe building line is located at approximate elevation 90± feet, as shown on **Figure 3**. The safe building line is located more than 80 feet down slope of the proposed project.

Note 1: Based on the location of the safe building line, the proposed construction is in compliance with the letter of the law.

II - 1988 Site Grading and 1990 "After the Fact" Grading Permit at 449 Paseo de la Playa – Per CCC application 5-90-868 (copy attached), filed on September 25, 1990, approval was granted for restoration and revegetation of the bluff, consistent with Sections 30251 and 30253 of the Coastal Act. This included grading work performed at the site in late 1988, involving approximately 971 cubic yards of earth, of which approximately 133 cubic yards were taken off the bluff head. Most of the earth moved was deposited above the toe of the slope to create a level area.

Note 2: Therefore, the subject lot was essential "cut" at the top (not filled), removing the historic bluff feature, which was further out away from the existing residence.

CCC Staff subsequently met with City of Torrance Building and Safety (B&S) officials and conducted a site visit with said B&S officials and applicant's engineer and agreed upon a remedial plan which meets CCC Staff concerns.

Conditions of the 1990 Approval: The CCC approved a permit for the proposed development subject to the conditions listed below, on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, and the development would not prejudice the ability of local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of the Coastal Act. The CCC furthered approved a permit for the proposed bluff restoration and revegetation on the grounds that the proposed grading and revegetation represented an adequate restoration of the bluff.

III - Calculation of Slope Setback –

For informational purposes, the "historic (pre-graded) bluff" is provided on the attached Site Plan and Cross Section (**Figures 3 and 4**). Due to being a "cut" lot, the Historical Bluff is located at approximate elevation 125 feet above MSL only at the point where it intersects the property line with the neighbors (501 Paseo de la Playa) and pulls downslope from that contour as the historic bluff crossed the subject lot (449 Paseo de la Playa).

In the case of the 'Torrance Bluffs', which transition from bluffs on the south to beaches on the north, *the Coastal Commission has required that the residences be setback landward of a safe building line*, which (for the subject lot) is closer to elevation 90 feet MSL, well below the proposed project.

Additionally, if using setback procedures, the following information is provided to parallel setback analysis typical of CCC projects.

a) Slope Stability Setback: is based on a computed slope stability with static factor of safety (FS) of 1.5, obtained from multiple searches for potential lowest (critical) value. This information was previously submitted to the CCC (H&A report dated July 3, 2017), and is also presented on **Figure 3** of this letter of response with additional pertinent information. Because slope stability conditions with the zone to be developed is acceptable (FS > 1.5), *the Slope Stability Setback is equal to zero (0 feet)*.

b) Slope Erosion Setback: A negligible Long-Term Bluff Retreat (LTBR) between 1992 and present (2017), as documented in H&A report dated July 3, 2017, is to be noted. This represents the time from the slope improvements. Hence, very little retreat has occurred after slope improvements (namely, after installation of lateral bench drains, slope angle reductions). Further, past slope improvements have considerably reduced LTBR. The good condition of the 1990 improvements at the site is to be noted, representing a period of approximately 27 years, which also give testimony to the slow LTBR. A slope angle of approximately 34 degrees (pre-grading 1.5:1 [H:V] average slope gradient), further pointing to the favorable 18 to 19-degree slope angle (graded 3:1 [H:V] average slope gradient), now current, as shown on **Figure 4**.

The outcropping of the Malaga Mudstone [Tmg] is about 25 feet above current mean sea level, as shown also on **Figure 4**. Assuming the absence of the sand shown on the cross-section, erosion of the toe of the Malaga Mudstone, as shown on the cross-section, would logically require more than 75 years to produce a 1:1 (horizontal to vertical) slope as shown in the cross-section, yet it is assumed herein.

Our estimated average erosion value (LTBR) of 4-inch/year would require either many very strong storms or a catastrophic rise in sea level, or both. Further, the favorable attitudes of bedrock bedding within the Malaga Mudstone should be noted regarding bedding plan failures within the Malaga Mudstone. Based on historical photographs, the Malaga Mudstone typically supports slope ratios steeper than 2:1, even steeper than 1:1. Because slope erosion setback is very low, *the Bluff Retreat Setback at the top is equal to zero (0 feet)*.

c) Default 10-foot Buffer:

Therefore, based on CCC guidelines for defining total setbacks for bluff top developments, as shown on **Figure 5**, and summarized by the equation below:

Total Setback = Slope Stability Setback + Bluff Retreat Setback + Default Buffer

as well as our previous discussions and correspondence with CCC Staff. Consequently, a *default buffer of 10 feet*, is deemed in compliance with current CCC regulations, adequate for the subject site, as shown on **Figure 4,** rather than the 25 feet set back previously considered by CCC Staff for this site (449 Paseo de la Playa). Namely,

Total Setback = 0 feet + 0 feet + 10 feet = 10 feet

A conceptual development planting plan is included on **Figure 6** of this letter or response to Notice of Incomplete Application.

IV – Closure

We are grateful to CCC Staff for the time allowed for Hamilton & Associates to discuss the project conditions and provide additional information requested. We are available for any additional question or request for clarifications the CCC may deem necessary.

Respectfully submitted,

HAMILTON & ASSOCIATES, INC.

Brendan J. Miller
Staff Engineer

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Principal Geotechnical Engineer

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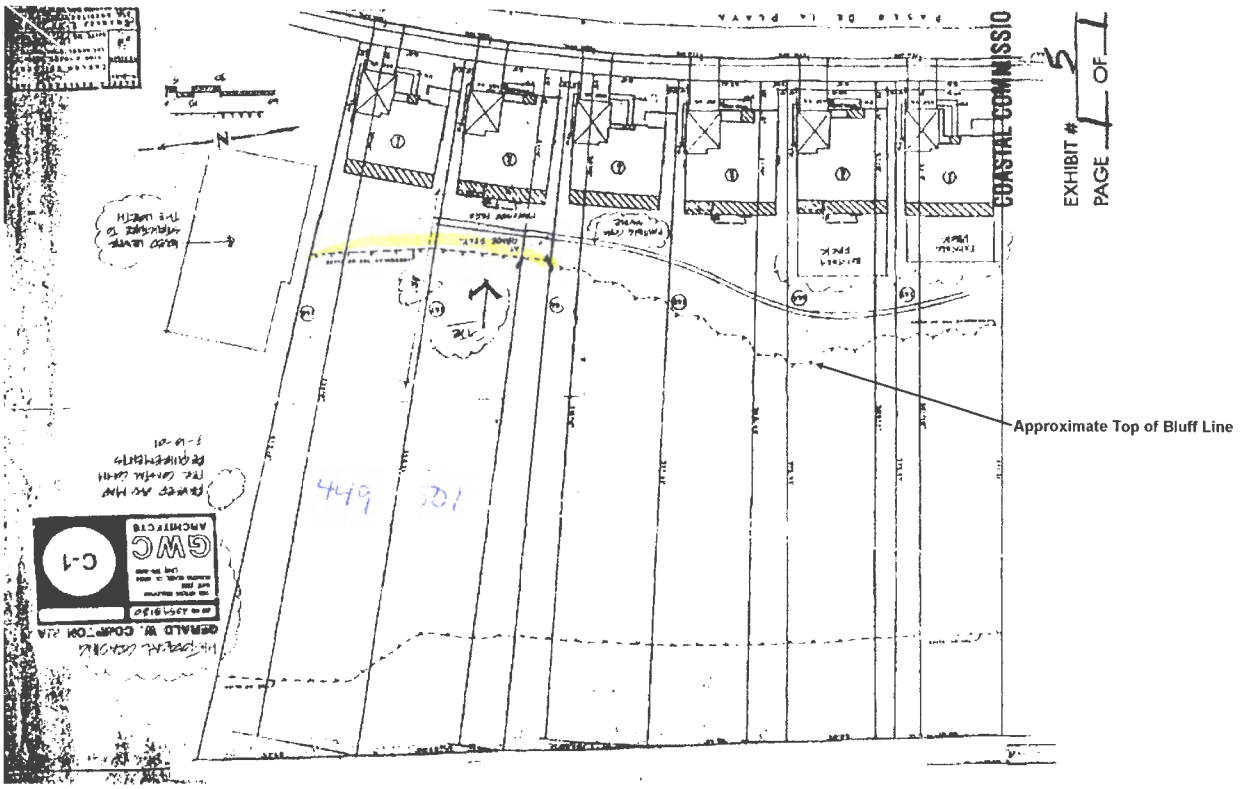
Top of Bluff Designation (CCC, 09-18-2001; 501 Paseo de la Playa)



Project: **Bluff Edge Delineation Study**	Project No.: **17-2298-1**
Hamilton & Associates	Figure No. **1**

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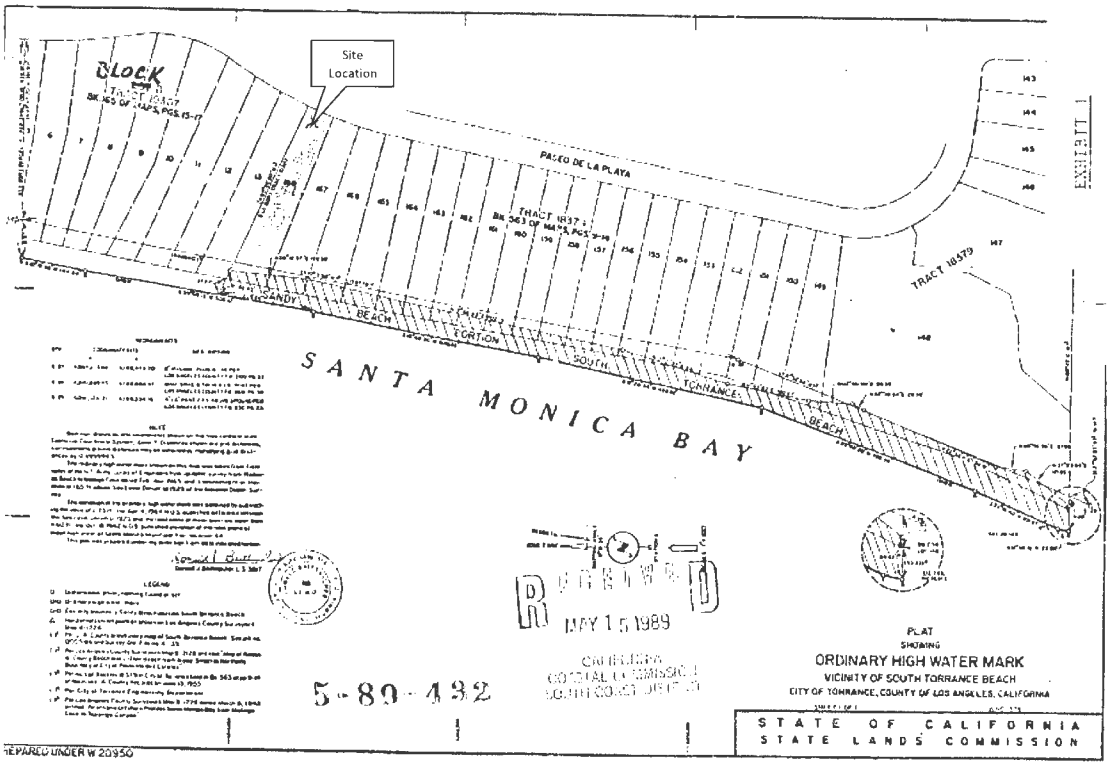
1988 Grading Plan at 449 Paseo de la Playa - Site Location



Project: **Bluff Edge Delineation Study**	Project No.: **17-2298-1**
Hamilton & Associates	Figure No. **2a**

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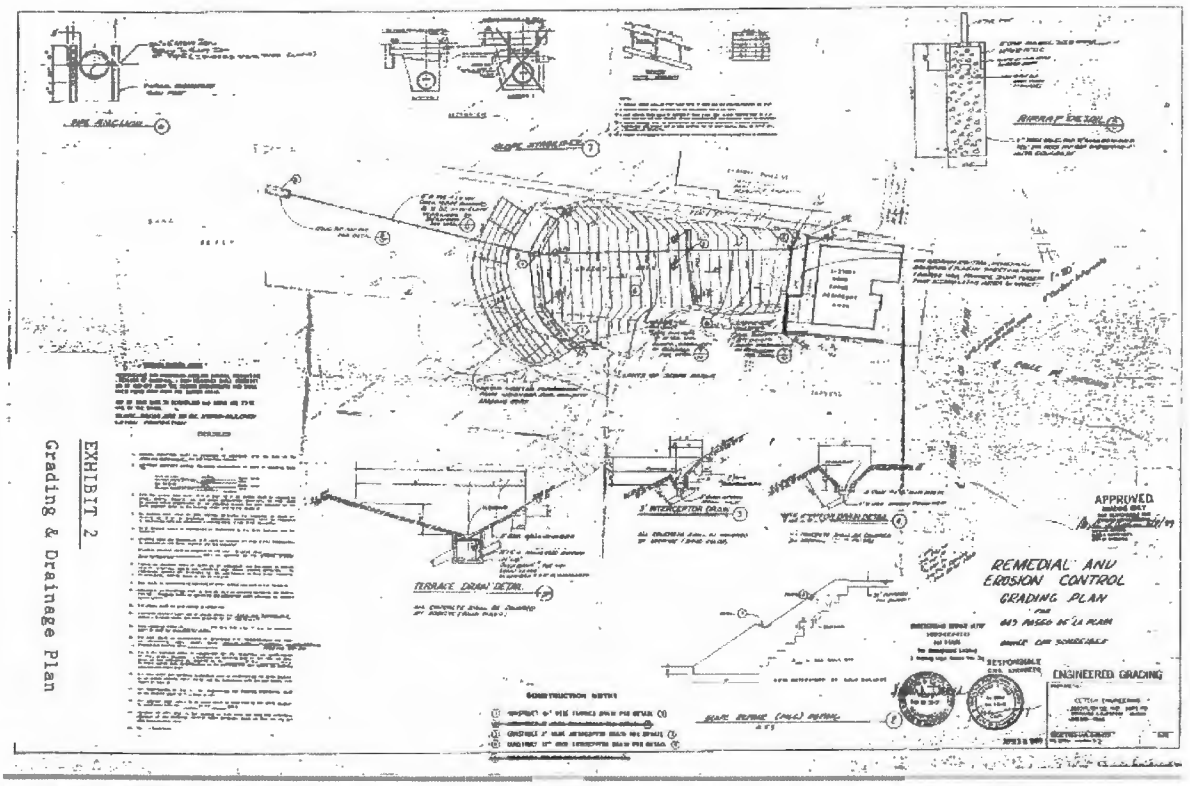
1988 Grading Plan Details at 449 Paseo de la Playa



Project: **Bluff Edge Delineation Study**	Project No.: **17-2298-1**
Hamilton & Associates	Figure No. **2b**

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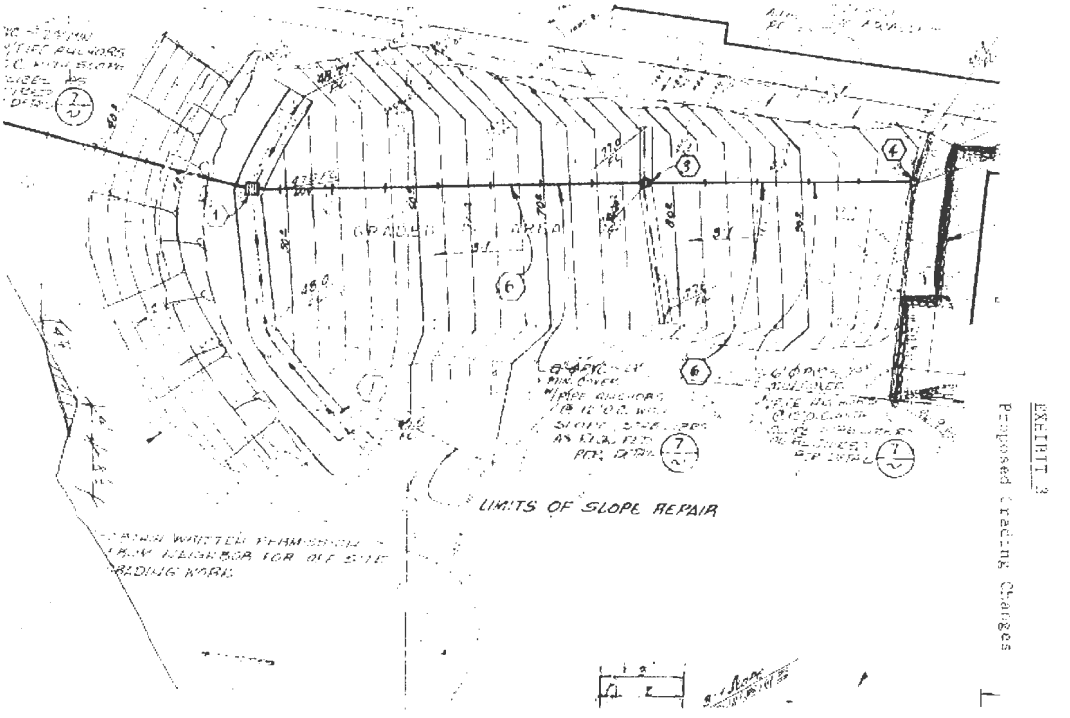
1988 Grading Changes at 449 Paseo de la Playa



Project: **Bluff Edge Delineation Study**	Project No.: **17-2298-1**
Hamilton & Associates	Figure No. **2c**

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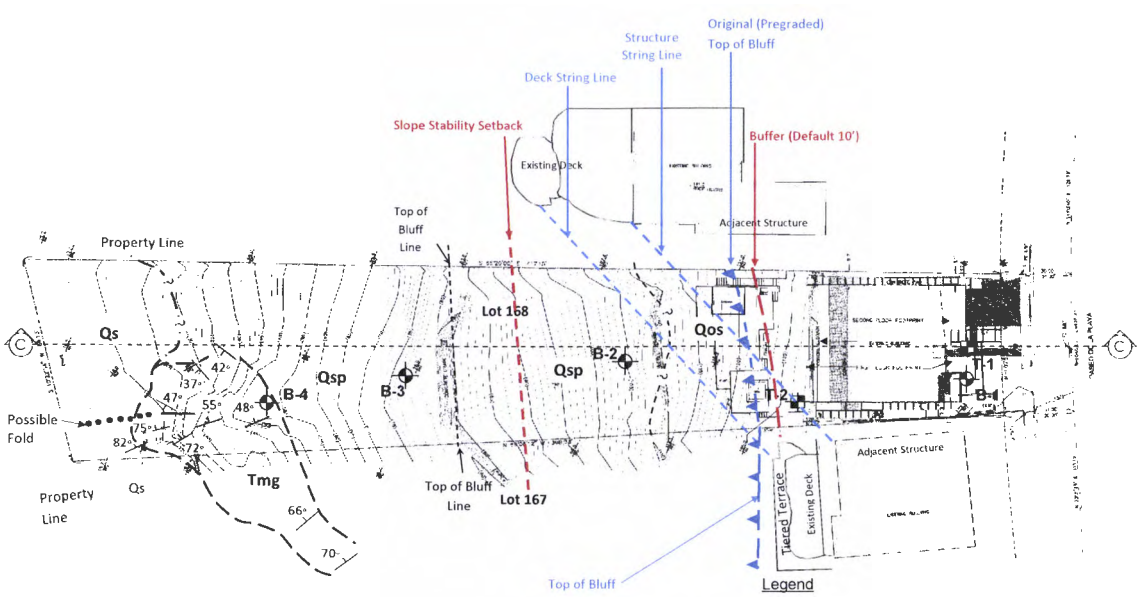
Site Plan with 1960's Top of Bluff at adjacent 501 Paseo de la Playa



449 PASEO DE LA PLAYA
REDONDO BEACH, CALIFORNIA

B-1
Approximate Location of Borings

T-1
Approximate Location of Exploratory Test Pits (TIN Engineering, Sept. 2015)

Approx. Scale= 1" = 40'

Project: **Bluff Edge Delineation Study**

Updated June 2018

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Figure No. **3**

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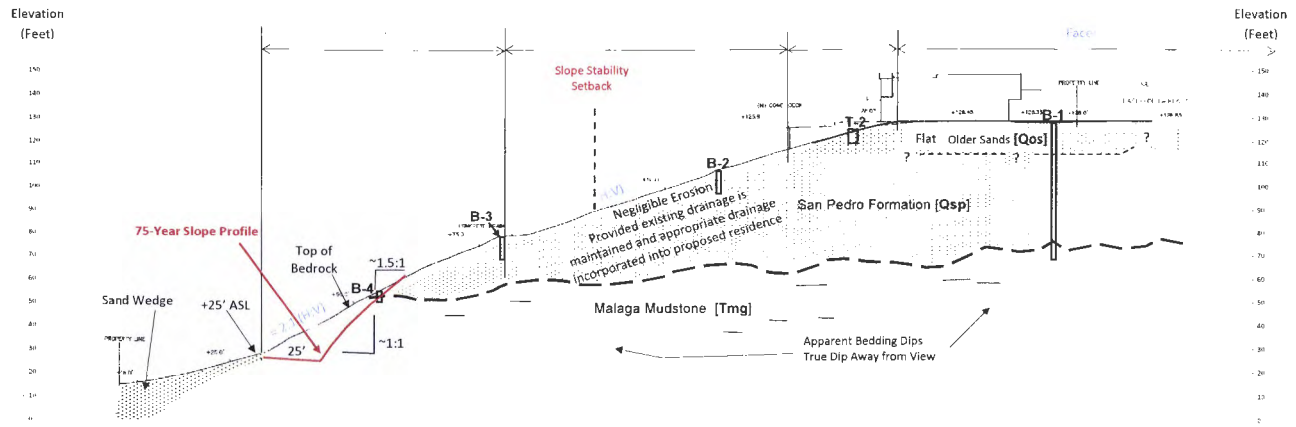
Geologic Section C-C' (Updated 1-22-18)

With 75-Year Slope Erosion Profile



Project: **Bluff Edge Delineation Study**	*Approx. Scale: 1" = 40' (Horizontal & Vertical)*	Project No.: **17-2298-1**
Hamilton & Associates		Figure No. **4**

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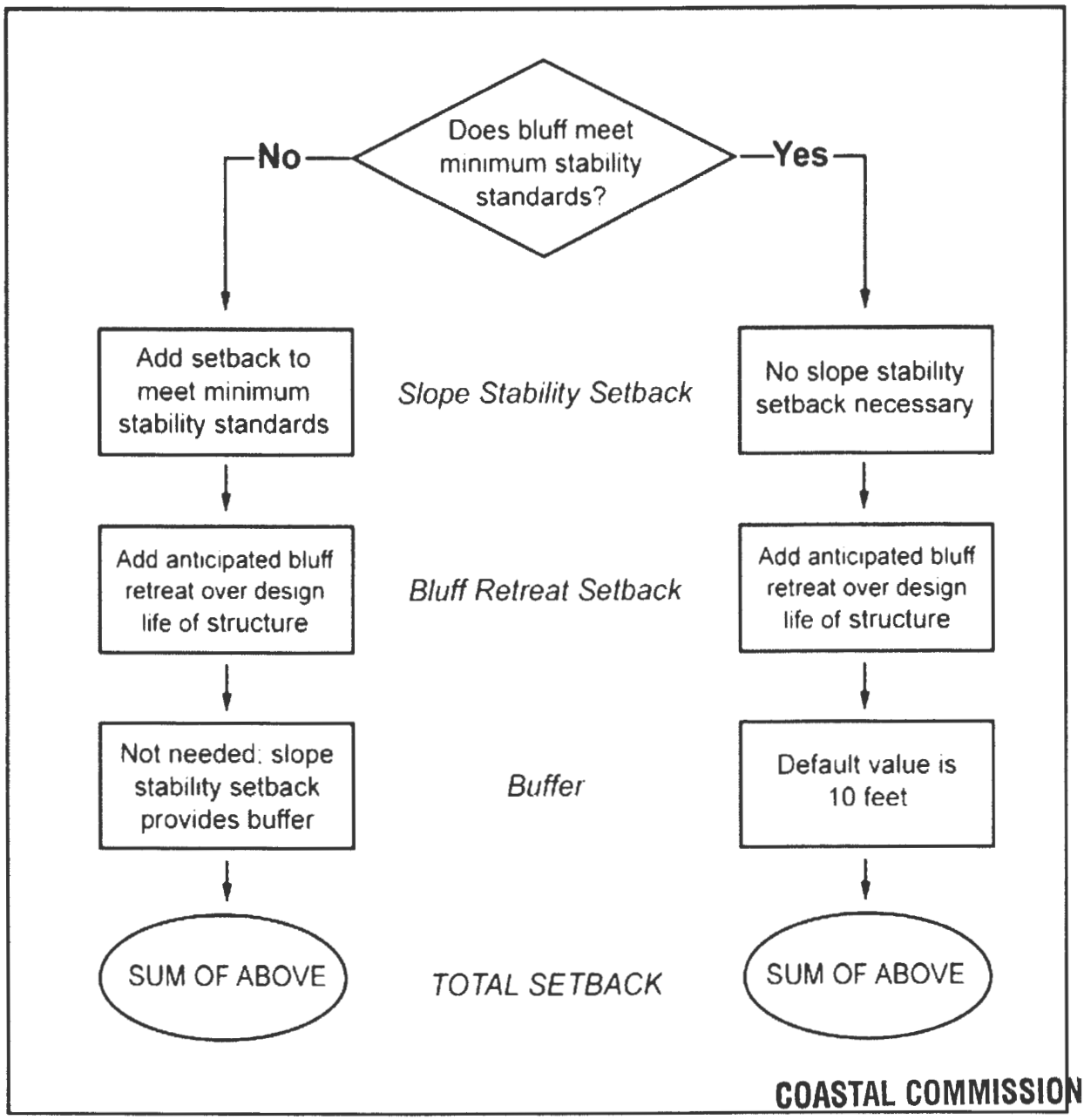
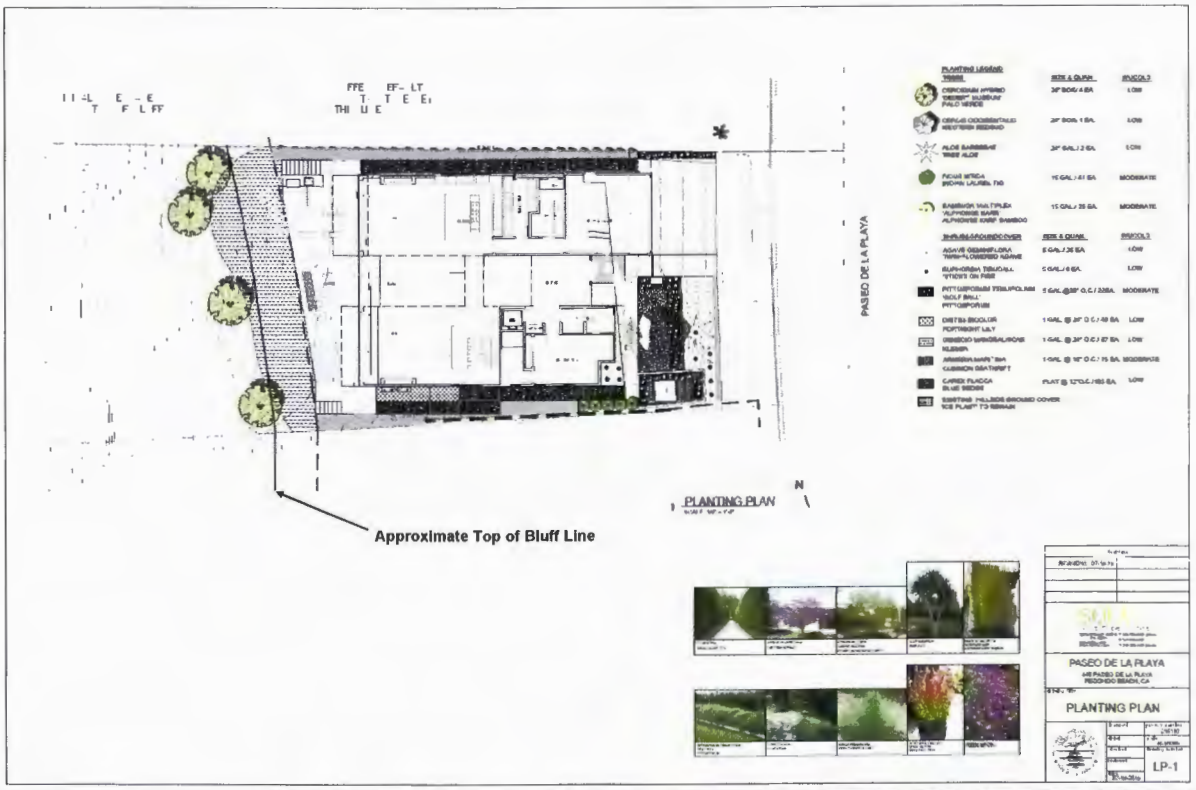
Defining the Total Setbacks for Bluff-Top Development



Project: **Bluff Edge Delineation Study**
Project No.: **17-2298-1**

Figure No. **5**

Conceptual Development Planting Plan



Project: **Bluff Edge Delineation Study**

Project No.: **17-2298-1**

Hamilton & Associates

Figure No. **6**

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